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Dorper Sheep Breeders’ Society of South Africa
PO Box 26 • Middelburg • Eastern Cape 5900 • South Africa
Tel: +27 (0)49 842 2241 • Fax: +27 (0)49 842 3589
E-mail: dorperinfo@adsactive.com
Website: www.dopersa.co.za

Brochure committee:
President and council members. Co-opted: Dolf Lategan

Author:
Dolf Lategan
5 Villa Sodette • 15 Gilliersstreet • Parys 9585 • South Africa
E-mail: dorper@worldonline.co.za

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Charmainé Alberts Design & Marketing
PO Box 328 • Brandfort 9400
Tel: +27 (0)51 821 1783 • Fax: +27 (0)51 821 1267
E-mail: palberts@telkomsa.net

Dorper | Into the new century
Technology currently presents new challenges in the Dorper Industry.

Our brochure and training manual fondly known as the book of knowledge by students attending courses illustrates new visual methods in training.

This manuscript has been established in various countries and recognised as an outstanding training manual in different languages around the globe. This depicts the Dorper in a new innovative manner, which is also recognised by other breeds.

The pioneers of this beautiful breed can be extremely proud of the manner in which the new generation annually strives to reach greater goals.

We trust that this new edition will also be a huge success creating even more enthusiasm and interest than the previous editions.

The future of the Dorper lies in the accumulation of sound information, through performance and progeny testing. This information will be of great value to the commercial farmer and successfully aid him in soaring to greater heights.

More information provided by the stud breeder, will eventually result in a contended customer.

Correct selection through knowledge and practical experience will ultimately lead to success.

Gideon Vivier
President SADBS

Foreword
by the President
We proudly present you with an updated document. We continuously strive to improve this book to keep up with the latest facts. We are always committed to making everyone part of “Information through Technology” and our new PowerPoint training system is designed to do just that.

Several people have contributed towards the project in many and varied ways. It would simply be impossible to acknowledge each and every one individually. We take this opportunity in extending our heartfelt thanks to all involved.

Of course the best way of learning is through practical experience, but in the absence of the opportunity to work with a lot of animals, it is imperative to find alternatives that enable everyone to see and appreciate the attractiveness and performance of our Dorper breed.

This system, (photos and sketches) is easily adaptable for presentation in other languages, and available to all regions and places. The information contained in this document can be used as a primer for mini-, junior- and senior courses.

While every effort has been made to ensure the quality and consistence of the information in this document, the Dorper Breed Standards of Excellence as published (in Afrikaans) by the South African Dorper Sheep Breeders’ Society remains the authentic reference in case of discrepancy.

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The future of the Dorper Breed

The Dorper has surpassed all expectations and can be classified as one of the fastest growing small stock breeds worldwide. It is therefore important to keep up with modern trends, technology and training.

To stay on top and with bigger demands on labour costs it is imperative that the farmer must be equipped to breed the best. This can be achieved through record keeping and performance testing. It is also important to supply the commercial farmer with the best value for money. They are entitled to have the best source of good breeding material for maximum performance at minimum age on slaughter lambs.

Due to this demand it is also important to keep up with the best training methods. Our new PowerPoint training system, now available on CD, was designed according to research done and is based on the following research pertaining to understanding and remembering. It measures the level of information retention as a percentage, given different methods of instruction:

- When we just hear, we retain up to 20% of information
- When we just see, we retain up to 30% of information
- When we hear and see we retain up to 50% of information
- When we hear, see and with explanation we retain up to 70% of information
- When we add practical exercise to this we can improve retention up to 90% efficiency

If we look back on what was achieved already through this book, using lots of photos and explanations of the Breed Standards, we can applaud this research. Eric Kara was the first black African trained and qualified through this system. After the exam Eric was asked: “How did you manage to do so well in spite of the fact that you do not have high school qualifications?” “Sir”, he replied “I listened carefully and the pictures in the book taught me a lot.” Eric has qualified as an Official Judge and we are very proud of him. Congratulations Eric!!

As the photo below proves, training by means of the correct equipment can motivate everybody to be successful.
The breed continues to make outstanding progress and although originally bred for the more arid regions, it is now successfully farmed throughout the country and even beyond our borders, from extreme cold to tropical and desert conditions, worldwide. Due to a surplus of slaughter sheep during the 1930’s which could not be absorbed locally or be exported because of the poor carcass quality, it became apparent that a new breed was needed that could produce a high quality carcass in the drier areas of South Africa.

The Search for a New Breed

The Department of Agriculture temporarily solved the problem by crossbreeding imported mutton rams with indigenous non-woolled as well as Merino ewes. These carcasses were successfully exported.

However, in addition to other difficulties encountered, the crossbreeding had the disadvantage of having to be continuously applied and thoroughbreds had to be maintained. Further research and experiments were continued at agricultural colleges, experimental farms and in cooperation with farmers and as a result of these experiments it was established that the Dorset Horn x Blackhead Persian produced most of the desired qualities. Subsequently, it was decided to concentrate all the research on these two breeds.

Development of the Dorper Breed

The experiments proved that whenever the sheep were bred above the half blood level to British mutton breeds, the conformation continued to improve, but the most important characteristic of adaptability to harsh conditions disappeared.

Consequently it was decided to develop a new breed out of the half-bred Dorset Horn x Blackhead Persian and by strict selection of the desired type a new breed was established. This important milestone was reached in 1942.

It is fitting at this stage to record the names of certain people who played an important role in the establishment of the new breed. Mr. David Engela, Sheep and Wool Officer, was in charge of all cross breeding experiments at the Grootfontein College of Agriculture. All cooperative experiments with farmers were carried out under his leadership - his enthusiasm and guidance inspired each and everyone.

Of the farmers who co-operated, the following must be mentioned: Mr. R.Y. Edmeades Norvalspont; Mr. D.J. de Smidt Weltevrede Hopetown; Mr. W.R. Ludik Forfar Witter; Mr. Alan Stahl Somerlus Philipstown; Mr. C.J. v.d. Berg Fraserburg.

The Founding of the Breeders’ Society

In spite of the steady increase in numbers of sheep and breeders, the progress after 1942 left much to be desired, mainly due to the lack of a concerted effort. It was the intention of Mr. D.J. Engela to remedy this by the forming of a Breeders’ Society, but this was unfortunately prevented by his sudden death in September 1949.
However, the initiative was later taken by Mr. R.Y. Edmeads who called an inaugural meeting on the 19th July, 1950, at the Grootfontein College of Agriculture. The thirty interested breeders and few sheep and wool officers present at the meeting unanimously decided to establish a Breeders’ Society.

After much deliberation they also agreed on the name “DORPER” for the new breed - a bilingual coupling of the first syllable of the names of the parent breeds.

**DORSET HORN RAM**

**PERSIAN EWE**

= **DORPER**

### The White Dorper Sheep

Various breeders (a leading role was played by Mr. Graham Rous, Middelburg, E.C.) originally decided to concentrate on the breeding of white sheep, and these were bred out of the Dorset Horn x Blackhead Persian or the Dorset Horn x Van Rooy crossbred.

The white sheep were first known as the “Dorsian” (or “Dorsie” in Afrikaans our native language). A separate Breeders’ Society was established, but it was later decided that it would be to the advantage of the breeders to affiliate with the Dorper Sheep Breeders’ Society, since the aim was to breed the same type of sheep as the Dorper with the exception of the colour. This affiliation took place in 1964.

### Progress

The Dorper breed continues to grow from strength to strength and is now, numerically almost the most popular sheep breed in the Republic. Under the watchful eyes of the council, inspectors, Breed Director and breeders, the standard of the sheep continues to improve and the Dorper can now compete with the best.
Before getting to the KOS idea, one should bare in mind the following general facts:

**You must have a plan**

a. The days of purchasing land and farming because a friend or relative did, no longer exists.
b. It has become a highly professional trade.
c. Do a survey in the area where you want to farm. Establish the demand for your product, make sure that all the resources you need are obtainable and plan a market strategy.
d. Be sure that what you want to do is what you would love to do and if you have a family that they support your idea.
e. Add up the pros and cons and set yourself goals.
f. Establish goals and work towards them.
g. If your plan does not work, change it before it is too late, and make sure you know why it does not work. Also make sure that you do not repeat the same mistake.

**Manager of a factory**

a. See yourself as a manager of a factory.
b. Being a manager requires skills and responsibilities. Therefore you can only blame yourself for poor quality and performance from this animal factory.

**Love for your breed**

a. If you love what you are doing and you are proud of it, then half your plan is in place.
b. Participate in events. Show what you are doing and compare your product.
c. Allow people to encourage you through your achievements and observe what is happening in your breeding. This prepares you for those unforeseen setbacks.

The formula that we propose for all of this is contained in three letters...

**KOS** - this is the Afrikaans (Dutch) word for “food,” which is a topic on its own in small stock farming, but also stands for:

- **K - Knowledge**
- **O - Organisation**
- **S - Selection**

Feeding is of the utmost importance and it is therefore important to know:

If your total feeding and nutrient planning is not sound, the chances of collapsing all three legs of KOS are good.

**Knowledge (first leg)**

They say that knowledge is power. Whatever you want to farm with: collect as much knowledge and information possible to make the correct decisions. It is also true that knowledge gained through experience is knowledge that will not be forgotten easily.

a) Collect information on the history of the breed

It will save you from repeating mistakes that have already been made. You will be able to follow and explore the correct and most economical trends. When later you do business, and people respect your knowledge, you would have earned the right to set the trend in establishing prices. Knowing that it took several breeders more than half a century to establish the present Dorper, why start from scratch?

b) Participate

Attend courses and gather ideas from different angles to support your plan. Do not underestimate collective wisdom. Join a local club or association for your breed. This will enable you to be knowledgeable about what is happening, and compare notes with people in similar situations. Attend field days, shows, and auctions where you can hear and see what the trend is and establish whether your breeding program is on course.

c) Needs of the breed

As sheep are one of the oldest mammals that man has already taken out of nature, about 3000 B.C, posing a huge responsibility for you, as a manager. For instance, when sheep are left in nature without boundaries they will graze different pastures, according to their instinct to thrive. However, we camp (fence) them in and now it is our task to fulfil all their needs. (See section on Nutrient requirements for sheep.)

d) Breed standards

All breeds have breed standards of excellence. Know them in order to perform and associate with the best. For your convenience the Dorper Breed Standard of Excellence is included in a very practical fashion in this document. Remember that this is just a starting point. Always attend courses with practical exposure to gain more knowledge. If you know the Breed Standard of Excellence well, you can benefit by paying less for your mistakes. Performance testing will also give valuable information. **Never judge a book by its cover!**

e) Benchmarking

To know whether you are in line with other breeders you must continually compare yourself to the market. Remember that no one has bred the ideal animal yet, so take up the challenge, aim for this goal, and work towards it. “The biggest room in the world is the room for improvement.”

f) Inspectors

All breeds have their inspectors or breed directors, who glean a lot of knowledge as they see all the different breeders. Use them, they can help you overcome difficulties and reach your goals.

g) Inoculation and dosing

This is where the area of your farm, the size of your farm
and many other factors influence this very important aspect. Be a good manager and follow the pertaining to your area. Acknowledge your veterinarian in this regard. For your convenience a discussion and video on parasites by Virbac© is included on the training CD. However, the truth is that this is such a variable subject for each area that it is important to closely follow the rules ascribed to yours.

h) Disease and symptoms

The saying that prevention is better than cure certainly applies here. The earlier you can identify an animal that is not normal, treat it for a better chance of survival. Remember that many animals die because of secondary problems caused by the first problem. For instance, if a sheep gets sick with a high temperature and you detect it very late, you can inject the sheep with an antibiotic, kill the infection, but because of the temperature the sheep's organism in the stomach will die and will stop functioning. The sheep will not eat, will grow leaner and leaner, and may eventually die. That is why you must know and see your animals as frequently as possible. Pregnant ewes in good condition sometimes turn on their backs and cannot get on their feet again. If such an ewe is not helped within a few hours, you will find her dead, with symptoms that may mislead you as to the cause of her death. Be observant and when in doubt, call the veterinarian. “The eye of the master fattens the flock, and also saves the flock.”

i) Environmental Factors

Remember that when we as humans are hot or cold, we can remedy this. However, you must think for the sheep since they were taken out of their natural habitat. Yes, they do make plans like sleeping in a warmer place in winter or standing in a circle hiding their heads from the scorching sun, but this is not all. When it is very cold, they need more energy. They burn it from their body fat, and subsequently lose weight. To compensate for this you can give them a supplementary mixture that they can lick or something like chocolate maize (high in energy) that will help fulfil their needs. When it is very hot and there is no shade it will help to plant a tree or put up shade cloth close to the water drinking point. There are lots of trees and bushes in the camps, where I farm which is also the habitat of the tick that causes paralysis. This tick can cause death if the animal is not treated immediately. I have made a plan by putting up shade cloth cover away from the bushes, close to the water. This is also the ideal spot for their lick. The sheep just love the idea! The result was that I had minimum tick problems, and saved on dip and labour costs. This idea also makes your organisation easier as all the sheep gather here, making it easier to count them and recognize or observe any problems. In Afrikaans “Dutch”, there is a saying “'n Boer maak altyd 'n plan!” Literally translated, it states: “a farmer always makes a plan.”

j) Analysis of soil and fodder

How can you expect your animals to produce and thrive if there are mineral deficiencies in the soil? If you look under nutrient requirements you will realise how important the value chain for this is in order to get the animal productive. Know the shortfalls on your farm and supple-ment them, otherwise you will be disappointed with the performance of your animals. I cannot think of any deficiency that cannot be addressed with modern technology.

k) Breeders’ Society

All breeds have their societies and when the time is right, join them, and climb the ladder to success. Set goals, plan them step by step, and grow systematically. Success does not occur overnight but can be earned by gleaning knowledge. “It is easy to eat an elephant if you do it bite by bite.”

Organisation (second leg)

You may have all the knowledge in the world but if you can’t utilize it, you will soon find yourself in a vacuum.

1. Plan your farming

Quantity and quality are always important factors in farming. One should always farm with the optimal quantity of quality sheep that your farm area can accommodate throughout the year. Remember that after lambing, the mouths that eat will steadily increase. Lambs already start grazing from 2 weeks of age and eat about half the intake of a grown up sheep at 3 to 4 months. Quality therefore is a very important aspect: rather have good, productive sheep grazing on your farm, than ones that eat, but do not adequately compensate for their keep in cash return. It is expensive to buy food. Therefore have the ideal quantity of quality sheep for your set-up. The number of small stock to carry per hectare or acre will differ from farm to farm, and area to area. It will therefore be difficult to venture an opinion.

2. Camps and grazing. (Camps are enclosed areas with fencing, also called paddocks.)

There are lots of ideas as far as size of camps and grazing are concerned. The more natural you can keep farming, the cheaper it is, and the better the results. Divisions vary with the type of breed you farm with and the type of grazing to utilise. Be assured that enough camps make organization so much easier! Parasites are a problem especially in high rainfall areas with stagnant water in camps, valleys etc. This must be considered in your plan. See the section on parasites, but keep in mind that the cycle of parasites is plus minus 3 weeks. Remember that the animal is the carrier of the parasite. In addition, if you can have enough camps to save a camp or two each year with no hooves on it, your veld (pastures) can only benefit from it. Root growth will be stimulated when there is no grazing during the growth period. Consult the agricultural advisor in your area and let him help you draw up a plan. Do not overgraze a camp and if you have cattle, let them lead and then follow with sheep.

3. Water purity

Don’t be fooled by the look of clean water, a lot of harmful organisms that cannot be seen with the naked eye can live in water. This means that when you can see the water is not clean, animals have already taken in a lot of bacteria or unwanted eggs. It is always difficult and time consuming to clean water troughs. It may be advisable to treat the storage place. With large amounts of sheep in one camp, too small a trough will not leave them with enough cool drinking water when they arrive.
at the drinking point. Of course, the pressure of the water supply and distance from the reservoir plays a role. Think about all these aspects that can lead to your farming being a huge success. There are many ways to overcome these problems i.e. shade over the trough, cleaning agent in the trough, regular cleaning etc.

4. Mating

This is the more interesting part, and is a challenge to get production out of this factory. You should see this as a real factory. If you want to produce a product and you use the wrong material or inferior material, your product will be inferior. If you use the right material and you are disorganised, or do wrong in manufacturing the product, it will also ruin your business. If you do it correctly, you will be proud, and your business will perform and advertise itself. The same principles can be applied to being the manager of a farm.

a. When you put the rams with the ewes you want the maximum and best return. To obtain this you must know that there is a low and high season for conception. Invest in knowledge, and obtain a conception guide for your area. There is much more to it, than meets the eye.

b. Your feeding program must be at a high level. This is called stimulation feeding or flushing the ewes. Putting the ewes on an additional high protein feed, or a new, good grazing camp will stimulate them.

c. The ewes’ condition must be good and at a rising nutritional level. Remember, animals that are too weak, too lean, or too fat are not suitable and will not conceive easily.

d. Be sure that the rams are in good condition. Their sperm count must be good and their testes healthy with no penis disease. Penis disease is awful and can ruin your business. If in doubt, consult your local veterinarian.

Sheep management for better results

The Physiologically important times of a sheep

Dr Dave Midgley (Pfizer Animal Health)

This simple and tested recipe is a winner, because it chooses the sheep’s side.

Physiologically important times in the production cycle are highlighted.

A program focusing on the sheep and what happens in its body has an advantage above conventional programmes that focus around the farmer, parasites and seasons.

The latter varies constantly, while physiological times are a given.

In this “program” we focus on PRODUCTION, PROFIT, HEALTH and NUTRITION - all nice positive things rather than on diseases and parasites.

We must still consider everything, but problems are not our main focus area.

i) Follicle development in the ewes:

Photo 1: Normal cycling ovary (Follicles and corpus luteum) (4)

A lot of new information on this topic is available and a lot of research is still being done

- A follicle takes more or less six months to grow and develop.

- Nutrition 6 months prior to mating has an influence on the conception during mating, hence the old wisdom that you normally feel the effects of a drought in the year following the drought. Six months prior to mating coincides with the period just after weaning in maiden ewes and the so-called “weaning stress” can have an effect on maiden ewe conception rates.

- Another very important developmental stage of the follicle is the two month period before ovulation - the so-called antral phase, where the follicle moves towards the surface or antrum of the ovary (see later under RAM CARE).

- Nutrition in March/April plays an important role in the spring mating time and nutrition in October/November plays an important role in the autumn mating season. These are also normally times of seasonal changes – from summer to winter, and vice versa, when the grazing is either in a downward phase just prior to winter, or still in the early stages of growth before the summer growing phase. (in the summer rainfall areas)

ii) Rame Care:

(Sperm development and maturation in the ram, as well as the end stage of pre-antral and antral developmental phase of the follicle in the ewe)

Once again nutrition is very important.

Energy plays an important role by helping the rumen microbes to utilize rumen degradable protein and other NPN sources. Excess NPN accumulates as urea and ammonia, and breaks down proteins and fats. The sex hormones (Testosterone and Estrogens) are lipoproteins – made up of protein and fat particles.

Rumen bypass proteins are utilized better and one of the
consequences of feeding them is better sperm quality, bigger testes and “purple loins” as result of the higher testosterone levels.

Purple coloured loin

Sperm development and maturation takes more or less 2 months. In other words sperm that are produced now, are utilized in two months time.

Normal sperm (1)

Shear rams before mating if necessary.
Trim their hooves and give them “better” food.
Supplement Vit. A and trace elements. (eg. Embamin TE or Multimin).
Vaccinate rams and maiden ewes against Mannheimia (Pasteurella) and Clostridial diseases [with OneShot Ultra 7 (G2804 of Act 36/1947) or Ultrachoice 7 (G2456 of Act 36/1947)].
Deworm maiden ewes with a remedy effective against nasal worm. [Valbantel (G732 of Act 36/1947), Ranox (G1599 of Act 36/1947), Dectomax (G1726 of Act 36/1947)].
Test rams for breeding soundness. (By a qualified veterinarian)

Give special attention to testes circumference, condition score, loin color, semen quality and mating dexterity. Check for absence of lesions on the mucosa - “Peestersiekte”.

It does not help if the ram has a good semen quality but is unable to cover or serve a ewe!
A proper semen analysis includes the following: Volume, colour, density, movement, a smear which is used to check sperm morphology and also for the absence of white blood cells (infection)
If you pick up a problem in one or more rams, there is still enough time to rectify it.

Start with a fitness program of rams. Forced walking for ±1 km once or twice per week.

Check teaser rams and make new ones if necessary.

Research done by Dr. Jasper Coetzee (3) proved that conception in maiden ewes is better if they are flushed for two months, instead of three weeks as is done in older ewes. (Antral phase of follicular development)

Do the “3T – test” in the ewes: Check the Teeth, “Toes”, and Teats:

Cull ewes with genetic defects and with worn teeth that will not be able to raise a lamb again, as well as those with chronic hoof deformities and damaged udders.

iii) Flush feeding:

Three weeks before mating.

Deworm ewes (Valbazen, Valbantel, Ranox or Dectomax), supply trace elements and give Vitamin A. Vaccinate against Clostridial diseases (OneShot Ultra (Reg. no. G2804 Act 36/1947) or UltraChoice 7 (Reg. no. G2818 Act 36/1947).

Clinical abnormalities associated with trace elements:

Young ewes receive their second (booster) Enzootic abortion vaccination.

Start with flush feeding in adult ewes and give special attention to energy and protein levels.

Supply bypass protein from one week prior to mating until mating if practically possible, as the nutrition of the follicle differs from the nutritional requirements of the developing embryo.

Grazing of improved pasture for at least 3 weeks at some stage during the 6 week period leading up to ovulation, has a marked effect on ovulation rate.

Make sure ewes are on a rising plane of nutrition. Weigh and Condition score. [See addendum 1]

The latest information indicates that only ewes in a poorer condition react on flush feeding. Ewes can be classed into groups according to their condition and only those that need to be fed can receive additional food.(11) Be careful in your judgment, because a small saving in feed cost can lead to big drop in conception.

Ask yourself the question: “Did I do everything possible to make sure that most of the ewes get pregnant?”

Treat preventatively!

Make sure your rams are fit and breeding sound. Re - test any doubtful rams or rams that fell ill since the last test.

Vaccinate ewes against Enzootic abortion.

iv) Teasers:

Put teasers in for nine days.

The most fertile ewes start cycling from the 10th day onwards.

Use 2% teasers – it is claimed that indigenous breeds like the Ronderib Afrikaner or Pedi sheep give better results.
Introduce teasers in the morning of the first day and remove them in the late afternoon of day nine (9).

When doing AI, use teasers with a harness with marking ink (or rub ocre powder mixed with milking ointment on the teasers brisket) to mark the ewes that are on heat.

v) Mating period (Rams In and Rams Out):
With natural mating rams must also preferably be introduced, in the late afternoon.

All other physiologically important times are determined by these two dates.

An ewe cycles every 17 days. If the mating period is 34 days, each ewe gets 2 full chances to get pregnant. If you are not using teasers we recommend a longer mating period (42 days / 6 weeks).

vi) Mid Pregnancy: (Middle Trimester)
Days 50 – 100 of pregnancy.

This is a critical developmental stage of the placenta, that has a direct influence on the birth weight of the lamb (lamb survival rate), percentage abortions, as well as the milk production of the ewe.

Nutrition is very important - ewes must increase in weight slightly, and not remain at the same weight or loose little weight as was believed in the past.

This is especially important in twin bearing ewes.

Use your scale!

Unnecessary stress like chasing ewes over long distances, unnecessary handling at scanning, or certain diseases like Corynebacteriosis, can cause abortions.

vii) Sonar scanning:
This is one of the most cost efficient management tools.

With modern scanning machines, pregnancy can be determined as early as 13 days - good accuracy from 20 days onwards. Because implantation of the embryo is only complete after day 35, we do not recommend unnecessary handling before this time.

Handle ewes carefully - stress causes abortions!

Many operators use the standing method of scanning using a scanning crate. Ewes can be scanned in different methods: Standing or sitting, rectally or in loin, in the kraal or in the shed.

Modern machines can work from A/C as well as D/C power. The ideal is to work in a shed with 220 volt electricity.

Scan for twins / multiples.

Divide ewes according to the amount of fetuses they carry,
and manage your multiple lambing groups separately for better lamb survival as well as better re-conception.

viii) Pre-lambing.

Six weeks before lambing, 72% of the lambs growth and development takes place in this period. The lamb gains in weight from roughly 500-700g to 3,5 kg at birth.

In wool sheep this is also the time of primary wool follicle development. At 100 days the lamb is still pink (hairless), but is born with a fully developed hair/wool coat.

The udder also develops now, which has an influence on the quality and quantity of colostrum, as well as the amount of milk the ewe will produce.

There is also an increase in the amount of eggs female internal parasites lay - the so called “Peri Parturient Resistance Relaxation” (PPRR) where there is an increased egg production by the female internal parasites.

So the ewes must be dosed against internal parasites.

We prefer a remedy with a longer after-action, which also includes nasal worm.

(Valbantel (G732/Act36/1947), Dectomax (Reg no G1726 of Act 36) or Ranox (G1599Act36/1947)]

Vaccinate ewes with Glanvac 3 (Reg. no. G2347/Act 36/1947) against Corynebacterium (one of the causes of Blue udder), as well as against Pulpy kidney and Tetanus.

Vit. A and trace elements should also be given at this stage according to local deficiencies.

Trace element supplementation remains a controversial point.

Determine which deficiencies you have and how bad they are.

It is hard to believe that a single remedy like Embermin TE or Multimin can work for all sheep in South Africa at the same dose, in all seasons and on all farms.

Trace element determination can be done through a blood test, which gives an indication of what happened in the body during the previous week, or a liver test can be done which gives an indication of what happened during the previous month.

Determining the status of trace elements on your farm, is a good starting point in a supplementation strategy.

Copper shortages are found only in certain places in South Africa. Supplementation in other areas, like the Karoo, can cause death in sheep as result of copper poisoning.

Nutrition is very important during the last six weeks of pregnancy.

It is important to balance the ration and give special attention to the higher protein and energy needs during this time.

As the rumen space is less because of the uterus increasing in size, special attention should be given to quality of the ration.

The calcium and phosphorus ratio should be balanced.

Metabolic diseases commonly encountered during this stage, are Milk Fever and Pregnancy toxaemia.

The role of the liver in reproduction is well illustrated in the following diagram:

There is also an increase in the amount of eggs female internal parasites lay - the so called “Peri Parturient Resistance Relaxation” (PPRR) where there is an increased egg production by the female internal parasites.

ix) Peri – partum and Lambing time:

146 days from rams in. We are working with nature and ewes can start lambing a day or two earlier.
A separate article has been written about the causes of, and investigation of lamb mortalities.

In another article we look at mothering instinct and what happens at lambing time.

- It is important to understand how the uterus and ovaries function, in order to give the right nutrition and to do the right management procedures at the right times. I often say that you are not farming with ewes, but rather with a uterus and ovaries.

- Involution – That is the shrinking and recovery process of the uterus after the birth of the lamb or lambs.
  - The uterus shrinks from an organ weighing 1.5 - 2 kg to its “normal” weight of 100 - 200g in roughly one month
  - Histological “cure” is normally complete by 45 days in cattle. The process takes 30-35 days in sheep.
  - Bacteriological “cure” takes slightly longer, and is normally complete by day 50 in cattle. In sheep it seems to be slightly sooner at 35-40 days.
  - Lactation has a marked effect on involution. It takes 35 days in non-lactating ewes, but up to 60 days in lactating ewes to complete. (Gordon, 1983)
  - Hunter (8) states that condition score at lambing, influences the conception rate two months later at mating.
  - The uterus of a twinbearing ewe also takes longer to recover compared to that of a singleton
  - Delayed involution is often caused by uterine infections

Let us look at the ovaries:

- Robinson and Orskov (8) say that good nutrition prior to mating, leading to a condition score of 3 at joining, causes ewes to cycling well

- Various researchers showed that the presence of the lamb, rather than lactation, was the cause of “post lambing anoestrus”, as ewes whose lambs died, and dairy ewes whose lambs were taken from them, showed oestrus soon after lamb removal – anything from one to three weeks post lambing. (Cognie et al, 1981., Melkskape – Mills, 1981 en Tempest, 1985)

- The uterus of a twinbearing ewe also takes longer to recover compared to that of a singleton
- Delayed involution is often caused by uterine infections

![An involuting uterus](image1)

![“Normal” uterus](image2)

- Histological “cure” is normally complete by 45 days in cattle. The process takes 30-35 days in sheep.
- Bacteriological “cure” takes slightly longer, and is normally complete by day 50 in cattle. In sheep it seems to be slightly sooner at 35-40 days.
- Lactation has a marked effect on involution. It takes 35 days in non-lactating ewes, but up to 60 days in lactating ewes to complete. (Gordon, 1983)
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- The uterus of a twinbearing ewe also takes longer to recover compared to that of a singleton
- Delayed involution is often caused by uterine infections

![Ovary 7 days post lambing – No activity](image3)

Normal cycling ovary (2 Follicles and a corpus luteum)

Milk production:
How does a black headed sheep eating green grass make white milk?

x) The First Month Post Lambing:
A lamb comes into this hard and cruel world immunocompromized.

The stress hormone, cortisol, which precipitates the birth process is unfortunately also immunospressive (As the space in the uterus decreases as result of the sudden increase in size of the lamb or lambs, they stress and secrete cortisol, which in turn also supresses the immune system)

This stressed lamb is absolutely dependant on the mothers colostrum for protection against the diseases of importance to it within the first weeks of its life.

A lamb can only absorb the antibodies supplied by the colostrum in the first 12 hours after birth.
So the key words are:
- Good quality colostrum
- Enough
- Soon after birth

The lamb starts nibbling on grass and creep feed between the second and third weeks of its life. The ewes actually teach their lambs to feed.

This is also the time that they start taking in internal parasite larvae.

**Worm larvae in a dewdrop on grass**

So under certain circumstances lambs should get their first dosing, Vit. A and trace element supplementation as early as at one months age.

Dose against round-, as well as tape worm. (Valbazen/Valbantel)

One can also start to vaccinate at this stage against Mannheimia (Pasteurella) and against the Clostridial diseases. (OneShot Ultra (Reg. no.G2804 Act 36/1947) plus Glanvac 3 (Reg. no. G2347/Act 36 of 1947), or UltraChoice 7 (Reg. no. G2818 Act 36/ 1947) plus Glanvac 3 (G2347/Act 36/1947)

Do the “wet and dry” (ewes without lambs) technique on the ewes to determine which are still nursing lambs, which ewes lost their lambs and which did not lamb at all.

A lamb with a good start weighs about 10kg at one months age. It thus more than doubles its birth weight (3.5kg) in the first month of its life. This leads to additional stress and also reemphasises the importance of the colostrum and then the early vaccination and deworming.

It is also the time in which it changes from a monogastric (single stomach – the abomasum or milk stomach) animal into a ruminant with 4 stomachs.

**Ruminanttherkouer**

Good quality roupheage and good management help this process to take place “smoothly” and gives the lamb a good start in life. It is also the time when the “vital organs” grow and develop further (Lungs, heart, liver, spleen, kidneys and the reproductive organs – the uterus and ovaries in the female and the testes in the male)

A good start actually determines the animals lifetime production!

**xi) Two Months and Three Months after Lambing:**

These are the follow-up times for management procedures.

Give lambs Vit.A as well as Trace elements.

Deworm (Valbantel, Dectomax or Valbazen) and give the booster vaccinations.

**xii) Weaning:**

Another physiologically very stressfull time in a lambs life – it is taken away from the group/family in which it was comfortable.deprived of its mothers milk on which it has been so dependant up to this stage. Often out of a camp that they knew – where the water is, the best place to sleep, where danger looms (e.g. jackals), into new and unknown surroundings.

For this reason we recommend that you rather move the whole flock to the weaning camp and then to rather remove the ewes from the lambs, than vice versa. It is also a good practice to leave a few old ewes with the lambs to act as teachers and guardians.

**On most farms this is done ± 100 days after the end of lambing.**

The oldest lambs are thus ± 4½ months old and youngest ones 3½ months. Weight is a better indication of time to wean, than age - Wean ewe lambs at ±20kg and ram lambs at ±25kg.

If lambs have been tought to eat supplementary feed, they will also adapt to their new surroundings (like a feedlot) a lot better.

In multiple breeding systems we often recommend early weaning - wean lambs before ewes are remated.

Vaccinate replacement ewes (ewe lambs) against Enzootic abortion, and ram lambs against Brucella ovis. This is done at weaning.

Replacement ewes receive their booster against Enzootic abortion after classing to see which lambs will join the flock, has taken place.

Regular deworming according recommendations by the local vet, who knows the area, are advised.

Maidens (ewe lambs) that do not lose weight before first mating, outperform maidens that have for the rest of their
productive lives. So the best way to increase the productivity of a flock is by looking after the youngstock.

Give them the “ideal start!”

Please discuss this program with your local veterinarian and/or Pfizer Sales Representative, especially where more than one product is mentioned.

**Disclaimer:** Please note that these are guidelines based on scientific principles, but that despite this, Pfizer Animal Health does not accept any responsibility for claims that might arise from these recommendations.

“A commitment to excellence is a commitment to the process of becoming the best” (Anon)

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Mating methods (Information by Dr Jasper Coetzee)

(1) Group mating
One Ram with group of ewes (normally 20-25 ewes per ram)
1. Record keeping accurate
2. Progress good (do corrective mating)

(2) Mass mating
1. More for commercial use (3-4% rams)
2. Record keeping difficult (colour markers on rams)
3. Progress slower
4. Corrective mating on selection of animals difficult
5. Record keeping not accurate
6. Use better rams on better ewes (faster progress)

(3) Individual mating... classified under the following 3 headings...

(A) Hand mating (control over the process)
1. Time consuming
2. Teaser rams necessary
3. Synchronizing of ewes
4. Progress very good (different rams can be used)

(B) Artificial insemination
1. Corrective mating possible
2. Specialised effort
3. More expensive (sponges, “pms”, time & organisation)
4. Record keeping accurate
5. Faster progress

(C) Laparoscopic insemination
1. Highly skilled performance
2. More expensive
3. Conception (depends on external factors like fresh semen, frozen semen quality, process etc.)
4. Record keeping easy & accurate
5. Bring back saved genes of rams through frozen semen
6. Be careful for too long time span in saved semen because of progress in breeding stock

Breeding methods and genetic facts

• Inbreeding method.
  1. Father to daughter, brother to sister, half brother to half sister, cousins etc.
  2. Careful selection required (beware of recessive [hidden] genes)

• Advantages:
  1. Uniformity improvement... type conformation etc.

• Disadvantages:
  1. Caution on faults as it can be hidden in the offspring. Performance, vitality and fertility can be lost. (recessive genes)

• Line breeding method.
  1. Related animals, 4% maximum family related.

• Advantages:
  1. More safe than inbreeding because not so directly related...outstanding characteristics will be retained

• Disadvantages:
  1. Injudicious line breeding without record keeping and careful selection will have the same negative effects as inbreeding

• Out Crossing method:
  1. This is not cross breeding (different breeds) but... different bloodlines in the same breed

• Advantages:
  1. Better growth...hybrid vigor...better milk production, hardiness improves.

• Disadvantages:
  1. Different genes...slower progress
  2. Record keeping essential to speed-up progress

• Note: In all cases... Selection is important

B. Selection

Selection remains the method for the fastest progress in a flock but breeders must realise that selection cannot establish new genes. What actually takes place with selection is an increase in tempo of the best and most desirable genes in a flock and a reduction in tempo of the undesirable genes. The more characteristics selected, the slower the progress can be. It is thus important to only select for the most important economical characteristics in the beginning.

The following selection methods may be used:

B.1 Culls are rejected
Faults in sex organs, legs and mouth are serious faults. Should there be any other serious conformation faults an animal should also be culled.

B.2 Select for outstanding animals
If an outstanding animal can be selected with exceptional breeding qualities a breeder can progress rapidly with his breeding. Performance testing is essential to identify animals that perform above average. An outstanding animal must comply with the following requirements:

• Phenotypic selection (with the eye)
• Genotypical selection (family) through record keeping
• Selection by means of performance testing (performance figures)
• Breeding value (progeny performance)

B.3 Selection on indexes
Comparative performance tested figures of animals is an excellent selection method. Weaker animals or economically poor performers are eliminated. This method will also bring about the most rapid genetic improvement due to certain genetic characteristics being rather strongly hereditary. Remember that a high index animal can have faults and should be eliminated. Programs and computers can’t see!

B.4 Individual selection
Each individual sheep appears before the breeder. The appearance of the animal and his performance serves as a selection measure.

Geneticists strongly recommend individual selection. An advanced breeder will know that a phenotypic
excellent animal will also have a good genotypic background and he will be able to select animals with genotypic superiority above the average of the group. These animals should also be strongly advanced on genotypic level.

The ideal would be that studs should only use rams that have been selected as follows:

- Born in the first half of the lambing season (fertility)
- Born from an ewe with good milk production and mothering abilities
- Born from a fertile ewe who lambs regularly
- Have a weaning index of above 105
- Is one of a twin or triplet
- Have good breeding characteristics
- Have a good conformation
- Have no visible faults

In conclusion the following four points should be kept in mind when selecting:

1. Selection is necessary for progress together with the correct breeding method
2. Selection is a certain method for rapid progress
3. Select animals with breeding excellence
4. The merits of a sire can be best determined by progeny testing

C. Genetic facts

When a breeder realises that certain characteristics are not highly hereditary (e.g. conformation) he often becomes despondent. This is however a wrong attitude as the emphasis should not be too much on characteristics which are difficult to determine and not highly hereditary (like type and conformation low). Emphasis should also be on reproductive and economical characteristics that are genetically more hereditary. This fact should encourage breeders to follow progressive breeding methods.

It is difficult to scientifically ensure that certain characteristics have a precise percentage point that indicates its hereditability, as there is a vast difference in environmental factors, feeding, management etc. We would like to indicate the possible hereditity characteristics that can be used as important genetically facts in a breeder's selection method for progress.

Through research (Dr. Cambell, Prof. Penny, Lassey) and practical experience the performance heredity characteristics can be summarised as follows. (L=<33, M=33-66, H=>66%)

1. Number of lambs born from an ewe (fertility) Low (breeders should continuously select for twins, first born and ewe's lambing regularly.)
   - Birth weight Med
   - Weaning weight Med
   - After wean weight (feeding external factors?) High
   - Year old weight (external factors?) Med
2. Conformation and type (concentrate on this for progress) Low
   - Carcass fat Med
   - Covering Med
   - Colour High

Note: The most economical aspects is the hardest to match

In accordance with the above table it is clear that one should select for a characteristic trait such as weaning weight. It means that the ewe that produces weak, light, pot-bellied lambs after her second lambing should be culled. This is the one single characteristic where strict selection must be done.

The problem is that the characteristic with the greatest economical value, namely fertility or reproduction, is not highly hereditary. With continued efforts to obtain multiple births and lambing achievements, fertility can be effectively increased. It takes time but must always receive top priority.

Now we can also understand that the improvement of conformation and type is a long term goal that is a great challenge to the perseverance of the breeder. Beginner farmers must practice great patience and not become despondent.

We as breeders will have to reconsider the requirements of the commercial ram buyers. Secondly look at the breed standards of the Dorper Sheep Breeders’ Society with renewed awareness in order to strive to achieve a united goal in the breeding of the best Dorper sheep. Breeding is a science, a challenge and lots of hard work. Results are not easily achieved but certain results are more achievable than others thus bringing about pleasure to the breeding of Dorper sheep.

Breeding remains an art in the hand of the master farmer.

Lamb time

As we approach lambing time we assume that the animals are healthy, dosed, with no ticks and within a new clean camp. Why a clean camp, clean animals etc.? Because you are going to deal with the product you have worked and waited for the last 5 months and we don’t want to see our profit go down the drain because of negligence. The lambs will meet the real world and it is vitally important to give them a good start. We don’t want to be forced to dose the lambs as early as 4 weeks of age because of unhealthy conditions.

Conditions can be changed by human intervention, while other factors can’t, so the farmer must ensure good conditions. Worms transmitted through their mother’s teats can infect lambs. This happens when she lies down, and her teats are exposed to droppings, grass and ground which contains worm larvae. This in turn sticks to the teats and the lamb sucks them off.
This lamb, was a 6-week-old lamb in a project that was done to establish just that. The mother and lamb were kept in a pen on clean straw, changed every week, but without cleaning (dosing) the mother. The lamb was only subjected to his mother’s milk. The mother looks healthy but the lump under the lower jaw is an indication that it is infected with wireworm.

Wireworm lives on the red blood cells and what you see is fluid or white blood cells. If not treated quickly, the result will be death. Another reason for getting everything ready before lambing is not to interfere and disturb ewes during their lambing process. The size of the area is also important. If you watch closely, you will see that the ewe which is ready to lamb will distance herself from the others. This is a good mothering quality and will help eliminate bottled lambs. It is also vitally important that the lamb must get colostrum as soon as possible. When there are a lot of animals crowded together, the lamb will search for his mother, and if she is not found within a reasonable time, he will lose the will to drink. Don’t let your mistakes and mismanagement cause you more work. Bottled lambs can be tiresome and most of the time lack performance compared to other lambs.

It is also important that the ewes should be on good grazing the last 5-6 weeks of gestation. This helps to give strong vigorous lambs at birth. If available, green pastures will increase milk production and improve colostrum. The Vitamin A in green pastures is essential for making lambing easier and helping to bring down the afterbirth. Some people will say that feeding ewes too well during the last month of gestation may produce lambing problems because of lambs being too big. This is true and correct selection on ewes will help to reduce difficult lambing. The birth channel is influenced by the shape of the hind-quarters. The hipbone, legbone and pelvic bone position is important. i.e. Sickle hock walking can be an indication of misplacement of these bones.

Docking tails

The next step is to dock the tails and identify the lambs. If you dock it, do it as early as possible. The older the lamb gets before you dock the tail using a castrating ring, the greater the pain and the larger the setback in his development becomes. The problem when using a castrating ring is that if you put it on at one week of age (which is ideal) then you interfere with other ewes in gestation in the group, which we said is not good. What can be done is to separate those ewes with bigger lambs from ewes with smaller lambs in a camp. Get the bigger ones on one side and only work with them. When you lamb 100-200 ewes in one camp, separate them 2 to 3 times during a lambing cycle of plus minus 6 weeks. It is also easier to do identification (ear-marking) this way. When docking the tails, it is important to do it at the right place, see illustration below and also in the training galleries.

Don’t spoil your animal’s appearance with a too long or too short tail. There are different ways to determine the exact place. My favourite method is to place the lamb’s head between my legs. As my line of sight, when looking down, is in line with the hindquarter of the lamb, I take the tail of the lamb, stretch it out, slip the ring over and put it in line with the rear part of the lamb’s thigh. If you can feel the joints in the tail, you will notice that the ring will be between the second and third joint. If you have the time, and you are afraid of infection in the tail, you can cut the tail on the castrating ring on the 6th day with a guillotine type of prune sheerer, and spray it with a disinfectant. Higene is most important when docking tails as germs can enter through the wound and penetrate the spinal cord causing inflammation.

This can penetrate as far as the brain or cause a growth through the spine and cause a cyst on the back as illustrated in the picture. Take special care when the tails are thick or during hot summer days. The other method is to use hot gas forceps. This works very well and can be used on older lambs. Some farmers just leave the tails undocked. This is acceptable if they are only in the slaughter lamb market, but please dock the tails of replacement ewes: ±25% of your breeding ewes every year. Remember that in very harsh dry times the teeth of the animals do wear down faster and you may have to replace more ewes than expected. Be proud of your flock. It is true that you care better for them when your eye is pleased. “The eye of the master fattens the flock.”
Marking or identification

The next step is to identify the lambs. Besides marking them for ownership in case of theft, it is vitally important to mark each lamb with an ID number for record keeping purposes. The reason for this is to follow genetic trends, which we cannot see. We can select on phenotype, but how will we know if this was a constant trend or a freak if we don’t keep records? Only record keeping and performance testing can give an indication of genotype. The correct way to mark is an ID tag in the ear with information on it. The information required for this will be discussed under record keeping. The number will identify birth date, single, twins or more, ram or ewe, mother’s and father’s ID. However, on the ear tag itself, you only have to write the year and a number. The first lamb born in a specific year will be entered as 0001. Thus, the first lamb born in 2000 will be 2000.1, or if you prefer 0.1 as sheep normally do not get older than 10 years. Just a reminder about record keeping on computers one needs to have a four-digit date for Year 2000 compliance! It is very important to take down all details in your pen (kraal) notebook, or on your handheld computer.

It aids with performance testing and studbook, and we recommend the following basic data as shown in the table:

<table>
<thead>
<tr>
<th>Lam #</th>
<th>Birth Date</th>
<th>Sex</th>
<th>Status</th>
<th>Ewe #</th>
<th>Ram #</th>
<th>Date Weaned</th>
<th>Wean Weight</th>
<th>Notes</th>
</tr>
</thead>
</table>

Creep feeding

This option can change from farm to farm. If you have the ideal farm with good nutritional value on pastures, creepfeeding may not be necessary. However, if you need to supplement your natural grazing, there is nothing wrong with creep feeding to obtain a better growth in lambs when conditions are not ideal. Make sure that you have the facts right, and see if it is viable to spend the extra money. Also see the section on nutritional requirements. In Dorper breeding, we believe in turnover, maximum weight (mass) at minimum age. The quicker the slaughter lambs reach the correct weight, and are off your hands, the greater your profit. Remember, the more sheep on your farm, (nonbreeding material) the harder the management, the more dosing, the higher the risk of theft, predators, higher mortality rate etc. Money in the bank would be safer! If you do decide to creep feed, it is important to give the most economical balanced ration mixture possible for maximum growth. Many people have requested a formula for a balanced mixture for creep feeding. Owing to differences in nutritional values coupled with very specific feeds in different areas all over the world, you would do well to consult your local nutrition specialists in this regard. It can be very dangerous to use a generic mixture if you do not have the exact same type of ingredients available in your area!

If you are a ram breeder, this will also help to see the best performance at an early stage. If you use a creep feed system, the space where the lambs must crawl through, varies according to breed. I found that 180-190mm open space between bars is a good size to keep ewes out and allow lambs up to 3 months to creep. For this purpose 18mm pipe works well. This can be welded to a frame. If you make a cage that can be transported or that has wheels, it can be practical to move from camp to camp. A self-feeder that takes four bags of milled mix for this purpose has been designed, see photo in the training gallery. This feeder is round and can take up to 18 mature ewes and is weatherproof. As the animals are moving and eating, they move the bottom part to let the food seep through. Depending on the number of lambs, you can increase your creep feed area with more self-feeders, as you may need. Use this feeder at the water-resting place to supplement your natural grazing for the lambs! This will reduce the draining on the ewes especially during the bad times of the year.

The ewes will maintain better condition and conceive easier. It is important that we try to keep everything as natural as possible. Do not feed your animals in such a way that you lose adaptability in the process. I want to stress a fact that is not even debatable: If you are a ram breeder, do not feed rams without evaluating them under natural conditions. Let nature help you select for hardiness, adaptability, and growth rate. Take note of the strategy under selection of the 3-month, 6-month, and 9-month selection. When you sell rams, your customers will be disappointed in the quality of your stock if they cannot perform well under different conditions. This happens if you have fed them merely to please the eye, and this is not ethical.

Working facilities

Good working facilities is one of the most important aspects of farming. It must be a pleasure to work with your animals. You can save a lot on labour time if your facilities meet the criteria. If you are working through a race and it is quite long, put a stopper in the middle to prevent sheep from reversing and cramping the rear ones. Never mix small lambs and sheep in a race for this reason. A farmer without a scale can just as well give up. Plan your race to accomodate the scale at the end for easy weighing, and have different pens to do your classing. Invest in a neck clamp (see diagram on page 80) which is very handy when you want to do grooming or any work on the sheep i.e. cutting horns, opening abscesses, shearing, clipping hooves which must be done regularly under intensive conditions. There are many ways of doing this, but just make it practical and easy for yourself. Do not make your race too wide (max 400mm) as animals will turn around and frustrate you. Rather fewer and an easy loading and handling system.

Weighing and marketing

Mass is money and good performance in weight for a certain age is the ideal. When the weaning weight at ± 90 days is fed into a computer program it can provide valuable information to improve selection. For instance, one should be able to see if creep feeding was worth the cost or not. Furthermore you will see from accurate data over a period, which section of your farm performs best. You can market the lambs that are ready and you can do better business by knowing the exact status of your lambs, ewes etc. In addition, you must be able to grade your lambs on the hoof if you are in the slaughter
lamb market. Weigh all your lambs. Take out the lambs that meet the criteria for slaughtering. Grade them according to the most economic grades for slaughtering. The following sketches and information are vital to earn maximum return on slaughter lambs.

**Body Condition Scoring of Sheep**

*By DR. TERRY BOUNDY, M.R.C.V.S.; Kilaganoon, Montgomery; Powys, U.K.*

We all have our own ways of assessing the condition of our sheep at a particular point in time. We refer to them as doing well, doing badly, thin, over fat, in good order, and in store condition etc.

It is necessary to have a recognised scale to work on because at certain times it is essential for ewes and rams to be in first class condition, not over fat, and certainly not thin. Our income is determined by our lamb crop, and unless we recognise the need for the ewe and ram to be in a certain condition of fatness and weight when mating, we will find our lamb crop way below the number we expected.

In an attempt to standardize levels of condition in sheep, Jefferies writing in the Tasmania Journal of Agriculture (1961), described a simple system of scoring body condition by feeling fat cover, muscle and spine in the loin area, above and behind the last rib. This system is still valuable today.

While the sheep is standing at a level and “relaxed” position the fingers (held together) and thumb are used to assess the spine, the eye of the loin muscle and the transverse processes. (Figure 1) After feeling these areas behind and above the last rib the sheep is assigned a condition score:

**Condition 0:** (no sketch). Sheep is extremely thin and probably on the point of death. No muscular or fatty tissue can be felt between the skin and bone. (see sketches next page)

**Condition 1:** Spine sharp and prominent. Eye muscles are shallow, with no fat cover. The transverse processes are sharp, and the fingers pass under the ends. It is possible to feel between each process.

**Condition 2:** Spine sharp and prominent. Transverse processes are smooth, and slightly rounded. It is possible to pass the fingers under the ends of the transverse processes with a little pressure. Eye muscles have a little fat cover, but are full.

**Condition 3:** Spine can be felt as smooth and rounded. Transverse processes smooth and well covered, and firm pressure is required to feel over the ends. Eye muscles are full with some fat cover.

**Condition 4:** Spine can just be detected with pressure as a hard line. The ends of the transverse processes cannot be detected. Eye muscles are full with a thick fat cover.

**Condition 5:** Spine cannot be detected. There is a depression between the layers of fat in the position where the spine would normally be felt. The transverse processes cannot be detected. The eye muscles are very full, with very thick fat cover.

When they are slaughtered, you will receive results. Compare the results to your own grading you have done on the hoof. It is vitally important to send the bad ones with correct grade to the abattoirs and keep the best for breeding. Keep your cash flow sound, and the better ones will show their worth, as there is always a demand for breeding material. This very important factor will be dealt with under the section of Selection. In today’s competitive marketplace, there will soon be no place for non-scientific methods of marketing. Just like natural selection kills the weak, so will lack of return on investment get rid of people not willing to apply their minds to the slaughter lamb business? There is a 30% difference between the best and worst grades, on either a too lean or too fat lamb - be money conscious. Be smart and take note of the sketches left and the next page to determine fat covering for the ideal grade on the hook.
**CONDITION 1**
Spine prominent and sharp
- No fat cover
- Transverse process sharp
- Fingers easily pass under

**CONDITION 2**
Spine prominent and smooth
- Thin fat cover
- Muscles medium depth
- Transverse process rounded
- Fingers go under with pressure

**CONDITION 3**
Spine smooth rounded
- Moderate fat cover
- Muscles full
- Transverse process smooth rounded
- Fingers need hard pressure to find ends

**CONDITION 4**
Spine only detected as a line
- Fat cover thick
- Muscles full
- Transverse process cannot be felt

**CONDITION 5**
Spine not detectable fat dimple over spine
- Fat cover dense
- Muscles very full
- Transverse process not detectable
Dorpers

“We, the eye of the master fattens the flock.” What a very true saying this is! Know your flock, detect early deterioration, know if there are ticks, and dose and dip in time. Do not dose if it is not necessary, as it is too expensive. Have an eye count done on the droppings and know what to use - don't guess.

See the following guidelines by Virbac® and consult your veterinarian for suggestions specific to your area.

**Internal Parasites by Virbac®**

Parasites affecting animals are divided into three major groups, namely protozoa, external and internal parasites. We will be focusing on internal parasites, commonly known as worms.

Internal parasites again can be sub-divided into three major groups, these being roundworms, tapeworms and flukes. They are divided in this way, due to their various life cycles.

The first group, roundworms, have a direct life cycle, which means that they don’t need an intermediate host to complete the cycle. Adult female parasites occur in the gastrointestinal tract of the host animal where they reproduce sexually or asexually, and lay eggs that are passed out in the faeces onto the pastures. Temperature, light and moisture are important factors that influence the hatching of the eggs.

Larval stages emerging from the eggs constitute almost 97% of the total worm population at any given time. Three larval stages occur before the infectious stage is reached. The host, together with the grazing or herbage, ingests the infective larvae.

Another two larval stages occur before the worm is sexually mature. It is important to note that even the immature stages of the worms have a deleterious effect on the host and that makes it difficult to diagnose the infection. Diagnosis of roundworms in the live animal is performed by faecal egg counts.

The two most important roundworm species of importance are wireworm, which is a vicious blood suckerer, and brown stomach worm, which causes severe diarrhea. Symptoms of roundworm infection will vary according to the roundworm species involved, and may include bottle jaw, diarrhea and urchinitis. In cases of severe infection, an animal can die before any symptoms are detected.

Tapeworms require an intermediate host to complete their life cycle. The adult tapeworms are found in the small intestine of the host. Ripe segments are released from the worm and are excreted together with the faeces of the host animal. These segments are basically bags, filled with thousands of eggs.

Different tapeworms require different intermediate hosts. All the important species affecting sheep, goats and cattle require grass mites. The mites ingest the eggs while feeding. Then the larval stages of the worm develop inside the mite. The mite is ingested, together with the grazing, by the host and the tapeworm attaches itself to the wall of the small intestine to complete its life-cycle.

Tapeworms don’t cause a lot of physical damage to the host animal, but absorb the nutrients that the animal needs for its own growth. Diagnosis of infection in live animals can be difficult and sometimes a post mortem is needed. Symptoms of severe infections may include pot-belly and retarded growth. Total obstruction of the small intestine by heavy worm infestations may result in the rapid onset of death.

Flukes, as with tapeworms, require an intermediate host to complete the life cycle. In this case, it takes the form of a freshwater snail. In effect, this disease is usually associated with freshwater sources like pans or marshes and occurs mostly in autumn and winter when animals are forced to graze the greener edges of the marshes, due to lack of other pastures. The two most important species are liver fluke and conical fluke.

Liver flukes, as the name suggests, are to be found in the bile ducts of the liver. The eggs are passed into the bile and then excreted with the faeces. Immature stages infect the snails where further development takes place. The parasites escape from the snails and encyst on the herbage to form the infective stage, which is taken in by the host.

Conical fluke inhabits the rumen of sheep, goats and cattle and has a similar life cycle to that of liver fluke. The adult parasites does not cause any indisposition to the host, but the immature stages destroy the mucous membranes of the small intestine, which results in severe diarrhea, often seen as projectile diarrhea. Diagnosis will depend on symptoms, the time of the year and the grazing history of the marsh areas involved.

Parasite eggs can also be detected by means of faecal egg counts. But, in the case of conical fluke, where damage is caused by the immature stages, this will be of no use; all the parasites mentioned could be limited by effective management and the use of anthelmintics, which are worm remedies. Anthelmintic or worm-resistance can be defined as a worm population or a worm strain, which becomes immune to the effect of the worm remedies or anthelmintics. This means that such remedies no longer achieve the claims for which they are registered.

It is important to note that there is nothing faulty about the remedies themselves, but that certain resistant worm strains render them less effective. No worm remedy can therefore be rejected, as resistance varies from region to region and from farm to farm. How then does resistance develop? Resistance develops as a result of the frequent use of the remedies in small stock, mostly at times when they are not really necessary. Another cause of resistance developing on a farm is the under dosing of animals to save on costs.

Initially, resistance develops very slowly but then increases rapidly to a climax. The bad news about it is that once resistance to a specific anthelmintic group has developed, it is permanent and irreversible. Research has shown that even a withdrawal period of seven years of an anthelmintic group to which severe resistance had developed, did not help, because the original level of resistance was reached only after three treatments.

As regards the current situation in South Africa, Virbac and Onderstepoort Veterinary Institute conducted the first survey here in 1992 and 1993. It indicated that there was resistance to all four registered anthelmintic groups. Unfortunately, the survey was statistically invalid because of difficulties in obtaining a balanced farm selection. The
second survey conducted by the Onderstepoort Veterinary Institute, which was done in 1995 and 1996 shows that there was a 100% increase in resistance, compared to the previous survey. Wire worm infection can also be detected by means of the Farmacha eye colour detection system. See chart on page 30.

How can the farmer determine the level of anthelmintic resistance? This is done by means of a faecal egg count reduction test. This test is done in co-operation with your Vet or regional veterinary laboratory. It consists of two stages.

During the first stage, animals are weighed and randomly divided into five different groups. Fifteen animals per group are needed for the four different groups as well as an untreated control group. The animals are also marked in order to identify them correctly during the second stage of the test. Animals are dosed individually and strictly according to mass. Faecal samples are collected from each animal for faecal worm egg counts.

The second stage of this test takes place approximately a week after the first. During the second stage, another set of faecal samples are taken for faecal worm egg counts. Marks are then removed from the animals and the test on the farm is then complete.

In the laboratory, the veterinarian will then compare the two sets of faecal worm egg counts from the first and second stages and will use a formula to determine the level of resistance to the various anthelmintic groups. It is important to note that no professional person can correctly advise a farmer about a dosing program without first performing the vital test.

Lastly, some helpful hints for successful worm control, Dose according to weight of the heaviest animal. Do not estimate the weight of an animal, always use a scale. Don’t underdose in order to save money. Always read and follow the instructions on the label. Check your apparatus frequently for accuracy and dose all animals, don’t skip any. Anthelmintic or worm resistance poses a serious threat to livestock farming in South Africa, but by implementing a few basic rules it is possible to combat this problem. Always seek professional advice for the control of internal parasites. (Information supplied by Virbac®)

The same applies to dipping. It is both labour intensive and expensive, so dip at the correct time in your area. Ticks can kill sheep in certain areas if you neglect to do this. Anthelmintic or worm resistance poses a serious threat to livestock farming in South Africa, but by implementing a few basic rules it is possible to combat this problem. Always seek professional advice for the control of internal parasites. (Information supplied by Virbac®)

Marking or identification of lambs

A good method of sorting out which lambs belong to which ewes are described here. This can be a very stressful operation, as lambs don’t easily suckle when taken away from their natural situation into a pen (kraal.) What you do is to get two sets of numbers say from 0-100 with an elastic strap tied to the ends of the number tag. Put the tag on the neck of the ewe, number facing so that you can see it, and from the other heap of numbers a tag in the same manner around the waist of the lamb with number on the back. By sitting high and putting the lambs back with their mothers after a hour or two wean period, you can just take note and write down which lamb number is suckling on which ewe number. When all the numbers on your list are filled in, you can then easily tag them permanently with the correct information to enter into your program.

Care and grooming

If you are a stud breeder, care and grooming is an important part of your selling and name building. It is a fact that any person buying a good ram or ewe at an auction or privately, will pay your price willingly when the eye is pleased. Do not let the buyer guess what the animal looks like or can look like, but show off your product, be proud of your product and do not hide faults. There is nothing more encouraging when going to a seller to see his breeding rams and selling rams and ewes in good condition and well groomed. This forms part of the love for the breed. It is expensive to employ people to trim your animals, but it is not necessary to do this, there are other alternatives. The easiest way to do this is to machine clean your animals 2 weeks before an auction, and you will see how desirable they look. Although the ideal covering Dorper will shed its fleece over a period, it is appealing to see your pride always groomed. It is a fact that the ram is half the flock and the ewe half the lamb.

Let your rams show the buyer what is going on in your flock. Do not overfeed your animals. The new owner wouldn’t be impressed if he buys an overfed ram and after 3 months nothing is left of the once beautiful ram or ewe. If you can also produce breedvalues from your record keeping program, it will enhance trust in your business.

Selection (third leg)

This is the most interesting and rewarding part of the KOS idea. If you haven’t got the knowledge and you can’t organise, well, you will see it very clearly in the selection stage. Remember that the knowledge part includes the knowledge on the Breed Standard of Excellence. You cannot select if you are not familiar with your Breed Standards. Now is the time to use all your pen (kraal) notes, record keeping, and performance testing information.

The first selection will be done at wean age. Weigh your lambs and you will see under the same conditions what part milk production and mothering qualities have played. Separate the ram lambs from the ewe lambs. Take the ewe lambs and select the best lambs. Group your lambs in three groups, possible stud, commercial use, and culls.
The culls you identify very clearly and accept that this is for the slaughter market no matter how beautiful they look. This is hard, because one small fault will make an otherwise beautiful animal totally useless for breeding.

Mark the other two groups in your notebook and make notes on what you see in front of you. Remember that you must keep back replacement ewes for future breeding. If you have had a good crop of possible stud ewe lambs, then you can replace your 25% and still have some breeding material for sale. There is always a demand for good breeding ewes and if you can afford it, keep a second best group of lambs for a further selection at 6 months. You will also see that there are sometimes big changes during the next selection period and you may find that some of your better-selected ewe lambs will deteriorate, while some from the inferior group will perform better. The reason for this is twofold: good mothering and milk production. The mother could have nurtured the lamb up to this stage and now, when the lamb goes on its own, it can’t perform. The other reason is that your ram/ewe combination (genes) was not ideal, and this may only be apparent at this stage.

This is why studbook and performance testing is important and you should be able to pick up these trends through this period. We are now selecting on the phenotypic method and not so much on the genotype. Make notes of what you see, as this is a practical way of genotyping. You will quickly learn how to select and later on you will easily throw out, not only the culls on your first selection, but also the inferior commercial types. Remember that animals go through different stages in their growth cycle. It is important to get this part under control, as you want money in your pocket and hungry mouths off your land. Make use of your Breeders’ Society inspectors to assist you and guide you through this important part. Remember femininity, shape, meat and type.

**Femininity**

Femininity is very important for production and reproduction. The sum-total of the different characteristics of the ewe, such as head, neck, shape, size of bone etc. will determine femininity. If you have a performance index system it will also guide you in genotype selection. These days programs are very smart in this respect and can assist you on your road to success.

**Ram-lamb selection**

As we have said before, the ram is half the flock. We are more strict on ram selection because of this fact. It is not easy to breed good rams. If the percentage rams that you keep back are low, do not be discouraged but keep back only the best and look after them well. Do the same with your ram-lamb as you have done with the ewe-lambs but with a more critical eye. Remember to select for your plan, as we are purely dependent on meat production. You must select for good meat qualities and minimum faults in this regard. Look for masculinity in rams, good shape, good size, good muscle, good type, and good walking ability. The Breed Standards will handle these qualities but it can’t be emphasised enough. Do not hesitate to buy rams if you can’t breed your own rams to improve your flock. It is not always easy to find the right ram/ewe gene combination, especially if you have bought material from different breeders. The easy way to overcome this is to focus on a breeder, who appeals to you. Let him walk the road and make the moves. You will be able to see if it is good or bad, and this will help you pay less “school fees.” Just remember that people will follow you for the same reason, so make sure you act honourably.

**6-month economical selection**

After the de-worming and inoculation at 3-months, the lambs are on their own and now you can assess adaptability, hardiness and growth on their own. Bring them in and weigh them again.

The scale doesn’t lie, and you will determine from your notes what is going on. You can establish another index and this will give you a balanced and clear idea of what trends are showing. You can use these figures in your selling data, which will be appreciated by the buyer. The only problem is when the wean- and birth dates of the lambs are not the same, or your lambing dates are not up to date and you are forced to use an average all the time, your results may not be accurate. Weigh your animals at 6 months and class them again as you did at 3 months. Compare your 3-month selection with your 6-month notes. Take notes of the changes and bring in your index (Growth factor). Now you can cull those not up to standard.

Be strict and keep the rest for sale after your next selection, which is at 9-months. Why 9-months you may ask? In the Dorper world, we only approve animals over 10-months of age and now is the time to prepare for that inspection and studding of animals. My policy is not to sell rams before this age.

Try not to mate ewe lambs before 10 months as this ewe must work for the next six years and she must shed her teeth at 12-14 months. It is also important to take into account the weight of the animal. Weight will vary from farm to farm and season to season and you will see from your own conditions what is best. A good guide line is 45-50kg for mating ewe lambs and take growth rate into consideration. Do not break these precious moneymakers by mating them too young. Remember that good rams are usually born out of good ewes, with family background mated to a good ram with background.

**9-month selection**

At this stage, you should only select what to keep for yourself and what to sell. Now select the ideal combination ram for the correct ewe to improve on your flock. Do not farm with inferior animals or animals with faults. It may be that the first generation will not show it, but later you may find all the faults coming back to you just at a time when you can ill afford it!

**Practice makes perfect**

There is nothing more rewarding, after working hard and eventually being able to reap the benefits. Since you can’t see genes, you must set yourself goals, select and plan for this. For instance if your weaning weight was 35kg then go for a higher weight. If your average stud out of your lamb crop was 10% go for 15%. If you only manage stud rams, or ewes, go for type 5 (the best) rams and ewes. Set yourself goals all the time, it can be very rewarding. Do not set your goals too far apart. Continuous improvement keeps one achieving, and then you do not lose your enthusiasm. We all want to be winners and being the manager of this factory you can only blame yourself if the KOS concept does not lead to success.
It is important to take good care of your precious lamb crop (Lambs 1-2 weeks old already tagged)

Embryo lambs getting extra feeding. Surrogate mothers sometimes lack in milk production. Lambs therefore get milk through a feeding system as seen below. Take note of the matured ewe to help lambs keeping abreast with mothers instinct.

A group of ewe lambs classed as future breeding material. Picture: Grossamer Down White Dorpers in Australia.
A rectal prolapse can be described as a physical protrusion of the rectum through the anal opening. This condition can vary in severity from a temporary and even reversible protrusion constituting a small part of the rectal mucosa (usually only observed when the animal is laying down) to a permanent or semi-permanent exposure of the entire rectum and in severe cases even part of the colon (large intestine). The latter is also associated with secondary damage to the exposed tissue, often followed by inflammation and tissue necrosis. As a result of the accompanying pain and discomfort experienced by the animal, a reduction in feed intake is observed, leading to anorexia and eventually death. In highly exceptional cases where the complete rectum and colon are ejected through the anus, the result is inevitably terminal.

Prevalence

Uncertainties and misconceptions accompany the prevalence and distribution with regard to rectal prolapse in sheep. Unsubstantiated references tend to reflect that the conditions of rectal prolapse in sheep are largely breed related. However, the appearance and treatment of rectal prolapse have been referred to in scientific literature long before the inception of many of the modern breeds of sheep observed today. From the literature it is evident that rectal prolapse does not only occur in ruminants but also in some single stomached mammals and birds. Rectal prolapse in ruminants have been recorded in the majority of breeds of all ages and sex, but the majority of cases are reported in ewe lambs receiving supplementary feed between 6 and 12 months of age. The exact figure with regards to the occurrence of rectal prolapse in a sheep herd is unknown. Predictions vary from “very low” to as much as 30% in certain herds. These percentages are influenced by a number of factors, and are not consistent with one herd in subsequent seasons. However, the financial loss to the sheep industry in South Africa suffers as a result of rectal prolapses is considered huge. Taking into consideration the slaughter lamb industry in South Africa with a conservative incidence figure of a mere 1% in rectal prolapse would amount to a potential loss of more than R10 million per annum.

Causes

The causes of rectal prolapse in sheep (and other animals) can be considered the proverbial pandora’s box of myths, fables and unsubstantiated personal opinions with no scientific foundation. Most common causes supposedly responsible for rectal prolapses are the docking of tails, coughing as a result of dust or lung infections like pasteurella, or the increase in intra-abdominal pressure associated with diarrhea or constipation. Other factors such as the increase of intra-abdominal pressure as a result of obesity, over- ingestion and even pregnancy were considered as causes for rectal prolapses. However as far back as 1946, the scientific community expressed doubt as to the extent the above mentioned factors can be considered contributing factors in the development of rectal prolapses.

Recent evidence indicates that the female hormone oestrogen is at least partially responsible for the development of rectal prolapse. Although endogen produced estrogen can possibly be a contributing factor, the predominant cause of rectal prolapse is associated with external sources of oestrogen like those found in certain plants (so called phyto-oestrogens) and certain growth stimulants with oestrogen functions. These results indicate that the prevention of rectal prolapse should be approached from a nutritional and management view point.

Hereditability

The logical questions that arise are whether rectal prolapse is hereditable and whether it can be eliminated by means of a process of selection. Although no evidence exists that confirms the hereditability of rectal prolapse, it is quite possible that rectal prolapse is hereditable from one generation to the next. On this basis it would be possible, by means of a strict selection process, to eliminate the incidence of rectal prolapse in certain herds and even breeds. However, the merits of such selection criteria or breeding plan need to be questioned at this stage.

Considering the fact that oestrogen on its own and in equilibrium with other hormones is responsible for a wide range of complex physiological functions and any breeding or selection strategy that could influence this hormone’s integrity and interrelationship with other hormones could have far reaching implications. Furthermore, considering oestrogens function as a hormone involved in processes like sexual development, fertility and growth rate, it is clear that any casual approach to a selection process that would influence the normal hormonal concentrations of oestrogen could have undesirable consequences. However, it is also quite possible
that future research might show that selection aimed at eliminating or reducing rectal prolapse has no detrimental or negative influence on fertility or growth rate. But until sufficient information on this aspect is made available, a more cautious approach to selection against rectal prolapse is advised.

**Management**

The stock owner cannot ignore the incidence of rectal prolapse in his herd, because of the economic losses associated with rectal prolapse. Preventative management measures can reduce the incidences of the clinical situation significantly. By selecting early maturing animals, lambs are able to be marketed at an early age before the animal reaches the age where incidences of rectal prolapse are prone to occur. A sound financial practice for the few young animals that develop rectal prolapse is still to market the animal as soon as possible before the condition worsens and the associated weight loss occurs. Furthermore the quality of the carcass is not influenced by the occurrence of a rectal prolapse.

In instances where rectal prolapse occur among breeding stock, a more conservative approach may be followed. Preventative measures for some lambs could entail that lambs have limited access to high quality supplementary feed from weaning to 10 months of age. From weaning to 10 months of age ewe lambs should only receive natural pasture and moderate to low quality roughage (not lusern or any other legume producing forage). In instances where the condition escalates to a more permanent form of exposure as demonstrated in the photos, an amputation of the exposed area can be conducted successfully which often results in permanent recovery.

Finally, rectal prolapse is closely associated with the female hormone estrogen and therefore the incidences of rectal prolapse are rarely observed in rams. However should rams develop a rectal prolapse, it would be advisable not to use such a ram in a breeding programme but rather cull it.
These important characteristics are essential for proper selection as has been proved over the past 60 years. It is therefore our duty to maintain and invest in these characteristics for future generations. When we do selection it is important to keep the following in mind:

- **Lamb (Meat) Production:** It is important to select for 1*optimum meat qualities*, 2*high production rate* (fertility - lambs born to ewes mated), 3*reproduction or fecundity* (twins - kg meat produced per Ha or acre), 4*weight gain* and 5*carcass quality* (fat distribution). It is claimed that the Dorper can lamb three times in two years. If you want to follow this programme, the following is important to remember:

  1. The ewe background is important. Fertility of an ewe is influenced by the condition in the first 12 weeks of her life cycle. *(Prof. van Niekerk - University of Pretoria)*
  2. Feeding and condition of ewes
  3. Management, size of camps, percentage rams to ewes.
  4. Fertility, condition and libido of rams.
  5. The mating season should be controlled to mate at the optimum time. The Dorper has got a long breeding season but also has a short low conception period, which varies from area to area.

- **Adaptability:** this is measured by how the animal will flourish and be able to produce and reproduce under any condition and is determined by the following: 1*Low mortality rate*, 2*reproduction tempo*, 3*growth rate* and 4*the ewe should maintain a reasonable condition* while raising her lamb to be ready for the next mating cycle. Be fair however to your animals under drought and poor grazing conditions and if an ewe has to feed multiple lambs. Allow nature to help you select for this very important aspect.
• **Hardiness:** The Dorper was bred to adapt and flourish under different conditions. From severe draught to ultra cold and wet conditions. Under these conditions the animal must be able to survive and resist health hazards and diseases. Select for this trait through observation and record keeping. Good colostrum is part of hardiness for the survival of the lamb. Why do some animals under the same conditions on the same farm not perform well and others just flourish?

• **Veld utilisation:** The Dorper is outstanding in this respect and being non-selective in its grazing habits, means that it will utilise virtually any type of grazing or roughage. This trait also makes the breed excellent when participating in any controlled grazing improvement program. It is a fallacy that the Dorper tramples the veld (pastures). It is strictly the farmer’s responsibility and management to control his stock rate.

• **Good mothering qualities:** The Dorper ewes will nurture their lambs under different conditions. When the ewes are left alone they will lamb easily, and will retain and look after their lambs. Give them enough space with good grazing, clean water etc. and they will give you a good return on your investment. The Dorper does not easily lose her lamb, even if they are handled soon after lambing. The mortality rate in the Dorper is low.
• **Covering** is an aspect that may be much more important than it appears. Shedding is very important for keeping labour costs down, and appearance in your presentation to potential buyers of your sheep. Only in commercial flocks will this aspect be of lesser importance. A good skin with the ideal covering makes an excellent “glover” skin - used in the manufacture of gloves and high-end leather products. You will find the ideal covering skin H5 and H4 an important part of your income!

Dorper Skins

- Dorper skins are regarded amongst the best in the world. It has no wrinkles and a smooth grain. It is used in the manufacture of high quality leather clothes and gloves.
- These skins are a sought-after export product, and few Dorper skins are used locally in the leather industry. Pickled Dorper skins are mostly sold for export at good prices.
- The grain of the skin takes up half of the total thickness of the skin. Glands are not well developed in the grain, as the grain consists of a network of strong collagen fibres. This network of collagen fibre makes the leather exceptionally strong. Collagen is the material that forms the leather.
- A sheepskin with a lot of hair closely resembles a goatskin. The fibres of a Dorperskin are delicate, but the skin structure is tighter and denser than that of goatskins or woolskins. The weave angle of Dorper skin fibre is flat - a feature that further strengthens the leather. *(Information supplied by the South African Meat Board)*

General appearance

- The appearance of the Dorper appeals to many people, and it is easy to care for something that pleases the eye. As you can see from the picture, the animals are adored by children and a pleasure to watch and work with. Children are our future Dorper breeders. . .

  . . . when you love them - you care for them!
BREED STANDARD

of excellence

The ideal Dorper Sheep is an animal, which can maintain itself, produce meat and reproduce under sub-optimal conditions.

**Definition:** To distinguish the degree of excellence with a description and score by points on visual appearance and performance. These values must be a true reflection of the animal.

**POINTING SYSTEM**

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<table>
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<tr>
<td>Excellent</td>
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<td>Good</td>
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<tr>
<td>Poor with cull faults</td>
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We further subdivide the animal into different sections:

**Conformation - Symbol “B”**

- B5 excellent conformation (ideal) - stud (St)
- B4 good conformation - stud (St)
- B3 average conformation - 1st selection (S1)
- B2 poor conformation - 2nd selection (S2)
- B1 very poor conformation with faults - cull

**Size & Growth rate: Symbol “G”**

- G5 ideal size - stud
- G4 average size - stud
- G3 below average size - 1st selection
- G2 small size - 2nd selection
- G1 extremely big or small size - cull

**Distribution of fat: Symbol “D”**

- D5: Good distribution of fat over the entire body with no fat localisation - stud (ideal)
- D4: Good fat distribution, slight localisation - stud
- D3: Reasonable amount of localised fat or dry - 1st selection
- D2: Localized fat or too dry - 2nd selection
- D1: Excessive localization of fat or very dry - cull

**Note:** There are no ratings for a dry animal under D5 and D4. Fat distribution is assessed as found under normal extensive conditions.

When judging discriminate more against fat young animals than mature animals

- **Colour pattern - Symbol “P”**
  Colour will be discussed in full later for Dorper and White Dorper with sketches and photos.
  For definition of colour pattern the division of the top and underline is as follows:
  a) On the point of the hock
  b) On the lower point of the knee cap
  c) In rams to the rear of the junction of the scrotum
  d) With ewes it goes up to the reproductive organs. P5, P4, and P3 qualifies for stud P2 qualifies for 1st & 2nd selection P1 is a cull

- **Covering - Symbol “H”**
  H5, H4 and H3 qualifies for stud H2 qualifies for 1st & 2nd selection H1 is a cull

- **Type - Symbol “T”**
  T5-stud (outstanding)
  T4-stud
  T3-1st selection
  T2-2nd selection
  T1-cull

The following definitions will apply when using the Breed Standards:

- **Discriminate according to degree:** This means that the bigger the deviation from the ideal the lower the score will be, (i.e. indication of colour around the eyes can score at best a P3. Moderate colour will be downgraded to a P2 and extreme colouring around the eyes extending onto the face a P1.)

- **Undesirable:** When analysed it can score at most a P2 and when extreme a P1 (i.e. brown on the face can be at most a P2 and too much a P1)

- **Cull or faulty:** This is when functional efficiency occurs under conformation or an extreme under other sections of the Breed Standards.
• Remember the **green** (first line) for stud animals – then…
• One point less than the minimum for stud is then **S1 blue** - second line
• Two points less in B,G or D will be S2 black - third line
• If under any section a 1 was given the result will be T1 and selection then a cull
• B4 can be a T5 but B5 cannot be T4 unless two of B, G or D scores a 4 then only can B5 be a T4, which is very remote.
• Note: For S1 & S2 the value for P & H can be 3, 4, or 5 if B, G or D is the controlling figure below the minimum for stud.

### Summary of the scoring system

<table>
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<tr>
<th>Conformation</th>
<th>Size</th>
<th>Distribution of fat</th>
<th>Colour Pattern</th>
<th>Covering</th>
<th>Type</th>
<th>Selection</th>
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#### A few examples of type 5’s

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#### A Few Examples for Type 1 (Cull)

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#### A Few Examples to test your understanding

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**Answers to question (?) marks, do you agree?**

1. **1st line:** B=5 (it is a T5 and D is already a 4)
2. **2nd line:** G=2 (it is a T2 an thus 2 less than min. for stud)
3. **3rd line:** T=3 (lowest of B,G or D controls selection)
4. **4th line:** D=2 (lowest of B,G or D controls again)
5. **5th line:** P=1 & SEL = cull (T1 identifies it)
6. **6th line:** T=4 & SEL = St (2x 4’s for B,G or D is T4)
7. **7th line:** T=3 & SEL = S1 (D3 cannot be a stud)
Conformation Symbol “B” (Head)

The head falls under conformation and is of vital importance in determining the animals type, character and ennobling. For the benefit of the beginner we have included some illustrations depicting from the ideal as seen below.

**Definition of the head:** Strong and long with eyes widely spaced and protectively placed. Strong nose, strong well shaped mouth with well-fitted deep jaws is the ideal. To qualify for T5, stud and commercial the upper part of the inside on the cutting teeth must be in contact with the upper gum. The lower jaw may be 2mm shorter on adult animals and 3mm shorter on lambs. When an animal is shedding the front teeth, the adjacent teeth may be used for evaluation of the fit. The forehead must not be dished. The size of the ears must be in relation to the head. A developed horn base or small horns are the ideal. Discriminate according to size against heavy horns.

**Different aspects of the head**

1. **DEWLAP:** this comes from the Persian ewe and is usually an indication of fat localisation. This trait is undesirable and spoils the shape of the ideal head.

2. **SHORT HEAD:** if you put the short head on the ideal body you will realise that the match doesn’t suit type. The definition says “strong and long”.

3. **HEAVY HORNS:** heavy horns come from the Dorset Horn ram. Discriminate against it according to degree.

4. **LONG HEAD:** the definition says long and strong but be careful not too long as it will look like a horse’s head and it doesn’t fit an acceptable type.

5. **FLAT NOSE:** this is not an enhancing type and looks awful. It looks as if it has run into a wall. Also see example HD-03 in Training Gallery.

6. **FLAT CROWN:** a flat crown or flat head, is not desirable for type. We do like a crown on the ram’s head. It makes it look more masculine. A nice smooth head for the ewe. More examples in the training gallery.

7. **PLAIN HEAD:** if this is the head of a ram then it is a cull. Be careful not to confuse this head with a young head.

8. **YOUNG HEAD:** a young head with character but no secondary development. Good feeding in rams enhances secondary (pleats) development in rams. This is part of the ennobled head as seen in the ideal head, and is desirable.
9. **HOLLOW HEAD**: be careful that you don't see a ram with an over-done Roman nose and a crown as a ram with a hollow forehead. A hollow forehead is a definite hollow portion above the eyes and you will recognise it when you see it.

10. **OVERSHOT JAW**: this is also called the fish mouth and is an in-breeding cull fault. The teeth must touch the upper gum. When teeth grow too long it can later cut the membrane between the lip and the top jaw.

11. **UNDERSHOT JAW**: Remember this is where the factory starts. This is also called a parrot mouth.

12. **WEAK BOTTOM JAW**: The mouth must supply this animal with food for years. On the other hand be careful that the bottom jaw is not too heavy again? Look at the ideal and keep the balance.

13. **STRONG NOSE**: a strong, broad Roman nose with secondary development is the ideal. The dark development in front of the eyes is called the old man's eye.

14. **LARGE EYES WIDELY AND PROTECTIVELY PLACED**: it sounds strange that we even concentrate on this but this is part of the animals traits (hardiness) to put his head into a thorn bush to graze and hence the word protectively. You will also learn from experience that looking from the front, the eyes can sometimes be too close together, like a baboon, or they protrude too much and will spoil type.

15. **SIZE OF THE EARS**: the ears should be a good size, which match the size of the head and body. We also believe that a good size ear is a sign of a good temperament, which is essential for type.

**SUMMARISING**: the head is an important part where the different aspects must complement each other. You will find more examples in the training gallery.

**Forequarter and neck:**

We are entering the area carrying the meat and although perhaps not of the most popular cuts, it is of vital importance to the functional efficiency of the animal.

**Definition**: The neck should be of medium length, well fleshed, broad and well coupled to the forequarter. Shoulders should be firm, broad and strong. A moderate protrusion of the brisket beyond the shoulders, moderate width and good depth are the ideal. Forelegs must be strong, straight and well placed with strong pasterns and hoofs not too widely split. Weak pasterns and X-legs must be discriminated against according to degree. Shoulders, which appear loose, brisket that slants up too sharply with no projection beyond the shoulders, crooked legs and weak walking ability, are faulty.
Analysing the F/Q?

Neck - medium length, well fleshed, broad and well coupled. The neck should be strong and well coupled to the body. For the ram, which will assure good muscling, we want it thicker and of medium length. A U-neck is undesirable. For femininity, a slightly thinner and longer neck is desirable in the ewe.

The head of the animal should be carried slightly forward rather than high. The animal that carries the head high is usually the one that lacks temperament. Therefore the neck must be of medium length well fleshed, well coupled and must flow into the body. Shoulders should be firm, broad and strong. As the Dorper was bred in the first place exclusively for extensive conditions, we are very strict on walking ability. There is only membrane coupling the shoulder to the body. Be careful not to overlook loose shoulders. This deficiency will not improve with exercise or age but will get worse. Loose shoulders are detectable when the shoulder blade protrudes above the spine. When the animal is walking, approaching you, or turning, you will easily detect loose shoulder blades. In severe cases the shoulder blade becomes so loose that you can slip your fingers in-between the body and the shoulder blade, explaining broad and well coupled. The shoulders must not dip away towards the body but must flow into the body behind the shoulders. The dip on the top line will be explained under Barrel. Strong means that there must be good muscle formation that can be seen on the forearm and the shoulder.

A moderate protrusion of the brisket beyond the shoulders, moderate width (between the legs) and good depth are the ideal. This part of the forequarter is very important as it involves two very important aspects. The protrusion of the brisket, as seen from the side, forms part of the leg placement, which is directly related to the walking ability of the animal. A flat chest can be a sign that the leg placement is too far forward and will show up as lack of walking ability. Rather a slightly prominent chest than no chest. The moderate protrusion in front also goes hand in hand with walking ability but also with easy lambing. Experience will tell you that once the head and shoulders are out when an ewe gives birth, the rest just follows. We don’t want to pull out lambs, have dead ewes and lambs because they can’t lamb. On the other hand we must realise that the forequarter holds the lungs, heart etc. and we want breathing space. Keep the forequarter a realistic size, which will let your factory produce without problems.

Forelegs must be strong, straight, and well placed with strong pasterns and hoofs not too widely split. The Dorper was bred to thrive and reproduce under extensive conditions. You will see cripple animals because of hollow, bandy or bowed legs and lying in the shade, staying behind etc. Don’t blame the animal if they don’t flourish, as it was the manager’s fault not to cull them. Rather a slight X-leg than bandy or crooked legs. Sometimes you will find legs tucked in. See FQ-02 in Training Gallery. If this is too severe, rather cull it. Strong pasterns are essential as the whole body weight is carried and will increase (weight) with age and pregnancy in the ewe. Also see the difference in long pasterns and short pasterns under hindquarter. Hooves should not be too widely split, which is more common in sandy conditions where there are no hard surfaces. The tissue in between the hooves can get damaged and cause infection. This will hamper walking ability. Therefore let us sum up and say weak pasterns, X-legs and split hoofs must be discriminated against according to degree. Shoulders that appear loose, brisket that slants up too sharply with no projection, crooked or bandy legs, hollow legs, too broad forequarter, poor walking ability, all these are undesirable traits.

There must be good depth in the forequarter. This measures from the shoulder to the brisket. Be careful not to allow the brisket to become too heavy. A prominent chest comes from the Persian ewe and can be an indication of fat localisation. A flat chest like in the sketch is faulty. See training gallery for examples.
**Barrel**

**Definition:** The ideal is a long, deep, wide body, ribs well sprung, loin broad and full. The sheep must have a long, straight back and not have a Devil’s grip. A slight dip behind the shoulders is permissible.

The barrel is the chamber of our factory. The head (mouth) takes in material, the forequarter allows the factory to work (heart lungs etc.) and now the barrel part must convert this (sometimes inferior) material into lovely, tender, juicy meat. Quite an important part, we can say, but let us see why it is important.

This is a short definition for such a large area, but explains everything. Refer to the sketches below.

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**Long, deep, wide body:** The length of the barrel is measured from behind the shoulder blade (feel it) to the front of the hip. This is the area for those tasty loin, rib and shoulder chops. Yes, the heart of the barbeque and of course length because if you stretch the animal you don’t put more ribs in it but more meat. Be careful not to stretch it too much. On the other hand, keep in mind that length of body is a great contributor to mass which means more money. This however is not the prime factor because it should also be wide and deep. Wide, so that the loin muscle can grow and there is capacity for food and development of the womb for twin lambs. Depth measured as indicated in the illustration is important. This goes hand in hand with spring of rib and type.

A cylindrical shape is not the ideal and we do discriminate against it especially as far as type is concerned. Let’s have an underline that shows good depth. A long straight back (good top line) is important. A slight dip is permissible, but when it becomes severe with loose shoulders (devils grip) it can be culled.

The ideal well developed loin (eye muscle) towards the rear of the animal (see picture above) is an indication of good muscle. Take note that muscle means meat. The loin should be broad, full and should flow into the hindquarter. An aspect, which is very important and easily overlooked, is femininity and masculinity in animals. Fertility is directly proportionate in this characteristic and if we look at the sketches we want an overall female shape in the ewe and overall male shape in the ram. Strive to keep the breed as found in nature. More examples can be seen in the training gallery.

**Hindquarter**

The illustrated H/Q on the next page is self explanatory. We have come to the money making part of the animal and this is what this factory must produce. The more meat we can create, without overlooking important aspects on the animal, the more money in our pockets. The hindquarter contains only expensive meat and contributes largely to the weight of the carcass. Let us therefore appreciate what can be achieved, as seen in the pictures.

**Definition:** A long and wide rump is the ideal. The inner and outer twist to be well-fleshed and deep in adult animals. The hind legs must be strong and well placed with sturdy feet and strong pasterns. Weak, skew pasterns and sickle hocks must be discriminated against according to degree. The hocks must be strong without a tendency to turn in or out. Bandy- or perpendicular hocks are faulty.
A long and wide rump: This determines the size of the leg of lamb or leg of mutton. As much as 1/3 the price of a lamb can be determined from a good quality hindquarter. The inner and outer twist as illustrated in pictures must be well flesheed. The muscle must go right down to the hock as in the illustration. We talk about the “shin must not be lean” or “the catch point must be short.” This is the part above the hock. We discriminate against a sloping rump or short round rump. Imagine how much meat is lost on a sloping or short round rump? The hind legs must be strong, just imagine what the strain on the hind legs are when a 110kg ram is mating with an ewe. Remember when the ram is penetrating the ewe there must be bounce in his legs and his feet well placed to anchor the ram for good penetration. With legs well placed, there is ample space for healthy testicle development and space to hang. The position of the legs is also an indication of pin bone placement that will be inherited by his offspring, which is important for the ewe to give birth easily. The same goes for the ewe, as she must be strong in her legs to carry the weight of the ram in mating. Walking ability is essential and the hind legs must be looked at with a critical eye. The hind legs must be strong and cow hocks must be discriminated against according to degree. Perpendicular and bandy (bowed) legs are cull faults. Sickle hocks means that the animal walks with its hind legs too far forward which hampers walking ability. Perpendicular or straight hocks can be the result of weak pasterns. Skew pasterns can be the result of feeding, environmental factors (soft ground) and genetics. Discriminate according to degree.
If we look at the sketches below, you will notice that long pasterns are more prone to collapsing than short pasterns. The animal stands more on its feet when the pasterns are short. We judge weak pasterns on degree but be assured that if the dewclaw is touching the ground, it will be a cull.

**Reproductive Organs**

The reproductive organs are small, but this is where the whole process begins. Don’t neglect one of the most important aspects.

**Definition:** Well-developed udder and reproductive organs are essential in the ewe. The scrotum of the ram should not be too long and the testicles should be of equal size and not too small. Any abnormalities in the testicles are cull faults.

- Minimum testicle circumference size in a sitting position:
  - 10 months of age 30cm
  - 2 tooth 32cm
  - 4 tooth 33cm
  - 6 tooth and older 34cm
- A split of 1.5cm deep allowed on scrotum of ram, measured from the deepest point to bottom of testicles.
- Any projection of a prolapse on the anus or vagina is faulty.

Sometimes you will see well-developed udders that cannot produce milk. In young ewes you don’t have much of a choice than to mate them and see how they produce. Make a point of examining each ewe for a healthy udder after the first lamb before mating her again. Do not breed with ewes that cannot raise their lambs. Spend your time on the things that really matter. Remember that the growth in the lamb the first two months determines the milk production and mothering qualities of the ewe. Take notes, mark them and improve your system’s effectiveness. As far as well-developed reproductive organs (ewes) are concerned, it is true that the ewes with well-developed reproductive organs tend to produce more regularly and give birth easier. Pigmentation or a sign of pigmentation is a good trait on the teats of the ewe.

Pigmentation on the reproductive organs of the ewe or indication on the white Dorper is essential to prevent sunburnt. If sunburnt, and the ram wants to mate the ewe, the ewe tends to move away.

![Well pigmented teats](image)

Do not lose re-productive ability by ignoring lack of pigmentation. The scrotum of the ram should not be too long as this can bruise when running and the temperature control for quality semen can be affected. The testes should be of equal size and have a good circumference measurement. See definition for minimum sizes. This measurement should be done in a sitting position. Testes of a good size, hanging to a point not much lower than the hock is the ideal. The correct procedure however is to have the testes examined and a sperm count done. It wouldn’t help to have everything in order and an infertile or low sperm count ram. It is important to note that semen is very sensitive to heat. A lot of conditions can influence the semen temperature of the ram like desert or ultra cold conditions. The semen temperature is controlled by lowering the testes for cooling. Contraction of the testes to the body will increase semen temperature. Therefore, if the shape and elasticity of the scrotum is not up to standard, you can end up with a low sperm count. Also inspect the ram at the sheath and the penis itself for penis infection before mating starts.

The penis check is a very simple check. With the ram in a sitting position, push its penis forward through the sheath. Infection is easily detected. Rev-1 vaccine for brucella ovis is a live vaccine and should be inoculated on its own to rams, between 3 and 6 months for best results. Another very uncommon occurrence is twisted testes or 45-degree testes. A split in the testes as shown on the illustration is undesirable and only a split of 1.5cm in depth is allowed. A good pigmentation on the sheath is the ideal.

![Small & large testes](image)

The picture of small and large testes were taken of rams of the same age and although the smaller testes are just within the minimum, it shows the difference that can occur at the same age. Take note of the ideal shape and size on next page.
Lastly, look at the two ewes with the difference in their reproductive organs (photo). The width between the legs are essential for udder development and good separation of pin bones for lambing. See photos in training gallery for more. Remember that reproduction is essential to stay financially happy.

General appearance and Balance

The last aspect that is covered under conformation is General Appearance and Balance:

Definition: The sheep must be symmetrical and the body parts balanced in proportion to each other. A calm temperament with a vigorous appearance is the ideal.

The following pictures are good examples of general appearance and balance. If you haven’t got experience when evaluating, be careful not to discriminate before the animal has reached its full potential. What we want to stress in general appearance is to look and see how the different sections accommodate each other. Balance means that the relation between height, width, length and depth of the animal must be in proportion. When you look at the animal you must have the picture in your mind of what is very close to the ideal as far as phenotype is concerned.

The Dorper has improved immensely through selection within the parameters of the Breed Standard of Excellence. If we can accommodate accurate breeding records, studbook and performance testing to this wonderful system we will ride the crest of the wave to success.

See the training gallery for more examples.

Size & growth rate (symbol G)

Definition: A sheep with good size and weight for its age is the ideal. Discriminate against extremely large or extremely small animals, under the same environmental conditions.

Be careful not to lose meat qualities and width when breeding the animal taller, keep it balanced. If we assume that the three ewe lambs on the next page are all one year old, we can say that ewe nr. 1 is a little small for her age. If they are 6-months old, we can say that ewe nr. 3 is quite tall for her age. This means that ewe nr. 2 is the ideal size for both these examples.

The ideal for slaughter lamb production is to have a live carcass with the ideal fat distribution weighing plus minus 40kg, between 4- and 5- months. This weight depends on the quality of grazing. Under very favourable conditions this weight can be achieved even earlier. Market your slaughter lambs as soon as possible and ideal fat distribution.
Definition: Too much localisation of fat on any part of the body (see circles) is undesirable. An even distribution of a thin layer of fat over the carcass and between the muscle fibres is the ideal. The sheep must be firm and muscular when handled.

The fat distribution of the Dorper is so perfect that little has to be done about this aspect. Problems arise when breeders disregard 60 years of experience and experiment with fat tailed rams onto their thoroughbred Dorpers to “improve” them. Yes, they may achieve the crossbred vigour, but with lambs that are downgraded with localised fat. In the meantime, the offspring of this cross can’t be used again in your flock because they are an off type. If you need to have fatter lambs use the correct type of pure Dorper or White Dorper ram. You will be surprised at the results, and your flock stays pure. The circles in the picture, on the previous page indicates the areas where fat accumulation usually takes place. Remember that conformation, size and fat distribution are the primary aspects where only a 4 or 5 point is accepted for approving animals.

Colour Pattern Dorper

Definition Colour pattern: A white sheep with a black head and neck is the ideal. A limited number of spots are allowed on the body and legs. Totally white sheep or sheep that are predominantly black are faulty. Brown or white hair around the eyes must be discriminated against according to degree. Pink teats, pink under the tail and white hooves are faulty. Brown on the face is undesirable.

Colour pattern is the only aspect where you have different standards for the Dorper and White Dorper. We will first handle the Dorper (black head) and then the White Dorper. To help understand the colour pattern, there is a cut-off line, which cuts the animal into two sections. The reason for this was eye appeal and inbreeding aspects. More importantly, concentrate on the more economical aspects B, G and D for commercial farming. The colour and covering will be in place, as the leaders would already have concentrated on this aspect. For explanation, we will refer to the sketches all the time. The cut-off line is the same for both Dorpers and White Dorpers.

Colour pattern cut-off line:
Follow the // stripes on the animal (next page).

a. On the hock: This is on the point of the hock. Below this point is considered being on the underline. It forms an imaginary circle around the leg.

b. Under the knee: we take the bottom of the loose knee-cap and beneath this is on the underline the same as on the hock.

c. Now we take the underside of the body and the imaginary line as you see it, on both sides. When you see the animal it is very clearly defined and runs to the front, but no further than the rear of the front legs. The underline goes back to the rear on the junction of the scrotum of the ram. If the scrotum is black and has dark pigmentation it is allowed, but if the scrotum has black short hair, it is part of the underline and limited to 10cm in diameter.

d. In ewes, this underline goes up to the reproductive organs.
Colour pattern (symbol P)

**P5: The ideal colour.**

a. A white sheep with black head or head and neck, no further than where it touches the shoulder or breastbone at the front.

b. Complete pigmentation on anus or reproductive organs and the hooves is compulsory.

**P4: A little more colour is allowed.**

a. White sheep with black limited to head and neck with loose black spots on neck not touching shoulders or breast.

b. A blaze, white patch, not extending further forward than the horn base.

c. A number of specs on the underline. Specs mean a few hairs together that turned black and doesn’t form a spot.

d. 10cm diameter patch (plus minus palm of hand) at sheath of ram.

e. 10cm diameter patch on reproductive organs of ewe or rectum of ram.

**P3: This is the last section that still allows colour to qualify for stud.**

a. Black limited to the head, neck & forequarter, not extending below the knee or behind the shoulder.

b. Loose patches on the forearm and above the knee are regarded as on the forequarter.

c. Loose patches on or below the knee are regarded as on the underline. This will be limited to a total of 10cm in diameter. Patches on the hock are limited to the underline.

d. With a black forequarter the animal may carry more black on the forelegs provided there is a division on the cut-off line.

e. A limited amount of spots on body and underline.

f. For stud the animal must have 50% pigmentation on the hooves, reproductive organs and anus. There should be an indication of pigment on each hoof and on the teats. Pigmentation is not a requirement on the sheath of the ram.

g. A 10x20cm patch is allowed at the sheath of the ram or at the reproductive organs of the ewe provided there is no further colour on the underline.

h. A white patch on the head or neck, excluding around the eyes where black is preferred. Discriminate according to degree against white or brown around the eyes. A white blaze not dividing the black head is allowed. The ears must be at least 50% black.

*Note:* Only an indication of pigment is required where applicable on rams under 60kg & ewes under 50kg for show purposes.
Take note P3: The whole forequarter can be black, not extending past the rear of the shoulder and an imaginary line taken over the back. Also note that the black may not extend on the chest, past the rear of the back of the shoulders. In case the colour projects through past the chest and past the imaginary line at the rear of the shoulder, only a spot of 10cm (4”) is allowed. A big spot is very often seen on the reproductive organs of the ewe, but note the shape of the spot is oblong and must not be wider than 10cm (4”). Take note of the explanation in “D” where there must be a break in colour on the knee if the front leg is black. Look at explanation “H” and you will see that a white blaze is allowed and in this case, extends beyond the horn base to the front. Thus, if the head is black with a blaze extending past the horn base, with no other black anywhere, the scoring will be a P3. A continuous blaze where the black head is divided into two becomes a P2. White or brown around the eyes degrades the pointing to P3, P2 or P1 see sketches. The total sum of black on both ears together, must be more than 50% to qualify for P3.

P2:

a. Mottled except as allowed in P3 and P4.
b. Sheep with a complete blaze and / or more than 50% white on the combined surface of both ears.
c. Moderate brown around the eyes, and or brown colour on the face.
d. Moderate white around the eyes.

P1:

a. Completely white or black sheep
b. Sheep with any other colour than black or white on the body
c. Excessive brown hair around eyes and or on the face
d. No pigment on any part where required
e. Blue in one or both eyes
f. Excessive white or brown hair around the eyes extending onto the face.

Colour Pattern White Dorper

Definition: A white sheep, fully pigmented on the eyelids, under the tail and on the teats is the ideal. A limited number of spots are allowed on the ears and underline.

If you follow the illustration on the white Dorper you will find it very easy. Note: brown or black is regarded as pigmentation and must be looked for on the eyelids, which are pink if no pigmentation is evident.
The pigmentation (brown) in picture nr. 2 is regarded as fully pigmented. This is also true for pigmentation on the reproductive organs or the anus of the ram. Pigmentation is important to prevent sunburn. These soft exposed areas and the ears can develop cancer if no pigmentation is evident. The pigmentation on nr. 1 is the ideal. Only an indication of pigment on the reproductive organs is required. One of the spots as shown in illustration nr. 1 would suffice. Brown colouring without spots is also acceptable.

**P5:**

a. A white sheep with no hair or wool of any other colour in its covering
b. Completely (100%) pigmented brown or black eyelids
c. There must be an indication of pigment under the tail or around the reproductive organs
d. Brown or red eyelashes are permissible
e. Colour may appear on the hoofs

**P4:**

a. A white sheep with a limited number of black, brown or red coloured speckles in the covering, confined to the head, neck and underline
b. At least 50% of the eyelids must be pigmented in both ewes and rams, with an indication of pigment on each eyelid
c. Brown or red eyelashes are permissible

**P3:**

a. A white sheep with a limited number of black, brown or red coloured speckles in the covering, confined to the head, neck and underline
b. A white sheep with brown or red coloured spots or patches in the covering, confined to the head, neck and underline collectively not to exceed 10cm (4") in diameter
c. At least 25% of the eyelids must be pigmented in both ewes and rams, and it may appear in one or both eyes
d. Brown or red eyelashes are permissible

**Summary for stud:**

- P5: No colour allowed in covering with 100% pigmentation on eyes and an indication on anus or reproductive organs
- P4: A few black, brown or red coloured speckles/small spots on ears and underline allowed with 50% pigment in total on eyes with an indication on each eyelid
- P3: Brown or red colour spots or patches collectively not exceeding 10cm (4") in diameter are allowed in the covering of the head, neck & underline with 25% total pigment in one or both eyes
- Note: An indication of pigment at the anus or reproductive organs is only required for P5. Any more brown or red colour in the covering than described under P3 becomes a P2. More black speckles/spots as described under P4 & P3 will become a P1. Any black spots in the covering on the body, neck or forequarter is faulty.

For photo details see sketch next page
Covering

If we look at human beings and the way we dress to enhance our appearance, the same applies to the Dorper. The ideal covering, H5, is the ultimate to please the eye. If you invest in this type of covering you will find good shedding and an animal that is very appealing to everyone. No wonder we have such a beautiful, soft definition for the ideal covering.

**Definition: H5**
A short, loose, light mixture of hair and wool with a natural clean kemp underline. The head should be covered in short clean kemp.

**Note:** The underline on the body for colour pattern is also valid for covering. The photo shows that the shoulder (upper arm) is clean for H5. (“Kemp” is the very short hair lying flat on the skin).

H4: This covering is also very appealing and will shed well with slightly more wool on the forequarter, but still a short covering on the underline.

**Definition: H4**
A short, loose, light covering of hair and wool with wool predominating on forequarter and with a natural clean underline. Wool is allowed up to the crown of the head.

H3: This is the last covering permissible for stud animals. Take note of this covering, as shedding will be less and appearance may start suffering. H3 can actually be divided into two parts; the more woolly type and the more hairy type - see the photos. An apron also qualifies under the H3 rating. On a practical note, H3 appeals to the eye when the covering is sheared or trimmed very short - you can however be disappointed when the covering grows out again, and an untidy appearance is the result! This aspect is often overlooked when groomed animals are being sold at auctions.

**Note:** Ram and ewe lambs under 60kg and 50kg respectively, must have an indication of pigment on the eyelids for show purposes.
Definition: H3
A short, loose covering of predominantly wool or soft fine hair with perceptible kemp on the outer thigh. A soft light mane or apron is allowed. Wool is allowed forward of the crown on the head.

Note: The word “light” is taken out of the definition and the underline is not clean but more woolly or hairy.

Definition: H1
a) Exclusively coarse hair.
b) Exclusively wool (long and dense).
c) A coarse hairy mane.

H1: This speaks for itself and is not attractive. (Remember that this looks like H2 covering, but there is not a mixture of wool and hair - H1 is either all wool, or either all hair. With all types of covering we prefer a thick skin.

Discern in covering on the following aspects:

a) Covering too dense and too long.
b) Long growth on the underline of matured sheep
c) Covering too sparse (very short covering). When covering is too sparse under severe desert sun conditions, the skin on the backbone will burn and the covering will not grow again in that area.

Note: Be careful with lambs: they get their “real” covering only after their first matured shedding which happens at around 12 months of age.

Type
We have built the sheep from head to tail and now have the most important decision to make. It is not always easy to determine type, especially if you stand to close to an animal. To determine type, it is advisable to stand a few yards back and look at the picture in front of you. Remember that you have already rated this animal for possible deficiencies and type must adhere to possible deficiencies. For instance, you can have a short bottom jaw not visible from outside, but a beautiful type. Don’t let type overrule deficiencies but be consistent and precise on type. The definition says it all:

Definition: Type
Type is determined by the degree the sheep conforms to the Breed Standards. The general impression must be of good balance, muscling and a vigorous appearance. Masculinity in the ram and femininity in the ewe is important.

Note: Any tendency to a cull fault cannot be a Type 5.

H2 This rating is not for stud animals, but flock animals, and from the definition you will see that it tends to be a more undesirable covering.

Definition: H2
a) Almost exclusively coarse hair.
b) Almost exclusively wool and very dense.
For examination purposes the following important values will be used for the different characteristics:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Points</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformation</td>
<td>3</td>
<td>important to be correct</td>
</tr>
<tr>
<td>Size</td>
<td>1</td>
<td>easy to be correct</td>
</tr>
<tr>
<td>Fat Covering</td>
<td>1</td>
<td>little variation to value</td>
</tr>
<tr>
<td>Colour</td>
<td>2</td>
<td>important for appearance</td>
</tr>
<tr>
<td>Covering</td>
<td>2</td>
<td>also an economical aspect</td>
</tr>
<tr>
<td>Type</td>
<td>3</td>
<td>important to be correct</td>
</tr>
<tr>
<td>Selection</td>
<td>3</td>
<td>important to be correct</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>be sure you understand the important aspects</td>
</tr>
</tbody>
</table>

STUD breeding

Stud breeding today is a highly specialized undertaking. Before a prospective breeder tackles a project of this nature, there are a few aspects that must receive careful consideration. It is unjustifiable for anyone to invest in stud breeding unwisely. If certain factors are unfavourable, it would be advisable and more economical to farm commercially.

Points for consideration

a. Preference and love of the breed is imperative.
b. Suitability of the farm for stud breeding, i.e.
   1. Situation of property
   2. Quality of grazing
   3. Supplementary food production potential and/or availability of a source to supply
   4. Sufficient, well-watered camps
   5. Good handling, “penning” and, if necessary, shedding facilities
c. Provision for fairly large financial commitments, especially at the outset in order to finance the purchase of good breeding material.
d. Stud breeding is a long-term investment with no instant formula for quick results.
e. A stud breeder must be prepared to continually broaden his or her knowledge and keep in touch with modern developments and tendencies.
f. The breeder must aim for a breeding programme that recognizes the most economic characteristics of the breed - avoid a haphazard breeding policy.
g. Use all the modern selection aids to facilitate a stud-breeding venture. These include record keeping, participation in the National Performance and Progeny Testing Scheme and participation in Ram Performance Test Projects.
h. Prospective stud breeders must have certain managerial qualities, as stud breeding requires sound decision-making, planning and care of the animals.
i. Good public relations are essential. Easy communication with people and honesty with himself and with others plays an important role.

Conclusion

Few enterprises can give more personal and financial satisfaction than a successful stud-breeding project with Dorper sheep.

This can only be achieved with careful consideration of the above points, with particular attention to:

- Sound financial planning
- Sound farm planning & management
- Sound knowledge
- Sound selection of breeding material

The KOS idea cannot be emphasized enough!
Judging animals is one of the most controversial aspects to handle. The mere fact that nobody wants to be a loser is enough proof of this.

It is true that everybody thinks that his or her animal is the best and we do not always see shortcomings in our animals until we compare them. Because of this fact, it is important to gather knowledge from outside so as to look at your animals from a different perspective.

The show ring is a good place to compare your animals with other breeders and find out where you fit into the bigger picture. On the other hand, the show ring can be demoralizing if you show people what you have and it doesn’t compare.

Judging therefore, is a sensitive issue and the judge must be very discrete in commentary and fair in his judging. The judge should never apply his own personal taste, but judge strictly according to the Breed Standards as this will be his passport to fairness. The judge should always be able to give a fair and justified commentary on each class.

The question therefore will be “What must I look for to be a winner and not be disappointed in the show ring?”

**To put your mind at ease, here are a few tips:**

1. The ideal animal must still be bred.
2. Nobody is perfect and mistakes will be made.
3. Gather knowledge through comparing and set your goals.
4. Be a good loser rather than a bad winner.
5. Give credit to winners, one day you would like the same credit if you win.
6. Admit defeat – it will make you a winner.

**What does the judge look for?**

The first aspect the judge will look for in the show ring is functional efficiency. No animal should win if it does not comply to this concept. If you have studied the Breed Standard of Excellence you will know this means that animals with cull faults must be eliminated.

Therefore, first of all, the judge will look for deficiencies in the animals and make a note in his mind. For objectivity, specific age and weight groups must compete against each other within that group. If there are any cull faults these animals will be eliminated by putting them aside.

Be sure of your facts and handle this in a very compassionate way. Only when judging the champions different ages will compete for the honours.

After this elimination the judge will look for economical aspects like meat qualities, muscle, length of body, length of rump, good type and balance. Also make sure of aspects like walking ability, masculinity in rams, femininity in ewes and all the aspects discussed in the lectures.

To promote the breed, any show is a shop window for our industry and the picture you want to leave with people is of animals that we can be proud of.

The judge must select the animal that complies to the ideal after considering all the various aspects as a possible winner. Then he must place the others in order of preference. As soon as this sequence is complete it becomes easier to compare animals and make the final decision.

If further comparison is necessary, change the placing or let them walk simultaneously. Be careful not to let mature rams, which are not familiar, walk together as they can hurt each other.

Once the judge has made up his mind about his choice, he should announce it and adhere to it. The judge should have a reason for each placing up to at least the fifth place.

Be careful not to humiliate breeders by over criticism of animals in explaining your decision. Try to balance the negatives with some positives. Make a memory note of all the winners and second places, as you could see them in the champion classes again. It is important to have a good picture of the second-placed animal, as this animal may be better than the actual first places in other classes, and could compete for Reserve Championships.

Only the second-placed animal in the class where the Champion was selected from will have a chance to compete against the others for Reserve honours. This applies to rams and ewes.

The physical way of competing may differ from region to region and from country to country, so make sure you know the requirements of the local system.
Aims and Objectives of the Breeders’ Society
1. To encourage and promote the breeding of Dorper Sheep.
2. The provision of an administrative office controlled by a breed director.
3. The collection and spending of money in the interests of organisation and promotion of the Dorper breed.
4. The promotion of the Dorper locally by the establishment of affiliated Dorper Clubs.
5. The establishment of an inspection service whereby flocks are classed, individual sheep inspected and advice given to breeders.
6. The training of Judges and Inspectors.
7. Dispersal of knowledge of the Breed, by issuing brochures, newsletters and organising short courses.
8. The Society encourages better breeding methods by advocating record keeping and progeny testing.
9. Promotion of Performance Testing and keeping of records to make full use of available technology.
10. The organisation of championship shows and the compiling of prize lists for other shows.
11. The organisation of official sales.
12. To ensure that all members of the Society will be treated equally in terms of the Constitution.
13. To make it as convenient and easy as possible for its members to farm with and conduct their Dorper enterprise.

The Council:
The Society’s members at Annual General Meetings elect the Council. Elected members retire in rotation after three years service, but are again eligible for re-election. The Council meets at regular intervals to deal with the Society’s affairs. The Council consists of 9 elected members, an ARC representative and the Breed Director.

Dorper Clubs
These clubs, which are affiliated to the Parent Society, have been established in all regions of the country. They are a vital part of the Society as they assist to a great extent, in the promotion of the breed through local organisation.

Their aims, amongst others, are as follows:
1. To promote the Dorper sheep by organising:
   a. Dorper Days - Lectures and practical demonstration of breed standards, lectures on general management and care of the Dorper Sheep with emphasis on local conditions.
   b. Mini Courses - Over 2 days - an extension on (a).
   c. Short Courses - Junior and Senior, lasting 4-5 days.
   d. Regional Sales - at different venues within the region.
   e. Club championship Shows - held every second year.
   f. Flock Competitions - to involve the flock breeder to a greater extent and to provide him with competition.
2. To stimulate the interest, support and co-operation of the commercial breeder who can be regarded as the backbone of the industry.
3. To advise prospective Dorper breeders and therefore ensure that their undertaking begins on a sound basis.

The information is from a South African perspective, and may differ slightly abroad.
1930's: Cross breeding started at the Department of Agriculture Grootfontein.

1942: The first Dorset-Persian co-ordinator R.Y. Edmeads started with different breed experiments in liaison with other co-ordinators to establish the outcome of the Dorset Horn X Persian crossing.

1945: The first Dorset X Persian class at the Hopetown show in 1946 was organised by W.B. Ludik.

1946: First Dorset X Persian inspection service card developed to evaluate animals. Edmeads established the first stud for the Dorset X Persian.

1950: The establishment of the Dorper Breeders' Society of South Africa.

1951: Inspections through a service card system started. First inspector was appointed namely W.D. Meyer and also a member of the management. The showing of Dorpers started at Agricultural shows.

1952: First official inspectors appointed: S.W. Bosman en H.C. de Smidt. First official inspection of Dorpers was done for R.L. Stander, Welgevonden farm, Hopetown district.

1953: Second group of inspectors appointed: C.T. van Rensburg (Transvaal), L. Mostert (Cape province), R.Y. Edmeads (Middellands), H.C. de Smidt (Hopetown) and Van der Walt (Bloemfontein).

1954: First information magazine about Dorpers: W.S. Hugo.


1962: Appointment of the first fulltime secretary Mrs. S.E. Abbott (later Elliot).


1963: Inspectors for different districts. First Inspector and judges' day at De Aar.

1964: Affiliation of White Dorpers with the Dorper Sheep Breeders' Society.

1964: Performance testing scheme established.


1967: Rhodesia (Zimbabwe)-breeders form their own Breeders' Society known as: “Dorper Sheep Breeders' Association of Central Africa.”


1974: Doctorate conferred to dr. Q.P. Campbell: A Study on breeding problems in Dorper sheep.

1975: First 25 years of existence of the Breeders' Society held at De Aar.

1977: Affiliation with S.A. Studbook Society.

1979: Rights reserved acknowledgement to the Breeders Society.

1980: Celebrate thirty years of existence of the Society at Grootfontein, Middelburg, Eastern Cape.

1982: First combined Championship Show of Dorper and White Dorpers. Record prices achieved.


1985: Offices for the Dorper Society bought at Middelburg. Computers bought for the offices to streamline the administration in the office. First official club auction of performance testing rams at Colesburg. E.P. Dorperclub becomes active member of Studbook. Rodney Rayner appointed as part time liaison officer.

1986: National carcass competition: 1st Prize group class. 2nd Prize in the individual class.


1988: Record entries of 1200 Dorpers for the National Championships at Bloemfontein.

1990: 1000 animals entered for the National show and becomes the norm in 1990, 1992, 1994 and 1996. At the National Expo at Bloemfontein the
Dorper made history where a carcass competition of 1200 lambs from different breeds took place. 120 Breeders took part and from 1200 lambs entered 600 were slaughtered and the Dorper took 8 out of the first 10 places.

1991: Dorper stamp established.

1993: Dorper History: Prof. J.A. Nel. Trademark for DIAMANT DORPER registered and announced.

1995: Export of first embryos to America, Canada and Australia.

1996: Forming of the American Dorper Sheep Breeders Association under the auspices of the South African Breeders Society. Record prices for a White Dorper ram of R250 000 and ewe of R65 000.

1998: Still the most popular sheep breed in South Africa and continuing to grow.


2006: World record price of R400 000 for a Dorper ram at Upington Sale.

2007: The implementation of a PowerPoint training system for Dorper courses, developed by Dolf Lategan.

Research references
A lot of research has been done the past 50 years on Dorpers. For more information and continued research on the Dorper you can contact the Dorper Breeders’ Society. Below a few interesting references which you can investigate.

1) Production and product analysis of two types of Dorper Sheep: PE Strydom, JH Vermeulen, E Nel & JF de Bruyn. DVPI, Private Bag X2, Irene, 1675 (Research council).


3) Dr. Q.P. Campbell “The Dorper-Super Non-Woolled international breed of the twenty-first century.

4) Dr. Q.P. Campbell “Make money with Mutton sheep.”


6) The importance of breeding records and performance testing (Dr. J.J. Olivier).

7) Research on Meat qualities and their nutritional value. (P.E. Strydom Phd. ARC Irene South Africa.)

8) Elbow arthritis (Artrose) in sheep (Dr. Van den Berg).

9) In this publication we acknowledge different researches and have used their information. Some of this research may only be available in Afrikaans.

10) Nutrient requirements (Prof Dr WA van Niekerk)

Nutrient requirements for sheep

By Prof Dr WA van Niekerk
Department Animal and Wildlife Sciences, University of Pretoria

The following factors are essential in the planning of a feeding program for sheep:

1. Body Mass
2. Physiological status (production)
3. Environmental factors (intensive, extensive, warmth, cold, etc.)

As far as body mass is concerned, the following:

1. Younger lambs that are in their active growth curve will need more energy, protein, phosphorous, calcium etc. compared to the more matured animal.

2. The matured animal’s nutrient requirements will however be directly proportional to its body mass.

3. When looking at the physiological status of sheep, we can divide this into four main groups:
   a. Growth  b. Production  c. Lactation  d. Finishing

4. It is essential to look at the requirements for maintenance in every case.

5. As far as environmental conditions are concerned the animal will require up to 50% more, based on maintenance values, to collect food under external environmental conditions.
The following tables will explain the above statement:

<table>
<thead>
<tr>
<th>W</th>
<th>ADG</th>
<th>DM</th>
<th>Cp</th>
<th>ME</th>
<th>Ca</th>
<th>P</th>
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<tbody>
<tr>
<td>kg</td>
<td>(g/day)</td>
<td>(kg)</td>
<td>(g)</td>
<td>(MJ)</td>
<td>(g)</td>
<td>(g)</td>
</tr>
<tr>
<td>30</td>
<td>180</td>
<td>1.2</td>
<td>4.0</td>
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<td>1.5</td>
<td>3.0</td>
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<td>13.4</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Table 1: The impact of body mass on daily nutrient requirements in young (replacement) ewes. (National Research Council, (NRC from here), 1985)

<table>
<thead>
<tr>
<th>W (kg)</th>
<th>DM Intake per day (kg)</th>
<th>Cp (g)</th>
<th>ME (MJ)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
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<tbody>
<tr>
<td>50</td>
<td>1.0</td>
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<tr>
<td>70</td>
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<td>113</td>
<td>10.0</td>
<td>2.5</td>
<td>2.4</td>
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</table>

Table 2: The impact of body mass on the daily maintenance requirements of matured ewes. (NRC, 1985)

<table>
<thead>
<tr>
<th>Physiological status</th>
<th>DM intake per day (kg)</th>
<th>Cp (g)</th>
<th>ME (MJ)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestation, first 15 weeks</td>
<td>1.2</td>
<td>112</td>
<td>10.0</td>
<td>2.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Gestation, last 6 weeks</td>
<td>1.6</td>
<td>175</td>
<td>14.2</td>
<td>5.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Lactating, 1 lamb, first 8 weeks</td>
<td>2.1</td>
<td>304</td>
<td>20.5</td>
<td>8.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Lactating, 2 lambs, first 8 weeks</td>
<td>2.4</td>
<td>389</td>
<td>23.4</td>
<td>10.5</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Table 3: The impact of physiological status on the daily nutrient requirements in matured ewes. (50 kg) (NRC, 1985)

Despite the feeding needs of the animal, it is also important to note the potential of the fodder to satisfy these needs. The following system will explain just that.

The animal has two main needs: to provide for its general maintenance, and to provide for the formation of the product. Similar representations can be made for other types of nutrition.

Let us look at the situation where a lamb, mature ewe or reproductive ewe is placed on fertilized fodder (11% RP) eg. *Eragrostis curvula*. The needs of the animal are fulfilled in the following manner:

\[
\text{Energy in fodder} = \text{Bruto energy (100)}
\]

\[
\text{Energy lost in droppings, fodder and animal material (20-60)}
\]

\[
\text{Digestible energy} = (40-80)
\]

\[
\text{Basic body functions}
\]

\[
\text{Product forming, wool, meat, ect}
\]

\[
\text{Usable energy} = (30-70)
\]

\[
\text{Energy lost in urine and methane gas} = (15-20)
\]

(Data from daily dry material intake values as recommended by the NRC, 1985)
Table 4: The first value is the needs of a young replacement ewe, and the values in brackets thereafter the supplied nutrients from *Eragrostis curvula*.

<table>
<thead>
<tr>
<th>W (kg)</th>
<th>CP (g)</th>
<th>ME (MJ)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>185 (143)</td>
<td>11.7 (11.83)</td>
<td>6.4 (3.25)</td>
<td>2.6 (1.56)</td>
</tr>
<tr>
<td>40</td>
<td>176 (154)</td>
<td>3.8 (12.74)</td>
<td>5.9 (3.5)</td>
<td>2.6 (1.68)</td>
</tr>
<tr>
<td>50</td>
<td>136 (165)</td>
<td>13.4 (13.65)</td>
<td>4.8 (3.75)</td>
<td>2.4 (1.8)</td>
</tr>
</tbody>
</table>

Table 5: The first value is the maintenance needs of a matured ewe, and the values in brackets thereafter the supplied nutrients from *Eragrostis curvula*.

<table>
<thead>
<tr>
<th>W (kg)</th>
<th>CP (g)</th>
<th>ME (MJ)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>95 (110)</td>
<td>8.4 (9.1)</td>
<td>2.0 (2.5)</td>
<td>1.8 (1.2)</td>
</tr>
<tr>
<td>60</td>
<td>104 (121)</td>
<td>9.2 (10.0)</td>
<td>2.3 (2.8)</td>
<td>2.1 (1.3)</td>
</tr>
<tr>
<td>70</td>
<td>113 (132)</td>
<td>10.0 (10.9)</td>
<td>2.5 (3.0)</td>
<td>2.4 (1.4)</td>
</tr>
</tbody>
</table>

Table 6: The first value is the needs of a 50 kg reproductive ewe, and the values in brackets thereafter the supplied nutrients from *Eragrostis curvula*.

<table>
<thead>
<tr>
<th>Physiological status (g)</th>
<th>Cp (MJ)</th>
<th>ME (g)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestation, first 15 weeks</td>
<td>112 (121)</td>
<td>10.0 (10.0)</td>
<td>2.9 (2.8)</td>
<td>2.1 (1.3)</td>
</tr>
<tr>
<td>Gestation, last 6 weeks</td>
<td>175 (187)</td>
<td>14.2 (15.5)</td>
<td>5.9 (4.3)</td>
<td>4.8 (2.0)</td>
</tr>
<tr>
<td>Lactating, 1 lamb, first 8 weeks</td>
<td>304 (231)</td>
<td>20.5 (19.1)</td>
<td>8.9 (5.3)</td>
<td>6.1 (2.5)</td>
</tr>
<tr>
<td>Lactating, 2 lambs, first 8 weeks</td>
<td>389 (264)</td>
<td>23.4 (21.8)</td>
<td>10.5 (6.0)</td>
<td>7.3 (2.9)</td>
</tr>
</tbody>
</table>

From the tables it is evident that well fertilised *Eragrostis curvula* provides most of the needs of young ewes. However, in young and productive ewes, especially those with twins, an acute shortage of energy and protein is prevalent. Deficiencies in the amounts of Ca and P are evident throughout, and like the energy and protein deficiency, must be supplemented.

This is the theory. The situation in practise differs from this significantly.

During DM-intake studies done by Rethman (1980), with good quality hay, values of 1200g down to as little as 980g DM intake per day was measured from wethers of 60kg live mass.

It can be assumed with a good measure of certainty that the same values with *Eragrostis curvula* will be lower, because a host of factors influence the intake under natural grazing conditions negatively. Some of these factors are environmental influences, level of Nitrogen fertilisation, density level, and, importantly, grazing programs. Assuming then that a ewe of 50kg takes 900g of *Eragrostis curvula* per day, the following table summarises this more practical situation.

Table 7: The first value is the nutrient requirements of a 50 kg ewe, and the values in brackets thereafter the supplied nutrients from 900g of *Eragrostis curvula*. (11% CP)

<table>
<thead>
<tr>
<th>Physiological status per day (kg)</th>
<th>DM intake (g)</th>
<th>RP (MJ)</th>
<th>ME (g)</th>
<th>Ca (g)</th>
<th>P (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestation, first 15 weeks</td>
<td>0.9*</td>
<td>99 (99)</td>
<td>9.0 (8.2)</td>
<td>3.0 (2.3)</td>
<td>2.8 (1.1)</td>
</tr>
<tr>
<td>Gestation, last 6 weeks</td>
<td>1.4*</td>
<td>158 (154)</td>
<td>14.9 (12.8)</td>
<td>4.1 (3.5)</td>
<td>3.9 (1.7)</td>
</tr>
<tr>
<td>Lactating, 1 lamb, first 8 weeks</td>
<td>1.7*</td>
<td>218 (187)</td>
<td>20.5 (15.5)</td>
<td>10.9 (4.3)</td>
<td>7.8 (2.1)</td>
</tr>
<tr>
<td>Lactating, 2 lambs, first 8 weeks</td>
<td>1.9*</td>
<td>276 (209)</td>
<td>23.6 (17.3)</td>
<td>12.5 (4.8)</td>
<td>8.9 (2.3)</td>
</tr>
</tbody>
</table>

*Dry material intake was calculated from a 900g intake per animal per day for a non-productive ewe, and this represents 81% as recommended by the NCR in table 3.

From table 7 it is glaringly obvious that especially ewes in their final gestation and lactating stages experience a drastic shortage of nutrients given this situation.

In the light of this, a short note about nutrition during these crucial stages.
Last six weeks of gestation

Approximately 72% of foetal development takes place during the last 6 weeks of gestation. In addition, ME is applied for foetal growth only at an efficiency level of as low as 5-22%, in contrast with values of 40-60% for growth and fat storage. This low level of efficiency together with the fast growing foetus, demands and dictates absolute attention to feeding management to prevent life-threatening deficiencies.

An additional taxation on the available nutrients during this time is made by the development of the udder. Up to 95% of the secretion tissue in the udder is formed during this period.

More demands on the nutrients are made by the need for additional body reserves in preparation for the coming lactation. Inadequate feeding during the latter stages of gestation, coupled with a diminished birth weight and less vigorous lambs, can lead to a delay in the start of lactation.

A third acute problem, especially in ewes carrying twin lambs, is Acetonomy or “pregnancy disease.”

Lactating ewes

It is generally accepted that the nutritional needs of a ewe during the last eight weeks of lactation, is approximately half of the same needs during the first eight weeks. Ewes with twins will produce approximately 30% more milk than ewes with single lambs.

Despite the status of the gestation, (twin or single) the level of nutrition will play an important role in milk production. The results are graphed in the figure below.

![Graph showing lactation yield](image)

Note well from the figure that ewes on a higher level of nutrition, showed a lactation curve with a rising tendency for longer, and that their milk production stayed higher for longer as well.

The NRC-standards for nutrition provided for a body weight loss of 25g per day for a single lamb ewe and 60g per day for a twin lamb ewe, both during the first eight weeks of lactation.

It is evident that ewes make use of their body reserves to sustain milk production during early lactation stages. When ewes gain in weight during this period, it is usually coupled with a lower milk production potential and such animals should be culled.

Lactation yield increases by 25-45 % between the first and second lactation. If the ewe lambs first at about 12 months of age, the lactation yield is low, and the increase to the second lactation, greater. Yield increases again in the third lactation, and the maximum lactation yield is found in the third to sixth lactation.

According to next graph the immunoglobulin level in the blood of suckling 1-2 day old lambs reached a peak when the dam was 5-6 years old. Form the sixth year a sharp decline occurs, which could be the main reason why old ewe’s (6yr’s +) lambs have a lower viability, most probably due to less effective immune system.
Feeding of lambs in a FEEDLOT

Dr. Vlok Ferreira, National Technical Manager, MOLATEK, P.O.Box 47, Malelane. 1320. RSA

The finishing off of lambs in a feedlot enables the farmer to extend his business vertically. Natural grazing is saved by removing the lambs from the veld, enabling the farmer to keep more breeding ewes. Success will however be obtained by good management and a balanced diet for the feeding of lambs in a feedlot to maximise profit.

The economical side of feeding.

Lambs will perform well on a balanced ration if the facilities are good, the management sound and health conditions outstanding. Rounding off lambs will ensure a better price per kg, better feed conversion and a faster capital growth on investment.

Besides the above, the ewes will benefit in condition and be ready for conception if the lambs are taken away at an early stage, thus saving grazing.

The ewe will use the natural grazing more profitable than what the lamb can use for meat production.

Earlier weaning of lambs will allow the ewe to regain her optimal weight sooner, resulting in improved reproduction rate. It was established that the ewe will increase lamb production between 1 to 1.5% for every kg weight gain in her own condition during mating.

The profitability of a feedlot will depend mainly on management and the quality of the ration.

Profitability in a feedlot can only be determined if continuous recording on the intake of the ration, the price of the ration, meat price, the beginning price of lambs - if they were bought in, and the conversion rate of feed to meat (this means the kg food intake to increase 1kg of weight gain) and any deaths must be in the calculation as well. With the formula in table 1 you can determine the gross profit over feeding costs.

The performance of lambs in a feedlot will depend on their genetic background, type lamb, age, condition of lamb from mother (milk production) as well as the condition and feeding of the ewe during the last 5 weeks of pregnancy. A heavy, weaned lamb will therefore do better to extend his business vertically. Natural grazing is saved by removing the lambs from the veld, enabling the farmer to keep more breeding ewes. Success will however be obtained by good management and a balanced diet for the feeding of lambs in a feedlot to maximise profit.

Quality of feed:

Good quality fodder is very essential for profitable feedlot performance. The best production of quality meat by lambs will be obtained from better quality protein which will be available from a by-pass protein source (e.g. Prime gluten and cotton oil cake) and therefore be absorbed in the small intestine where it will be subject to enzymatic digestibility. This will result in additional essential amino acids available in the small intestine where absorption of amino acids takes place.

The inclusion of a high quality protein source like (prime gluten or an oil-cake product) in a feedlot will therefore have a positive influence on the biological performance of the lamb.

For the best results in the feedlot, top quality fodder is essential and the ration should be well balanced. The demand for B-vitamins in fast growing animals is bigger than what the micro-organisms can produce. The mineral demand is also higher and should, like the vitamins, be supplied through the ration.

Finishing rations must also have a high energy level because the energy level will determine the tempo at which the other feed ingredients will be utilized in the metabolic process, thus regulating the growth tempo.

As energy is about 70% of the cost of the ration farmers often make the mistake to cut cost by lowering the energy level. Lowering energy levels will result in weaker growth rates and performance, which will result in higher costs per kg meat produced. This can increase costs by 25% to 30%.

Feedlot adaptability and feeding:

Sheep perform better if they are prepared correctly. Mature sheep must be inoculated against Pulpy Kidney and Pasteurella 4 weeks before and again upon entry if they were never treated before. Animals treated before should be treated again 2 weeks before entry.

All animals must be treated for internal, and if necessary for external parasites. If any eye infection is detected all animals should be treated because flies will spread the disease.

It is important to group animals of the same age, size and sex’s together for maximum performance.

Lambs destined for a feedlot will perform better if they were subjected to creep-feeding before weaning to minimise weaning shock. They will then adjust quicker to a complete ration.

To minimise possible diarrhoea it will be better to phase them in slowly over a longer period to the complete ration. See the ration for feedlots at the end of this article.

During the period of feeding 10% of the group average of animals should be weighed to establish the growth rate.

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and to determine whether the animals are performing according to weight expectations. This means that a reliable scale is essential for accurate statistics.

It is of utmost importance that the animals should be fed a few times per day and that all the food has been eaten before the next fresh mix is added. With small portions more often the intake will be higher and 1kg of ration can be saved for every kg meat produced. Sheep are very sensitive in taste and smell and even spittle will put them off. They should not be able to tramp or urinate on the ration.

The length of the feeding program can be established by taking the average weight of the animals needed at the end of the period minus the average weight at intake. Divide this sum by the ADG (average daily gain) that should be achieved to get the amount of days in the feedlot. For example; the end weight wanted is 45kg, the entry weight was 30kg and the expected daily growth (EDG) is 0.3kg then the period will be 45-30:0.3=50 days.

If lambs were trained through creep-feeding and subjected to good mothering qualities, the time in the feedlot can be reduced as the average intake weight will be higher and the initial growth rate will be faster.

The amount of ration that will be needed per animal can also be calculated. Take the ADG of 0.3kg multiply it with the amount of ration needed to increase the weight by 1kg (4,5kg to 5,5kg of ration depending on the quality of lamb and ration) and multiply it with the amount of days (50). This means that 0.3x4.5x50 = 67.5kg of ration to reach the target weight per animal.

It is important to use the same ration composition during the entire feeding phase.

An ionophore is included in the composition to minimise any upsets in the digestibility of certain grain rations thereby increasing growth to create better profit. Vitamins and minerals increase stress and disease resistance and also increase growth and feed conversion. The Vitamin combination must contain Niacin (a B-Vitamin). Make sure to include a growth stimulant implant, if it is lawful. This can increase the growth of lambs by 10 -15%.

Facilities:

Success of a feedlot is dependent on the facilities. To minimise problems like foot rot and ammonia inhalation, it is important to have good drainage. It is important to have the feedlot built on a slope and in an east-west direction to have maximum drainage and shade available during hot or rainy days. Roofs above troughs must be designed to lead water away from the crucial areas.

An area of 1,5m² to 2,5m² per sheep is required on open area feedlots and on a grid floor under roof it can be 0,4m² to 0,7m² per sheep. When more than 50 sheep are kept per pen, the shy ones will suffer and spotting individuals needing attention, will be very difficult.

Shade in feedlots is important because the metabolic process in the sheep increases body temperature. Good ventilation is important as the inhalation of hot air decrease the cooling process resulting in poor feed consumption and weak performance. Shade of at least 0.5m² per sheep will be required. Shade areas must be removed from the feeding area. Be careful not to have large overhanging roof areas at the feed troughs as this will result in sheep lying down there and interfering with other sheep that want to eat.

Feeding troughs must be designed not to allow sheep to enter the troughs, tramp on the ration or urinate on it. Enough space must be allowed for animals to stand and eat. Horizontal control of the opening at the feed trough is better than vertical bars and it must accommodate only the head and neck of the sheep to prevent them climbing into the trough. Make sure that the feed flow is constant and keep the feed fresh. Also design the facilities in a manner that they can’t climb on top of the feeding troughs. Although trough space of 100mm per sheep will be enough, it can be increased to 300mm per sheep, which will improve adaptation to the feed phase.

Self feeders are not a good option in feedlots because of the fresh-ration idea. It will be noticed that sheep which are really fed to capacity will come again to eat if fresh feed is offered. At least three times a day and more is the suggestion.

Another important aspect is fresh, clean, cool water. Position the drinking troughs as far as possible away from the feeding troughs to minimise contamination of the water with the ration. Water can become sour and will have a negative effect on the intake, clean the troughs regularly. Be careful of a too large trough to prevent the wastage. A too small trough is not good either - water will become hot. Enough water must be available if many sheep have to drink at the same time. The position of the trough, with good drainage is important (to prevent a parasite paradise) and not under the shade cloth as animals will pass their droppings in the water.

Feedlot diseases:

Losses of 0.5% and more is unacceptable and can ruin your profits. “The eye of the Master fattens the flock” is a very true saying and inspections on the health and general conditions must be a high priority. The following is the most common problems in a feedlot:

Eye infection is one of the most common problems which retards growth. This is spread by flies and can be controlled to an extend by controlling the fly population. Eye infection can be treated with an eye powder; one or two drops of oxytetracycline or even blue udder antibiotic ointment, which is used in the teats of cattle for mastitis. The best is to treat this problem daily until cured as this will retard the animals performance.

The next is acidosis which will also retard the growth. The animal will become lean very quickly and it can lead to death. Watery diarrhoea occurs due to excessive intake of concentrated feed or inadaptability to the diet. The mucosa in the mouth is dry, the eyes are sunken and the animal walks with stiff legs. Their hooves (especially the front legs) are aching because of laminitis. To prevent this 1% of bicarbonate of soda or feed-lime can be included in the ration. Sick animals can be treated by feeding dry hay and dosing with a mixture of bicarbonate of soda and water (250g/500ml water).

Coccidiosis is another problem in feedlots (coming from a bacterial infection, a sulphur antibiotic injection will
help to cure this). Coccidiosis will retard growth and animals can die. The symptoms are a slimy, bloody discharge. Most commercial rations and or mineral/vitamin packages contain anti-coccidiosis ingredients.

Another problem in rams and wethers is stones in the bladder (also called kidney stones) and can lead to death. This happens if the balance between calcium and phosphor is in-correct or the phosphor contents is more than 0.23% of the ration. The ratio must be greater than 2 parts of calcium to 1 part of phosphorus. Kidney stones can also prevented by adding 1% ammonium sulphate to the ration.

Foot rot is also a possibility if conditions are wet and dirty. Animals can walk through a foot bath with a 5% zinc sulphate composition every day to prevent this. Hoof trimming can also help but be careful not to cut hoofs too short as infection will then be set in. Infected animals can be injected intramuscular with oxytetracycline. (Care should be taken not to market these animals for at least two weeks after the last injection was given for health safety of the consumer).

Pasteurella (coughing animals) is also a problem and can cause death. This can be mainly prevented by inoculation and if evident treated with a long acting antibiotic. (Usually a sulpha antibiotic will do better because of the better penetration through the mucous membrane).

Chlamydia-infection causes the knees and hocks of the animal to swell and will cause retarded growth. This is due to a shortage of fibre in the ration causing animals to nibble on trampled dung. This can be prevented by making less palatable hay or straw available in small amounts. Lucerne hay can also be given in small amounts (50g) per sheep per day extra.

### Table 1:

To determine the Gross Marge in a feedlot:

**Formula:**  

\[ \text{GM} = \left[ \frac{A \times (B-C) + D \times (B-E)}{V} \right] - V \]  

- **GM** = Gross Marge (R/lamb) R can also be $ or any currency  
- **A** = Weight gain in feedlot (kg/lamb)  
- **B** = Estimated income (R/kg of live mass)  
- **C** = Feed cost (R/kg weight gain in feedlot)  
- **D** = Weight of animals at beginning of project (R/lam)  
- **E** = Original value of animal price (R/kg live mass)  
- **V** = Value of the losses (R/lam at selling)

Mixing instructions and amounts with a concentrate as supplied by MOLATEK

<table>
<thead>
<tr>
<th>Mixing instructions*</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molatek sheep fattening concentrate kg</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Molatek molasses meal kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Grain kg</td>
<td>550</td>
<td>400</td>
<td>600</td>
<td>650</td>
</tr>
<tr>
<td>Hominy Chop kg</td>
<td>-</td>
<td>150</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wheat bran kg</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mealie-cob meal kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alphalafa (Lucerne) kg</td>
<td>250</td>
<td>200</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Roughage kg</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Total kg</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

*The mixing relation of the above diets is as fed on an ad lib basis.*

The Mixture and Feeding:

- Mill roughage with 12 mm sieve if diet is fed in milled form;
- Maize can be replaced partially or in full, with small grains or hominy chop, but the inclusion of wheat must be limited to 20%.
- Diets 1,2 &3 is especially for cubing.
- Foot rot is also a possibility if conditions are wet and dirty. Animals can walk through a foot bath with a 5% zinc sulphate composition every day to prevent this.
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<td>-</td>
</tr>
<tr>
<td>Grain kg</td>
<td>550</td>
<td>400</td>
<td>600</td>
<td>650</td>
</tr>
<tr>
<td>Hominy Chop kg</td>
<td>-</td>
<td>150</td>
<td>-</td>
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<tr>
<td>Wheat bran kg</td>
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<tr>
<td>Mealie-cob meal kg</td>
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<tr>
<td>Alphalafa (Lucerne) kg</td>
<td>250</td>
<td>200</td>
<td>100</td>
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<tr>
<td>Roughage kg</td>
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<tr>
<td>Total kg</td>
<td>1000</td>
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*The mixing relation of the above diets is as fed on an ad lib basis.*

The Mixture and Feeding:

- Mill roughage with 12 mm sieve if diet is fed in milled form;
- Maize can be replaced partially or in full, with small grains or hominy chop, but the inclusion of wheat must be limited to 20%.
- Diets 1,2 &3 is especially for cubing.
- Foot rot is also a possibility if conditions are wet and dirty. Animals can walk through a foot bath with a 5% zinc sulphate composition every day to prevent this.
- Hoof trimming can also help but be careful not to cut hoofs too short as infection will then be set in. Infected animals can be injected intramuscular with oxytetracycline. (Care should be taken not to market these animals for at least two weeks after the last injection was given for health safety of the consumer).
- Pasteurella (coughing animals) is also a problem and can cause death. This can be mainly prevented by inoculation and if evident treated with a long acting antibiotic. (Usually a sulpha antibiotic will do better because of the better penetration through the mucous membrane).
- Chlamydia-infection causes the knees and hocks of the animal to swell and will cause retarded growth. This is due to a shortage of fibre in the ration causing animals to nibble on trampled dung. This can be prevented by making less palatable hay or straw available in small amounts. Lucerne hay can also be given in small amounts (50g) per sheep per day extra.

### Table 1:

To determine the Gross Marge in a feedlot:

**Formula:**  

\[ \text{GM} = \left[ \frac{A \times (B-C) + D \times (B-E)}{V} \right] - V \]  

- **GM** = Gross Marge (R/lamb) R can also be $ or any currency  
- **A** = Weight gain in feedlot (kg/lamb)  
- **B** = Estimated income (R/kg of life mass)  
- **C** = Feed cost (R/kg weight gain in feedlot)  
- **D** = Weight of animals at beginning of project (R/lam)  
- **E** = Original value of animal price (R/kg live mass)  
- **V** = Value of the losses (R/lam at selling)

Mixing instructions and amounts with a concentrate as supplied by MOLATEK

<table>
<thead>
<tr>
<th>Mixing instructions*</th>
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</tbody>
</table>

*The mixing relation of the above diets is as fed on an ad lib basis.*
Presently technology changes very rapidly - in fact, so rapidly that if the transportation industry evolved at the same rate, one would be able to travel from South Africa to New York in one minute, and it would cost you one dollar! (For the pedantic: It takes 14 hours today, and the cost varies between US$550 and US$1850 depending on the class of travel.)

The tendency nowadays is to have the compulsory “paradigm shift” line: unless you think differently, as a farmer, you will become marginalized fairly soon due to the advances others can make, utilising the technology available.

For example, compare the current labour costs to the computer costs you incur in keeping track of your entire flock: For a fairly small amount, one can buy a computer that will be able to serve your farm timelessly and efficiently for years to follow. In reality, a good computer costs the same as an average ram will cost you, but returns on your investment may be several times the cost of a ram.

In the olden days, judgement calls were made on “Gut-feel” vs. statistical analysis, simply because such analysis was only available to the rich and those close to the academic institutions. Now, any farmer with a computer can utilise the same analysis on a computer, relatively easily and cheaply.

Administration and Finance are areas that normally consume time, effort and are generally neglected by the farmer. With a computer program, these chores become both easy and more rewarding than ever imagined.

Three very important aspects in the business of a farmer are Knowledge, Organisation and Selection. For a farmer, these aspects are equally important in the way the enterprise is managed. Without the use of a computer, all three aspects become a manual chore, prone to human error, and probably not worth the effort.

If the resilient farmer who uses a computer in order to be able to concentrate on his main task can do so more profitably than his counterpart, there will soon be no more use for manual labour, as technology advances too rapidly.

With the advent of the “online community” the very business of Marketing becomes manageable from your chair. Many “big deals” and “world firsts” have been made possible by the ability of people to market themselves and their ideas to a worldwide audience via the Internet. Can you imagine the benefits of tapping into the pockets of more than 60 million people worldwide, rather than just displaying a banner that your local 1000-people strong community can read? The opportunities here are incredible, and they are all there for the taking. Many people do not realise that the Internet has already changed the way people do business. They are still waiting for an announcement regarding this phenomenon, which will never come. Once you realise what is happening in Cyberspace, you may already have missed the opportunity to change. My personal opinion is that it is never too late to change, and that one should immediately set out changing your course to align with the winds of the future.
Programs for stud breeders

Programs are available to stud breeders, which help to capture the essential data of your flock, while it takes care of extracting the most important data for personal use. In this way you can concentrate on being a good farmer, making it easier for you to improve your disposition for the price of a couple of slaughter lambs...

Programs are designed to make life easier. They help to input information, to correlate this information and to retrieve the most relevant lists and details in an easy and straightforward manner. They save a lot of time and trouble by helping you identify trends and selection information easily.

While there are many programs out there, they are not all equal. Use your own initiative to establish which works for you, and which is the most time-efficient and user-friendly program for your requirements. Many people can be put off by the myriad of programs available to them, and this may lead to bad decisions, which can prove to be more dangerous than a bad program. Rather use an old program well, than experiment with every new one on the market.

Eventually you will find that you are spending more time on the program than on actual farming! It is important to know that the Computer and the Programs are just as much a tool as your shearing scissors or your dosing gun.

Most programs run under the most popular operating systems, since it is easier to develop programs for these. Most people use the PC, while there are others that use the Macintosh and even Linux or Unix as an Operating System.

While there is huge debate about which is the better, a farmer should choose the one most suited to him and abide by this. Like fashion trends, these systems come and go, so use the instrument you prefer which suits you best. Obviously there will be a larger selection of programs available for the PC than the Macintosh, so this should easily settle any disputes.

Depending on the amount of people using these programs, there will be a need to upgrade them regularly. No programmer will write a single, involved program for a minority of breeders located only in one corner of the Globe. You may want to think about the economies of scale by making use of the programs developed for worldwide use.

You will probably find a program written for every conceivable need. This can be found free of charge on the internet. Keep your eyes and ears focused, and you will find free information suited to meet all your requirements.

Record Keeping & Performance Testing

Maximum return on investment

In order to achieve the maximum return on the investment you have made through embryos, rams, ewes, etc. it is absolutely imperative that you keep records and test your flock for performance in all areas. Without this, you will just be another farmer trying his best to manage an enterprise without any expertise.

Genes are not visible, so record results

The only way to spot the good the bad and the ugly is to keep record. You will be able to distinguish between good and bad animals, relatively easily, by measuring performance. Due to this, you will avoid having passengers on board that are just grazing on your profits whilst not adding any real value.

Slow process that eventually pays

Do not expect record keeping and performance testing to yield results immediately. Consider the way you divide your farm into camps (paddocks), build a dam or plant a tree, in due course you will reap the benefits and find it was worthwhile.

Purchasing of rams - “Half the Flock”

The saying that the ewe is half the lamb and the ram is half the flock is quite true. For this reason, you have to be extremely careful in your selection of Ram material to be introduced into your flock. This will also be an expensive part of your capital outlay, and must therefore be a serious decision that you undertake when having done all your research. Alternatively when you sell material and you can prove, by record and performance data that the animal has a proven record, to install trust.

It is notably important that not only Rams need to have sound genealogy: if your stud ewes do not show a proven track record, you may find yourself in a position of only being an occasional breeder of good ram material.

Handheld Computers

With technology ever changing and pressure from buyers demanding more information on top priced animals, breeders have to give more sound information. For this reason breeders prefer to show potential buyers breeding statistics at auctions and shows. The notebook computer is ideal for this and can also be used anywhere on the farm. See article on handheld computers versus notebooks.

The Future Belongs to the Honest Breeder

With all the conveniences at hand, a dishonest breeder, selling bad material, thus confusing young breeders will soon be discovered. If you keep records and performance data, you do not only protect yourself and your good reputation, but also those that depend on your expertise when buying a ram.

From 20 to 20000 - Technology will Scale:

It does not matter if you have only 20 sheep or 20000 - today's technology will scale easily to accommodate even the most demanding farmer. A program will hold as much information as your computer can accommodate, so there are no real limits.

The Internet, Studbook and Benchmarking

With the intense growth of the Internet as a communications and marketing medium, it can guide the farmer towards automated online retailing. The Studbook program in South Africa already allows for data of horses and pigs to be submitted directly through the Internet. It is becoming almost impossible to sell animals without
the ability to judge animals on a pre-agreed scale. This is called benchmarking.

**Information to capture for Dorper 21**

Lamb Number: JJ and four numbers (Your stud or KKN number is also part of this)
Lamb Birth Date: 24/02/05
Lamb Gender: Ram or ewe
Lamb Birth Status: Single, Twin etc.
Ewe & Ram (Sire) Number: 970021/980098
Date Weaned: 24/05/06
Wean Weight: 34kg

This is just an example, but in this information is stored the possibility in doing index calculations, benchmarking, stud trees, lists of strong producers vs. weak producers and much more. There are many programs on the market today, but very few that allow for this type of control and refined access to information. Remember that being informed makes you powerful - not being informed makes one weak, and unable to compete with those having good systems.

**Dorper 21 with Performance and Progeny Testing**

The Dorper Breeders Society has started an opportunity for breeders to have their data officially processed by the ARC. Although this system has been present for several years it has become compulsory for breeders to join Dorper 21 if they would like to participate on National auctions from 2007.

The future belongs to the breeders who can capture data and have it approved. Record keeping programs play an important part in this regard. To send data to the ARC from a good program is so easy that one wonders why it wasn’t done years ago. If you are on the internet and linked to the ARC office your data can be processed within 24 hours. Our gratitude goes to the programmers of these record keeping programs for the user friendliness of their products.

Some programs are even more advanced; corrective mating can now be done from the office through the program. One can send certificates with photos, pedigrees, advertise embryos and semen around the globe by the touch of a button? For more details on handheld computers versus notebooks and programs see the articles in this worldwide magazine “Dorpers into the new century”

Programs have become so sophisticated lately that one merely selects the lamb’s numbers, and the program duly collects all the other information required from the updated program to be sent by e-mail.

*Be a winner; join record keeping and performance testing.*

**THE WORLDWIDE REVOLUTION in Technology and Mechanising**

BREEDPLAN International provides its Livestock Register and related software to breed Associations world-wide. It is the most widely used animal Registry system in the USA, UK, Australia, Canada and New Zealand. Its use is increasing in countries such as South Africa where over 46% of beef breeders now use the system. The SA Holstein Society has also recently contracted to use the system. All twenty societies in Namibia now use the BREEDPLAN system.

When you attend a Dorper course you will find out more about electronic ways to help you. The new advanced P/P training CD available from the SADBS provides more than the ordinary.
BREEDPLAN, Rudd scales and I are hard at work to put in place management systems that will make recording keeping an easy exercise thus saving time and money. For example, a few years ago it was a dream to class animals electronically. Now it has become a reality for many international producers.

The HerdMASTER program that is developed by BREEDPLAN in association with myself is fully supported in South Africa. The program compliments the Dorper 21 and ARC systems. This program will not only help farmers progress to the next level through record keeping and performance testing, but put their herds at a distinct advantage genetically. Through linear analysis and sound figures we will be able to match the best looking animal with the best EBV’s.

What has been achieved:

- The ability to program a computer to classify animals through an electronic ear tag system into a certain category is now a reality.
- The ability to work with animals in a crush and for the animal to be held by an automatic catcher.
- The ability to classify animals with a computer into different weight groups is happening.

...and much more.

Make sure you know where you fit into the global picture by being able to benchmark yourself against other breeders. This new development will ensure that you remain at the leading edge. Do not allow technology to advance beyond your reach. As the saying goes, “Time and tide wait for no man”

Be part of this new exiting development and remain a global leader. This can only happen if you are prepared to accept new technology. Be a proud leader for this beautiful Breed the “Dorper” around the Globe.

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### Compulsory Brucella Ovis control scheme

**FOR DORPERS & WHITE DORPERS**

1. **1. ALL RAMS** (in use and for sales) 10 months and older of breeders who sell at official sales, must be tested.

2. Compulsory testing under the scheme consists of:
   - Clinical palpation
   - Serology (complimentary binding test)

3. Semen tests are recommended, but is not compulsory under the scheme

4. A breeder who’s rams have tested free of Brucella Ovis twice with a minimum time span of 2 months (60 days) and a maximum of 1 year between tests (palpation and serology) receives a certificate which specifies that his flock is free of Brucella Ovis.

5. All infected rams must be culled to declare a farm FREE of Brucella Ovis

6. In exceptional cases positive rams can be isolated and retested inclusive of semen tests namely (a) microscopy for neutrophils and sperm morphology (b) Stamps couloring

7. A Flock Free of Brucella Ovis must be re-tested every second year

8. An infected flock can be re-tested every two months until two consecutive tests of the whole flock (with intervals of a minimum of two months and a maximum of one year) proves negative. The flock is then certified free of Brucella Ovis and must be re-tested every second year.

**8.1 Should an infected flock take animals to a sale those specific animals must be re-tested within 6 weeks before the sale by:**

- Clinical palpation
- Serology (complimentary binding test)

9. Test Results to be furnished to the owner and the Society

**WARNING:** Should you purchase or use rams from a positive tested flock you run the risk of infecting your negative flock

10. Certification can be done only by a State Veterinarian but tests can be executed by a Private Veterinarian, Animal Health Technician or a State Veterinarian. Veterinaries must please write a note with the results stating that the flock has tested clean for Brucella Ovis.

11. All infected rams must be culled to declare a farm FREE of Brucella Ovis

12. In exceptional cases positive rams can be isolated and retested inclusive of semen tests namely (a) microscopy for neutrophils and sperm morphology (b) Stamps couloring

13. A Flock Free of Brucella Ovis must be re-tested every second year.

14. An infected flock can be re-tested every two months until two consecutive tests of the whole flock (with intervals of a minimum of two months and a maximum of one year) proves negative. The flock is then certified free of Brucella Ovis and must be re-tested every second year.

15. After the two year period it is only necessary to obtain one clean test again to receive the next certificate which will be again valid for two years

16. It remains the individual’s choice, should they so wish, to test each group of rams for sales in spite of having a clean flock certificate
NB: Dr Pienaar proposes:-

Farmers with different breeds on their farm:
• Should rams of other breeds come in contact with the Dorper rams then all these rams MUST be tested clean of Brucella Ovis... or
• The particular farmer must submit a declaration to confirm that the Dorper rams do not have any contact with the other rams.

Farmers with different breeds:
• ALL RAMS used, sold, stud, flock etc. must be declared clean of BRUCELLA OVIS.
• Farmers with different farms must also declare that the farm where rams were not tested, is a totally separate unit from his stud and that the rams never come in contact with one another.

Breeders who have not got Clean certificates for their farms:
• RAMS MUST BE TESTED TWICE BEFORE EVERY SALE WITH A MINIMUM OF 30 DAYS AND A MAXIMUM OF 90 DAYS BETWEEN TESTS AND THE LAST TEST MAY NOT BE LONGER THAN 90 DAYS BEFORE THE SALE. PROOF OF THESE TWO TESTS MUST BE FURNISHED AT THE SALE.

Unreliable test results.
• We have to realize that mistakes can sneak in with any laboratory tests and Dr. Pienaar would suggest that the test be repeated where there is the slightest doubt - especially when rams suddenly and unexpectedly test positive. Let us rather re-test before criticizing the legality and reliability of the test in public.
• Farmers must ensure that rams are not vaccinated when too old with Rev 1.

INOCULATION MUST PREFERABLY BE DONE BEFORE THE AGE OF 4 MONTHS.

The scheme of eradication which was initiated by the Society has had excellent results as there is a country wide decline in Brucella Ovis cases. We had compliments from Australia for the co-operation farmers are giving to eradicate this disease. Please test and keep your flock clean.

WE ALSO URGE COMMERCIAL FARMERS TO INCORPORATE A BRUCELLA TEST IN THEIR ANNUAL MANAGEMENT PROGRAM - IT IS TO NO AVAIL IF THE STUD BREEDER TEST BUT HIS NEIGHBOUR IS INFECTED. LET US TAKE HANDS AND KEEP OUR FLOCKS IN SOUTH AFRICA CLEAN.
Treatment and technique

It is important to realise that the product meat, which is eventually eaten by consumers, is the end product of a long process. Animal breeders and producers take care of the living animals, which are then slaughtered at abattoirs and cut up, processed and sold by meat traders as meat that consumers buy, cook and eat. Although this research was done on beef, it is also applicable to mutton and lamb, except for size and weight. This process can be summarised as follows:

Meat marketing chain

1. Production
2. Slaughtering
3. Trading and processing
4. Consumption

In each of these phases, various factors can affect one or more meat quality characteristics.

Concept of meat quality

The word “quality” has a complex definition. In general it refers to the degree of excellence of a product. In the livestock and meat industry, the word “quality” is interpreted differently by various sectors:

- Producers consider quality in terms of hair colour, bone structure, hide thickness and growth ability of the living animal.
- Meat traders and processors assess quality according to meat yield, fat cover, colour, muscle firmness and processing properties.
- Consumers again think of quality in terms of tenderness, juiciness and flavour of the cooked meat in addition to it being clean, wholesome and nutritious.

In order to define the above total concept of meat quality it is necessary to identify the various elements or meat quality characteristics that combine to form the total concept of meat quality.

These characteristics are:

- Appearance of meat
- Palatability
- Nutritive value
- Processibility
- Hygienic state
- Shelf life

Appearance (What the consumer and trader perceive)

- Amount of muscle, fat and bone
- Muscle colour
- Fat colour
- Muscle texture

Palatability (What the consumer perceives)

- Tenderness
- Juiciness
- Taste
- Flavour

Nutritive value (What the consumer assimilates)

- Proteins
- Vitamins
- Minerals
- Fat
- Moisture
- Energy

Shelf life and hygienic state (What everyone requires)

- No microbes
- No odour
- No colour change
- No slime

Processibility (What the meat processor requires)

- Ability to retain water
- Ability to process
- Attractive colour
- Ability to retain colour

Composition of carcasses and meat

An average beef carcass contains 15% bone, 65% muscle and 20% fat, that is completely clean bone (with no sinews or muscle attached to it), clean red muscle (with no fat on it) and all the fat (that is the fat around as well as inside the muscles).

Muscles consist on average of:

- 75% water
- 18% protein
- 3% fat
- 1% minerals
- 3% other organic components

It is the task of the meat trade (which includes meat cutting technicians) to cut up carcasses and meat in such a way as to derive maximum benefit from the carcasses and meat. This maximum benefit should also be passed on to the consumer. If satisfied with the tenderness, juiciness, taste and flavour of the meat, the consumer is sure to return to your shop.

Some of the meat quality characteristics can be influenced by various factors. Before enlarging on this, it is necessary to explain how meat is derived from muscle.

Conversion of muscle to meat

The part of the muscle that has a red colour consists of the proteins actin and myosin. In living animals these...
proteins contract and relax, thus causing movement of the body parts. Also in the muscles of living animals there is a compound called glycogen, which provides the energy required for muscle contractions.

When an animal is slaughtered, the muscle glycogen is converted into lactic acid. The actin and myosin proteins contract and render the muscles rigid, which condition is known as “rigor mortis”. The stronger the contraction, the tougher the meat will be. After some time in the chillers (24 hours and more), actin and myosin proteins are separated by certain chemical compounds called enzymes, which are also present in the muscle. At this stage the muscle has been changed into meat. Meat eaten in this state would be tenderer than in the rigor mortis stage.

Connective tissue

Apart from (red) muscle tissue, muscles also contain white connective tissue (sinew). The most important protein, which occurs in this white connective tissue, is known as collagen. Depending on the age of the animal this collagen can also cause meat to be tender or tough. Collagen in meat from young animals is rendered tender by the application of heat, but remains tough in meat from older animals.

Colour changes in meat

The red colour of meat is caused by another protein called myoglobin. When fresh meat is cut (after 24 hours’ chilling) the purplish red myoglobin comes into contact with oxygen in the air and changes to a cherry red colour, which accounts for the attractive appearance that appeals to consumers when buying meat.

If the meat is exposed to the air too long, it acquires a greyish brown colour, which renders it less attractive. Hence it is important to retain the bright cherry red colour by packing meat in material that excludes oxygen. The meat of young animals contains less myoglobin than that of older animals and therefore has a lighter colour than that of older animals.

Key nutrients in meat:

1. Proteins

The name protein comes from a Greek word meaning “of prime importance”. Sometimes called the building blocks of life, proteins supply the amino acids necessary for growth and the formation of new tissues. This tissue building function is also important in healing wounds and burns, and in aiding recovery from surgery.

Proteins maintain body structure and keep the body in repair. The thousands of enzymes produced in the body for the purpose of metabolism are protein based. Many of the hormones are protein, while hemoglobin, which carries oxygen to the cells and carbon dioxide to the lungs, is protein and iron combined.

Proteins also help to regulate water balance in the body, maintain blood neutrality, and provide energy (although carbohydrates and fats are the principal sources for producing energy).

The quality of protein in foods varies and is determined mostly by the kinds, proportions and amounts of the amino acids present. There are some 22 amino acids of which 13 are manufactured by the body. The other 9 must be supplied ready made in the foods we eat and are therefore referred to as the essential amino acids.

Proteins that contain all the essential amino acids in proportions most useful to the body are described as “complete” or “top quality” protein, as found in beef. Other dietary protein sources are fish, eggs, milk’, dried beans, oats, soya bean products, peanuts, maize and gelatine.

2. Vitamins

Vitamins are needed for proper growth and protection from disease and poor health. The most important vitamins are the B group, and vitamins A, C and D. Beef is an excellent source of the 8 vitamins and ranks as the principal dietary source of most of them. Pork is even richer in B vitamins than beef, lamb or mutton.

Included in this group are thiamine, which aids in the digestion of food, riboflavin, which combines with protein to promote growth, and niacin, which teams with thiamine to help promote a healthy nervous system.

Vitamin A is found only in foods of animal origin, and liver is by far the best source. However, yol low and green fruits and vegetables contain pigments, which are converted by the body into vitamin A, and the most valuable of these are carrots, sweet potatoes, winter squash and spinach. This fat-soluble vitamin is essential for proper growth and for the general maintenance and repair of body tissues. It is also very important in the formation of sound teeth and in helping maintain normal vision.

Vitamin C, also known as ascorbic acid, helps maintain healthy gums, bones, tissues and blood. It plays an important part in making the “cement” that holds the body cells together, and also helps the body resist infection and heal faster after wounds or fractures. Citrus fruits are one of the best sources though many other fruits and vegetables contain significant amounts. Liver is a good source of Vitamin C. It is important to note that Vitamin C cannot be stored in the body, so a supply is needed every day.

Vitamin D, which aids calcium and phosphorus in building bones and teeth, presents no real dietary problem. Adults leading a normal life are expected to get all the vitamin D they need from sunlight, while fish, egg yolk and liver contain small quantities.

3. Minerals

Iron. The most important mineral - and the most difficult diet requirement to meet - is iron. Iron teams with certain amino-acids in protein to build and maintain the hemoglobin of blood, which carries oxygen to the body cells. The need for iron is highest for teenage girls and boys and for women during pregnancy and lactation. Women generally need more iron than men due to blood loss during menstruation.

The best source of iron is liver, with an average serving supplying more than the recommended daily intake. Other good sources are oysters, heart, veal, beef, lamb, mutton and pork. Beef, in fact, not only supplies a generous portion of iron but also helps the body absorb more iron from other food sources.
Calcium and phosphorus. The second most important mineral is calcium, which, with the help of phosphorus and vitamin D, is primarily responsible for the proper formation of bones and teeth. Calcium and phosphorus are also essential for the work of muscles and for proper functioning of the nervous system.

Calcium is about the only key mineral not present in beef - the Milk Group is your best source - but phosphorus is abundantly found in beef and other meats.

Other minerals, sodium, potassium and magnesium are important to health, but it is generally believed that a diet sufficient in high quality protein is likely to supply enough of these three minerals. Copper is useful in the formation of hemoglobin, aiding in the utilisation of iron. Liver is a rich source of this mineral. Trace amounts of other minerals - cobalt, manganese, zinc and aluminium - are also found in meat, and by balancing meals with selections from all the main groups it should never be necessary to supplement either your mineral or your vitamin intake with pills unless specifically prescribed by a doctor for a definite deficiency or disease.

Factors affecting certain meat quality characteristics.

These factors are:

- In the animal production phase:
  - Age
  - Fatness
  - Conformation of the animal and its carcass
- In the handling of animals before slaughter:
  - Long-term stress before slaughter
  - Short-term stress immediately before slaughter
- In the handling of carcasses and meat during and after slaughter:
  - Delayed bleeding after stunning
  - Chilling of carcasses
  - Electrical stimulation of carcasses
  - Freezing of un-chilled meat
- In the trading and processing phase:
  - Ageing Size of carcass
  - Different cuts in a carcass
  - Tenderising machines
- In the consumption phase:
  - Cooking temperature
  - Cooking method

Animal production phase

Producers manage the breeding and production of slaughter stock. They decide on the breed of animals to use, the ration to be fed, and the stage at which to market the animal. At the marketing stage, the carcasses are graded according to characteristics such as the age of the animal, fatness and conformation of the carcass.

1. Age

The age of the animal affects the tenderness, colour and flavour of the meat. The meat of young animals is more tender and lighter in colour than that of older animals, whereas the meat of older animals has more flavour.

2. Fatness

The fattier a carcass, the less meat it contains. Yet, fat must be present since it adds to the juiciness, taste and flavour of the meat. Too much fat, however, is a waste - for both meat trader and average consumer. The meat of very lean carcasses (without fat) is not as juicy, tasty, and flavour-some as that of carcasses with just the right amount of fat.

Conformation refers to the shape of the carcass - whether it is flat or round. It was traditionally believed that carcasses with a round conformation yielded more meat than those with a flat conformation. This is not always correct. The amount of fat in a carcass influences its meat yield to a greater degree than its conformation. Carcasses with a round or very round conformation do, however, appear more attractive when exhibited intact in the hanging position.

Handling of animals before slaughter

1. Long-term stress before slaughter

Stress and exhaustion during transport of animals reduce the muscle glycogen. When the animal is slaughtered in this condition less lactic acid is formed and the meat becomes unattractively dark, firm and dry (DFD). Bacteria grow more readily and can cause bone taint in the deeper areas of beef buttocks. These processes reduce the shelf life of the fresh meat. The water-retaining capacity is good, however, and such meat can be used in certain processed meat products.

2. Short-term stress immediately before slaughter

Rough handling of animals immediately before slaughter affects certain meat quality characteristics. In pigs this stressful situation causes muscle glycogen to be used up very quickly. This leads to acid forms in the muscle very quickly. This leads to a condition referred to as “pale, soft and excudative” (PSE) pork. The fresh meat has an unattractive pale colour, is flabby and releases a lot of meat juice that is lost when the meat is packed, cooked or processed. Stunning pigs with a captive bolt pistol also produces this condition whereas electrical stunning does so to a much lesser degree. Meat of cattle, sheep and goats is not affected in this way when stunned by captive bolt pistol. In cattle and pigs, rough handling immediately before slaughter can cause the actin and myosin proteins in the muscle to contract more strongly than normally. If the animals are slaughtered in this condition, the meat can be tough - even if derived from young animals!
Handling of carcasses and meat during and after slaughter

1. Delayed bleeding after stunning

It is important than an animal is stuck/bled as soon as possible (within 30 seconds) after being stunned. Otherwise small blood-containing arteries burst, releasing blood into the muscular tissue. This is called blood splash. Meat of such animals appears unattractive and has a reduced shelf life.

2. Chilling of Carcasses

Carcasses are chilled after slaughter to inhibit the growth of micro-organisms present on the surface. At temperatures of over 7°C these micro-organisms produce slime and the meat gets smelly. At temperatures below 4°C these putrefying organisms grow much more slowly.

Chilling is therefore necessary to ensure a longer shelf life of the meat. Rapid chilling offers the commercial advantage of fast throughput and minimum weight loss due to evaporation and drip. Too rapid chilling of warm carcasses, however, causes the muscle proteins actin and myosin to contract, which renders the meat tough when finally cooked. This is called cold shortening. To guard against cold shortening the temperature of any part of the carcass must not be allowed to drop below 10°C within 10 hours after slaughter. Thereafter it can drop as low as 1°C. (Meat freezes at 0°C and this can affect other meat quality characteristics.) Cold shortening of muscles occurs mostly in beef and sheep carcasses. The thick fat layer on pig carcasses prevents them from chilling down too fast.

3. Electrical stimulation of carcasses

During the past few years the process of electrical stimulation of carcasses immediately after death has been introduced at abattoirs in South Africa. Carcasses are stimulated by being subjected to an electrical charge. This causes the muscles to contract and relax much more rapidly than usual. When such carcasses reach the chilling rooms there is no energy left in the muscles, hence they cannot contract and thus cause cold shortening and tough meat. The meat of electrically stimulated carcasses is therefore more tender than other meat. But while electrical stimulation prevents cold shortening and hence toughness in meat, it does not tenderise the meat!

4. Freezing of unchilled meat

If warm carcasses or meat are frozen shortly after slaughter, the normal process of rigor mortis does not set in and all chemical processes in the muscles stop. When such meat is thawed, the chemical processes recommence, causing the muscles to contract much more than normal. This also toughens the meat. This condition is known as thaw rigor.

Meat should therefore be frozen only after it has been chilled down to 4°C. Subsequent thawing should then be slow, by allowing the meat to thaw at 4°C and not at room temperature. If thawed at room temperature, the higher temperature causes more natural juices to filter from the meat. When cooked, this meat would then have a dry texture.

Trading and processing phase

1. Ageing

Ageing is a biological process that leads to the tenderisation of meat. As mentioned earlier, enzymes start break-

...ing down the actin and myosin proteins in muscles some 24 hours after slaughter. By keeping carcass in cold storage at 0°C - 4°C for 5 to 10 days, more enzymes are released which break down these proteins and tenderise the meat but not the connective tissue proteins in the meat. This tenderising process is known as ageing, also called ripening or maturing.

2. Size of carcass

Among carcasses of the same grade and fatness, the heavier carcasses generally have a higher meat yield than lighter carcasses. It is also easier to prepare good roasts and beef rolls from heavier beef carcasses (weighing more than 240kg) than from lighter carcasses (weighing less than 180kg). Because the larger carcasses chill down more slowly than smaller carcasses after slaughter, cold shortening does not affect meat tenderness as much as in smaller carcasses. Hence meat from the heavier carcasses is more tender than that of lighter carcasses.

3. Different cuts in a carcass

The muscle composition of different cuts varies. Cuts such as the shin and brisket contain connective tissue that is not as readily tenderised as that of the loin and rump. Different cuts of meat should therefore be cooked differently to derive maximum eating satisfaction, e.g. rump and loin can be grilled, while shin and brisket should be braised or stewed.

4. Tenderising machines

Tenderising machines break up the muscle as well as the connective tissue proteins. Such meat eats tender when it is cooked. Unfortunately the tenderising machine tends to break down the muscle structure to such a degree that it loses its original shape - in fact it tends to have the appearance of having been physically torn and damaged.

Consumption phase

1. Cooking temperature

Believe it or not, but the cooking temperature can also affect meat tenderness. Meat cooked to an internal temperature of 80°C (well done) is twice as tough as when similar meat has been cooked to 60°C (underdone). Also three times as much moisture is lost when cooked to 80°C, giving the meat a drier and shrunken appearance.

Remarks

Guidelines to ensure satisfaction when eating meat:

- Proper production management should be applied when animals are produced.
- Animals should be calmly treated when they are sent for slaughtering.
- Animals should be properly and humanely slaughtered.
- Carcasses should be electrically stimulated and chilled.
- Meat should be aged.
- Meat should be properly cut, treated and packed.
- Meat should be cooked at the correct temperature, using the correct cooking technique.
### TRAINING GALLERIES

<table>
<thead>
<tr>
<th>HD-01</th>
<th>HD-02</th>
<th>HD-03</th>
<th>HD-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-type head</td>
<td>Hollow forehead</td>
<td>Flat nose</td>
<td>Broad nose</td>
</tr>
<tr>
<td>A good example of an off-type head. Head too short, dewlap, no character, no crown and overall a dull type-cull it!</td>
<td>A good example of a hollow forehead. Be careful that you don’t confuse this with an overdone roman nose. A plus point in this example is the good eye protection and crown.</td>
<td>This hampers the ideal shape of the head and can be a restriction to normal breathing.</td>
<td>A good example of a strong nose with eyes widely spread, ample secondary development and a broad nose.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HD-05</th>
<th>HD-06</th>
<th>HD-07</th>
<th>HD-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong jaw</td>
<td>Roman nose</td>
<td>Plain head</td>
<td>Ennobled head</td>
</tr>
<tr>
<td>Notice the division between the upper and lower jaw. Be careful not to allow the bottom jaw to become too shallow.</td>
<td>A strong roman nose with good eye protection, beautiful secondary development, good crown and good size ears.</td>
<td>A very plain head with no character and too much white around the eyes. Brown hair colour on the face is undesirable.</td>
<td>A good example of an ennobled ewe head with good character. Desirable ears strong mouth and roman nose.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HD-09</th>
<th>HD-10</th>
<th>HD-11</th>
<th>HD-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ennobled head (front)</td>
<td>Six teeth</td>
<td>Broad nose</td>
<td>Feminine nose</td>
</tr>
<tr>
<td>The same head as HD08 from the front. The nose just right for an ewe to keep femininity.</td>
<td>Use teeth to determine age: 2-Tooth = 12-14 months 4-tooth = 18-20 months 6-tooth = 26-30 months 8-tooth (full mouth) = 36 months plus. Wear of teeth depends on the type of grazing.</td>
<td>The nose on this ram is very broad and it spoils type. If it spoils the appearance of the animal we discriminate by degree against it.</td>
<td>Look at the soft appearance of this ewe with good ears to accommodate type.</td>
</tr>
</tbody>
</table>
### HD-13 Off-type head
Compare this head to the previous ewe head and you will realise that this head falls way out of stud. Be careful that a drummer boy (sheep shearer) doesn’t make this head acceptable.

### HD-14 Feminine head
A good example of an ennobled head with good size ears.

### HD-15 Feminine head
The same head from the side. Nicely long and strong with the blaze going over the crown (past the horn-base) which makes it a P3 for colour.

### HD-16 Secondary development
A ram with a very masculine head. The dark portion in front of the eye amongst the pleats is called the old man’s eye. Eye protection could be better.

### HD-17 Off-type
This ram was culled at an auction because of this Persian type head. Usually this type of head has a shiny covering as well.

### HD-18 Shallow bottom jaw
This ram has a shallow bottom jaw. The breed standard of excellence states well fitted, deep jaws. This is not a cull but we can take note that we want it slightly stronger.

### HD-19 Undershot bottom jaw
Also called a parrot mouth. We allow 2mm short bite on adult animals and 3mm on lambs. This is quite a high inbreeding fault and should be strictly discriminated against.

### HD-18 Undershot jaw
See the difference of more than 2mm between the bottom and upper jaws which makes this animal a cull.

### HD-21 Perfect fit of teeth
The Breed Standards are very clear on this if we know what to look at. This is the perfect fit and very little deviation is allowed as shown in HD-22 and HD-23.

### HD-22 Max undershot allowed
We evaluate the undershot or overshot jaw by the fit of the teeth. The difference between this condition and HD-23 allows about 4mm from undershot to maximum allowed overshot.

### HD-23 Max overshot allowed
The Breed standards quote that the upper part of the inside of the cutting teeth must be in contact with the upper gum. This illustration shows exactly that.

### HD-24 Shedding teeth
If an animal is shedding its front teeth the adjacent teeth must be used to evaluate the fit. From the photo it can be clearly seen that the adjacent teeth fits outside the gum and makes the fit suspect.
This double row of teeth appeared normal from outside. When the mouth was opened to check the age, it was detected.

The Breed Standards state that the jaws must be strong well shaped mouth and well fitted, deep jaws. This fit is skew and will be a cull.

The misfit of the jaws can be clearly seen on the skew wear of the teeth.

This ram has a safe forequarter with legs slightly “X”. If legs are too much “X” and the body weight too much the pasterns tend to turn outwards.

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This double row of teeth appeared normal from outside. When the mouth was opened to check the age, it was detected.

The complete opposite forequarter to the previous one. The shoulders are loose and walking ability is very poor. This type of forequarter is undesirable and can only be a cull.

The same forequarter as we see it from behind. The loose shoulder can easily be identified.

With forequarters like this transferred to the offspring you can only imagine the birth problems. Remember that once the head and forequarter is through the birth-canal the rest of the lamb just drops out.

The complete opposite to the previous forequarter. With a forequarter like this there is very little space for the heart, lungs and organs to function properly, not to mention the shoulder chop size.

This X-leg we can notice that the pastern is twisting outwards. The twist on the bottom part is not always part of an X-leg and can be a fault on its own. Bad hoof trimming can also cause this.

A good example of X-Legs opening up from the knees downwards.

This can be the result of a shortage in the feeding program, mostly calcium. This however can also be the result of genetic make-up or inbreeding. Impaired walking ability is the biggest setback of this condition.
<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Image](image1.png) | **BR-01**  
*Barrel - short*  
This little ewe lacks in length. This shortfall is aggravated because of her very long rump. Body length is measured from the thigh to the breast. Barrel length is measured from the hipbone to just behind the shoulder. |
| ![Image](image2.png) | **BR-02**  
*Barrel - long*  
This lamb has both a long rump and exceptional long barrel compared to the one in BR01. |
| ![Image](image3.png) | **BR-03**  
*Strong loin*  
The front ram shows a strong loin (also called “eye muscle”) compared to the ram behind it. |
| ![Image](image4.png) | **BR-04**  
*Strong overdone loin*  
This ewe has a very strong loin and so strong that it appears to have a dip behind the shoulders, which is not true. |
| ![Image](image5.png) | **BR-05**  
*Weak loin/topline*  
When the loin muscle is weak the animal usually looks as if it is divided into different sections. |
| ![Image](image6.png) | **BR-06**  
*Well-sprung ribs*  
A ram with well-sprung ribs and a good wide hindquarter. |
| ![Image](image7.png) | **BR-07**  
*Loin chop*  
The oval shape of the loin muscle. This shape can be associated with a well-developed loin. We will find the more round shape on the underdeveloped loin and flat sided body. |
| ![Image](image8.png) | **BR-08**  
*Four different chops*  
Shoulder chops, rib chops and loin chops. Note the amount of fat that was cut away on the one side. It is not economically viable to overfeed animals, as this only adds fat and downgrades the carcass. |
| ![Image](image9.png) | **SH-01**  
*Good shape/topline*  
The outstanding characteristic in this ewe-lamb is the beautiful ewe-shape with good depth, strong loin and meat qualities. |
| ![Image](image10.png) | **SH-02**  
*Shape/topline*  
Compare this ewe-lamb with the previous one. This lamb has a slight weaker top line, less muscle and the covering just doesn’t make her so attractive. |
| ![Image](image11.png) | **SH-03**  
*Ram shape*  
The ideal wedge shape for a ram, heavier towards the front. |
| ![Image](image12.png) | **SH-04**  
*Ewe shape*  
The ideal wedge shape for an ewe, heavier towards the back. |
This can be the result of a shortage in the feeding program, mostly calcium. This however can also be the result of genes or inbreeding. Impaired walking ability is the biggest setback.

This condition hampers walking ability and is not appealing to the eye. It also closes up the space between the legs where normal udder and testicle development should take place.

The shin is the part above the hock or as some people refer to it as the “catch-point.” This is a good indication of too little meat qualities and too much leg.

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### HQ-13  
**Split hooves**

The left rear hoof is split too much compared to the right-handed one. In severe conditions like hard veld with stones etc. this hoof will be subject to damage and thus resulting in possible infections.

### HQ-14  
**Public-bone placement**

Look at the placement of the hind legs. There is enough space between the legs for good udder development. This shape is also important for the pubic bone placement being ample for easier birth of lambs.

### HQ-15  
**Short round rump**

We do concentrate on meat qualities. This hind quarter is short and round with the result of lack in meat qualities.

### HQ-16  
**Rump shape**

This ram has a long and straight rump with good legs. The flank depth could have been better.

### HQ-17  
**Docking the tail (i)**

This simple operation can be carried out with minimum effort. A special pair of pliers is used to place a castrating ring around the tail between the second and third vertebra.

### HQ-18  
**Docking the tail (ii)**

A guillotine-type cutter was used to remove the tail six days later. Antiseptic spray is used afterwards. Another method to dock tails is with gas forceps.

### HQ-19  
**Docking the tail (iii)**

The result viewed from the side shows that the tail was docked in line with the thigh. An eye-pleasing picture! Do not dock tails too short.

### RP-01  
**Long scrotum**

When the scrotum becomes too long it is subject to the elements, get bruised and there can be a temperature control problem of the semen. There is no specific cut-off line but common sense should prevail.

### RP-02  
**Split scrotum**

We do discriminate against a split in the scrotum of more then 1,5cm deep.

### RP-03  
**Split testicles - Extreme**

One of the reasons why we have a limit on a split scrotum is because of the extreme in this condition. The two testicles are dirty because of the urinary canal from in between the two testicles.

### RP-04  
**Uneven testes**

Uneven testes are undesirable and can be an indication of a few problems. This should be viewed with a critical eye with the help of a veterinarian.

### RP-05  
**One testicle (Cryptorchidism)**

One testicle got stuck in the inguinal canal. This is a hereditary condition and should be culled.
### RP-09 Pizzle disease

This disease must be specifically inspected for. It can spread rapidly, and infect the ewes as well. Prevention is better than cure, once your flock is infected, it is extremely difficult to stop or control.

### RP-08 Reproductive organ size

The left ram’s organs are too small and should be checked. Also remember to do fertility and sperm count tests on rams.

### RP-07 Twisted testes

This is a very rare occurrence. It may sometimes only be spotted when the ram is in a relaxed state. When the ram is walking or being chased, he pulls his testes up, and it appears to be normal.

### RP-06 Ideal size and shape

Good shape testicles together with good sperm count is important.

### RP-10 Reproduction organ sizes

An example of under-developed organ in the left ewe.

### RP-11 Reproductive organs

The ewe on the right has got smaller organs and it is placed much higher than the ewe on the left. The ewe on the left is more normal and is already showing udder development – it makes you think!

### RP-12 Reproductive udder

This well developed udder is feeding twins.

### PG-04 Pigmentation

Good pigmentation on the teats of this white Dorper ewe. The udder of this young ewe is well developed.

### PG-05 Pigmentation

This is good pigmentation on a white Dorper whereas 50% is required on the Dorper. Only a spot or discolouration will be acceptable for a P5 on the White Dorper.

### PG-03 Eye pigmentation

Good pigmentation on this white Dorper eyelid. Note that brown is regarded as pigmentation and this is therefore 100%.

### PG-02 Pink eyelid/blue eye

A pink eyelid as shown in this photo is prone to skin cancer under desert conditions. Blue in one or both eyes are faulty.
This ewe is out of proportion. Too much leg and legs too thin, too short in the barrel, not a good ewe shape and lacking in meat qualities.

If we compare this ewe to the previous ewe we can see the complete opposite with good balance, length and type.

Not a desirable type ewe, look at the smaller hindquarter compared to the rest of the body. She will only qualify as type 2 for commercial use.

Although this was used to develop the breed, a lot of off-types are culled today, because of too many Persian characteristics.

Good width in the hindquarter with a beautiful arch between the legs. Pubic-bone placement of this ram perfect for transferring to ewe offspring for the ideal birth-canal opening.

A long, well muscled type ram, could have been stronger in the head.

A long well muscled type ram with good flank attachment, good length and well balanced.

When colour goes beyond the shoulder it becomes a P2 and cannot qualify for stud. When colour goes down below the knee without a break on the cut-off line it becomes a P2.

Black colour on the body or fore quarter is faulty. A total of 10 cm in diameter brown/red colour is allowed on the head, neck and underline for P3, which still qualifies for stud.
<table>
<thead>
<tr>
<th>CP-03</th>
<th>Continuous blaze</th>
</tr>
</thead>
<tbody>
<tr>
<td>A through blaze where the black is divided in two is a P2 and cannot be studded.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-04</th>
<th>Path on the organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A patch of 10cmx20cm is allowed on the ewe. Note not wider than 10cm to qualify for P3 and then no more colour allowed on the underline.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-05</th>
<th>Spots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spots are more common on ewes than on rams. A few spots are allowed on older ewes. When it hampers appearance it cannot be studded.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-06</th>
<th>Spot on the sheath</th>
</tr>
</thead>
<tbody>
<tr>
<td>A spot of 10cmx20cm is allowed at the sheath of the ram, but then no further colour allowed on the underline. Again colour not wider than 10cm.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-07</th>
<th>Patch on the shoulder</th>
</tr>
</thead>
<tbody>
<tr>
<td>A patch like this, which doesn’t go past the shoulder and not below the knee on the forequarter, will be a P3.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-08</th>
<th>Black forequarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A black head, neck and breast like this will be a P3 and qualifies for stud.</td>
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<thead>
<tr>
<th>CP-09</th>
<th>Black on forequarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>When black on the forequarter runs in between the legs on the chest, it can extend to inline with the rear of the shoulder where the underline starts. Black can only be spotted between the front legs in this picture.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-10</th>
<th>Black head &amp; neck</th>
</tr>
</thead>
<tbody>
<tr>
<td>When black is touching the neck or shoulder it is downgraded to a P3. In addition a patch of 10cm in total is allowed on the underline.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-11</th>
<th>P2 - colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>More colour is allowed at the back of the ewe. A 20cm x 10cm patch is allowed down from the reproductive organs, but no more colour is then allowed on the underline. This example will qualify for P2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-12</th>
<th>Black scrotum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black hair on the scrotum is on the underline and a patch of 10cm is allowed. This scrotum will be a P2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-13</th>
<th>Colour over the head</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cut-off line for colour on the head is the horns or if no horns the horn-base. The colour extend past the horn-base to the front and will be a P3.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-14</th>
<th>Colour on the face</th>
</tr>
</thead>
<tbody>
<tr>
<td>If this was the only white on an otherwise black head it will be a P3. Any colour in front of the horn base will be a P3.</td>
<td></td>
</tr>
</tbody>
</table>
**TRAINING GALLERIES....**

<table>
<thead>
<tr>
<th>CP-15</th>
<th>Colour on the head</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a white patch on an otherwise complete black head, which runs over the horn base and makes it a P3.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-16</th>
<th>No colour around the eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ideal is black around the eyes and will qualify under P5 as shown in the photo. Note: There is no P4 for colour around the eyes.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-17</th>
<th>White or brown around the eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>An indication of white or brown around the eyes is only acceptable under P3. When this colour becomes more (moderate colour) it will be downgraded to a P2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-18</th>
<th>White or brown around the eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the white around the eyes becomes too much we do discriminate against it and it can’t be studded. This will be a P2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-19</th>
<th>White or brown around the eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the white around the eyes becomes too much and extends onto the face, it will become a P1.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-20</th>
<th>White or brown around the eyes</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the white around the eyes becomes too prominent and extends onto the face it will become a P1. This is also true for brown colour. Brown is regarded as foreign colour.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-21</th>
<th>P2-colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>When colour extends through the cut-off line on the knee without a break it becomes P2.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-22</th>
<th>P3 colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>When there is a patch on the cut-off line a 10cm in total is allowed and it becomes part of the underline.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CP-23</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cut-off line is the point of the hock. The colour is above this point, thus on the body and it becomes then a P2. Without the patch on the hock this animal could score a P4.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CV-01</th>
<th>Covering - hairy type</th>
</tr>
</thead>
<tbody>
<tr>
<td>This ewe will score a H2 for covering because it is very hairy and dense.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CV-02</th>
<th>H5 - covering</th>
</tr>
</thead>
<tbody>
<tr>
<td>This ewe, has got a nice clean forearm and underline, has got a nice clean head and therefore will score maximum points.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CV-03</th>
<th>H3 - two types</th>
</tr>
</thead>
<tbody>
<tr>
<td>For H3 there is two types of covering. The woolly type (rear ewe) and the hairy type. Remember there must be a mixture of wool and hair on both types and not too dense to qualify for H3. Notice the longer covering on the underlines.</td>
<td></td>
</tr>
</tbody>
</table>
TRAINING GALLERIES....

**CV-04**  
H3 - woolly  
This animal has got wool on the underline but a good kemp indication on the outer thigh, which indicates a good mixture.

**CV-05**  
H5/4 - covering  
This ram’s covering is less dense with some hair on the underline. There is wool on the front shoulder/forearm, which makes it a H4 instead of H5.

**CV-06**  
H5 - covering  
This covering is the ideal H5, which sheds so easily. Look at the short clean underline with shoulders and forearm clean.

**CV-07**  
H5 - shedding  
Another example of a H5 shedding in the veld with a little more dense wool but a nice clean underline and shoulder.

**CV-08**  
H3 - mane  
This ewe has got a soft mane. A mane is a masculine hormone trend and one must be very careful not to transfer it to ewe material. The result of masculinity in ewes will be disastrous for re-production.

**CV-09**  
H3 - covering  
More towards the woolly side and a H3 covering and also shedding desirably, but with a lot of contamination on the veld. The short, loose, light covering is the ideal.

**CV-10**  
Black on forequarter  
An Apron is a masculine trend and will be found just about exclusively on rams. This qualifies under H3 and can be studded.

**CV-11**  
H5 - covering  
A white Dorper with H5 covering and will surely shed to perfection.

**CV-12**  
H5 - covering  
A very good example of an ewe with H5 covering. We can clearly see the clean shoulder and forearm with a wool mixture on the forequarter and of course the clean underline. This type of covering will definitely shed and always looks neat.

**CV-13**  
Covering gene-transfer  
Like mother like son. The transfer of genes on covering can be seen. Remember final covering occurs around 12 to 14 months of age. Although covering and colour is secondary to conformation, size and fat distribution it has an economical value in selling and labour costs.

**CV-14**  
H5 - head covering  
The ideal covering on the head is short kemp lying flat against the skin.
Excellent example of covering on the rear of this ewe. During lambing there is no possibility of blood in the wool thus attracting flies etc? Set yourself a goal to breed them like this.

We see the ideal, pleasing covering from the front. It prevents contamination of a “Velcro” type grass seed that sticks to the wool. As the front part always penetrates the shrubs and grass first, this covering will prevent unnecessary irritation. Perfect leg placement, width of the chest, size of bone, very slight X-legs on this ewe makes her very special. She stands beautifully on her legs.

Wool allowed over the crown of the head. Wool allowed over the crown of the head. A ridgeback type of coarse hairy mane. It is faulty under covering. A lion type of coarse hairy mane. It is faulty under covering.

In this project, type 2 (second selection) ewes were used with stud rams to upgrade this flock. From the offspring we can see the improvement that illustrates the fact that the ram is half the flock.

Another look at the group of second selection ewes with their lambs. This type of front quarter was common on the second selection ewes used in the upgrading project. This type of ram that is well balanced with good body length, well placed legs with good hind quarter and a long hamstring was used in an upgrading project with good results.
This feeder is weatherproof and holds about five bags of fodder. It is height adjustable, and the flow of the food can also be controlled. It can feed fifteen mature sheep simultaneously, or many more lambs.

Rams with good testicle development. This trough was made from a 22” tyre, cut to form the base, and a 44-gallon (200lt.) drum, open at both ends.

To upgrade minimal colour (right-hand ewe) use a strong-coloured ram. The perfect result of this is the lamb in the middle!

This idea also helps to get the sheep away from the natural habitat of ticks under the bushes. The result is less tick problems, less dipping.

This bell is tied around the neck of the lamb to scare-off predators.

An easy, practical way of handling your sheep if labour is a problem. (This ewe will score H2 under covering, as it is very woolly and dense.) Detailed design drawings of this clamp are available on page 80.
Conclusion

It has been a pleasure in sharing this information with you. I trust that you will experience as much, and hopefully more pleasure from breeding sheep as I have had over the years.

Having tried to keep information concised I realise that it is impossible to screen every aspect of farming. Should you envisage collecting more knowledge, and you have access to a computer, you may search the World Wide Web for several breeders and information regarding their aspirations.

The Internet has become such an exiting medium of information that we can easily glean answers on certain specialized topics through this service.

If you however, need more information on the Breed Standard of Excellence do contact the South African Breeders’ Society and they will endeavor to help you in this regard.

We envisage to keep the information updated as deemed necessary and will gladly listen to breeders out there to accommodate their needs and questions.

If the book has captured your interest inform others. A Power Point training CD is the latest edition to this book to make training on Dorpers exciting. This book and CD is available at a very affordable price and can be ordered from the Dorper Breeders’ Society.

The information contained in this book should do more than just provide a recipe for farming with sheep. I trust that the information will enrich and inspire your aspirations.

“For in getting we make a living, yet in giving, we make a life.”

Join the South African Dorper Breeders’ Society and become part of the global inspection and approving system of the Dorper Breed.

An animal with a certificate is a guarantee of quality.

For further information contact the South African Dorper Breeders’ Society

PO Box 26, Middleburg, Eastern Cape 5900
Tel: +27 49 242 2241
Fax: +27 49 242 3589
E-mail: dorperinfo@adsactive.com
Website: www.dorpersa.co.za

Dorpergreetings,

Dolf Lategan

DORF LATEGAN - the author of this book, deserves special mention for the enormous task he took upon himself 10 years ago, in compiling the information and creating a text book for the Dorper Breed which is praised worldwide for it’s excellence.

Dolf put his whole heart and soul into this effort and it certainly reflects his love for the Dorper Breed as well as his ability to share his knowledge. The S A Dorper Sheep Breeder’s Society appreciates Dolf’s effort and we take this book over from Dolf with pride and gratitude.

This edition is specially dedicated to a man who had a vision for the Dorper Breed - Dolf Lategan.

Breed Director
S A D B S
Fourth edition - 2007
1. Why did the establishment of a new breed become necessary?
2. Which two breeds were used for developing the Dorper, and mention the sex in each case?
3. Name the outstanding characteristics of the Dorper?
4. Name three methods for mating?
5. Which characteristics are important for the ideal slaughter lam?
6. How is adaptability defined?
7. Name the six sub-divisions for evaluating conformation?
8. Define size or growth rate?
9. Complete the correct point values for Dorper sheep:
   a. A white sheep with black head and full pigment?
   b. A white sheep with black head, full pigment and a loose spot on the neck?
   c. A white sheep with black head, full pigment, and a spot of 3cm in diameter around the reproductive organs?
   d. A white sheep with black head, full pigment and a spot of 7cm x 15cm in diameter around the reproductive organs?
   e. A white sheep with black head, 55% pigment and limited amount of spots on the body?
   f. A Dorper sheep with a complete through blaze?
   g. A sheep with a black head, with one black ear and the other ear white with a black spot?
   h. A white sheep with black head with spots on the legs total 12cm in diameter?
   i. A sheep with blue in one eye?
10. Describe the following point values for the White Dorper:
    a. 100% pigment on eyelids and indication at the back?
    b. 52% pigment on all the eyelids?
    c. 28% pigment on the eyelids?
    d. 25% pigment together on 3 eyelids?
    e. White Dorper with 8cm brown spot on back?
    f. 100% pigment with 3 spots on ears?
    g. 10 cm brown spot on head?
    h. 100% pigment with black eye lashes?
    i. No pigment on White Dorpers?
11. When evaluating type, you should concentrate specifically on some aspects for selecting rams and ewes - mention one word in each case?
12. Name the minimum points that can be awarded for the following:
    a. Stud
    b. Second selection
13. Name the data (four items) which is necessary for establishing the wean index for performance testing?
14. Name three important characteristics of a potential stud breeder?
15. Name the three main characteristics for the ideal covering?
16. In P3 on the Dorper, is a through white blaze acceptable?
17. Who was original in control of the crossbreed program at Grootfontein, South Africa?
18. Did the Dorper and White Dorper originate from the same breeds?
19. Which symbol does a short, loose, light covering of hair & wool, predominating wool on forequarter, with a natural, clean underline describe?
20. What aspects mainly determines type?
21. At what age should breeding ewes be selected?
22. Name six characteristics that make the Dorper such an economic breed?
23. Give the symbol for a Dorper with a black head, neck, forequarter, and one leg black to the pastern?
24. Can an animal scoring D3 still be approved as stud?
25. What symbol does a white sheep with an entirely black head or black head and neck, with complete pigment, describe?
26. What symbol does an altogether white or black sheep, or a sheep with any other colour than black or white, or a sheep with one or both eyes blue, describe?
27. Name the three most essential management aspects for successful Dorper farming?
28. Give the minimum points for an S1?
29. What is the score for the following in size?
   a. Below average?
   b. Extremely small or big?
30. What is the symbol for a sheep with localised fat or too dry?
31. What is the symbol and selection for a reasonable amount of fat or dry?
32. The White Dorper is classified under the same Breed Standard of Excellence, except for colour pattern. True or false?
33. On the White Dorper we allow brown eyelashes as P5, but on the Dorper we discriminate against brown around the eyes with a P4. True or false?
34. Weight and grade mainly determines profit on lambs. True or False?
35. What is the symbol for a coarse mane?
36. What is the symbol for an apron?
37. Complete the monkey-puzzle below.
   ![Monkey-puzzle](image)
38. Must an ewe have an indication of pigment on her udder to qualify for P3?
39. What points must be discriminated against when scoring covering?
40. Give the symbol for a short, loose, light mixture of hair and wool with a natural clean underline?
41. Give the symbol for a short, loose covering of predominantly wool with perceptible kemp on the outer thighs?
answers:

1. a. Surplus meat  
   b. Poor carcass quality  
2. a. Dorset Horn ram  
   b. Black Head Persian ewe  
3. a. Mutton production  
   b. Adaptability  
   c. Hardiness  
   d. Veld utilisation  
4. a. Mass mating  
   b. Individual or Group mating  
   (one ram with group ewes)  
   c. Artificial insemination  
5. a. Good conformation  
   b. Good muscling  
   c. Good fat distribution  
6. a. Mortality  
   b. Reproduction  
   c. Growth rate  
   d. Disease resistance  
7. a. Head  
   b. Forequarter and neck  
   c. Barrel  
   d. Hind quarter  
   e. Udder and reproductive organs  
   f. General appearance  
8. Ideal mass for age  
9. a. P5  
   b. P4  
   c. P4  
   d. P3  
10. a) P5

Take note of the table as shown here. This format will be used for examination purposes. The answer for this table is: Line "C" do you agree?

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>5</td>
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<tr>
<td>4</td>
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<td>5</td>
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<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Choose the correct values for (i), (ii), (iii), (iv), (v), and (vi) in the table, then observe the correct answer row from the bottom table (x), (y), (z), (a), (b), or (c) which represents the correct values for all the Roman numerals. Note: Only one line represents all the correct answers and this method will be used in the examination. Make sure you understand it.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B3</td>
<td>G3</td>
<td>D3</td>
<td>P2</td>
<td>H2</td>
<td>T3</td>
</tr>
<tr>
<td>2</td>
<td>B3</td>
<td>G3</td>
<td>D3</td>
<td>P2</td>
<td>H2</td>
<td>T3</td>
</tr>
</tbody>
</table>

H3

38. Yes
39. Denseness and length of covering.
40. H4
41. H3