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Telephone +500 27355

Fax +500 27352

sferguson@doa.gov.fk

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EDITORIAL

Spring has sprung once more. You can hear the grass growing- well not quite but at least it has started. The abattoir is gearing up for the next season; the double dump is ready to press; ewes lambing; cattle caving and farmers should have made plans long ago on what to sell; what to keep and what direction to progress their farms.

The DoA is thinking ahead already to the next winter- organizing feed trials. Just when work is reaching a crescendo in the camp you are being asked to think to next winter at the time you are trying to forget the last!

In addition to thinking of preparing for next winter you are being reminded to keep an eye out for strange happenings in the stock so anything abnormal can be investigated and Falkland Islands disease free status can be maintained. This is the time stock are seen and observed; this is the time to report strange goings on.

Farming can give one a headache!

Horses are heading into town with their feet nicely grown after a winter on the soft ground ready to be prepared for the racing season. Time to trim the hoofs, clean up the yard of hazardous materials and start the training schedules.

Guy Fawkes is on 5 November.. This is traditionally when, in Australia we used to blow up the neighbour's letterbox and scare our mates to death. Now days things are a lot more civilized but remember dogs with sensitive ears should be hidden away on the night of merriment so we don't get rung up during the night to try and fix things that have gone wrong!

Enjoy the shearing and remember this is the final process in putting together the product you will sell and have spent a year producing. Look after it!

Vic Epstein
Senior Veterinary Officer

PROTEIN SUPPLEMENT TRIALS DO YOU WANT TO BE A PART OF THEM?

By Peter Johnson

It has long been established that low protein levels in camp feed are a major limiting factor for animals in the Falkland Islands. Not only does it have a direct effect on animal nutrition, but it has compounding effects through ovulation rates, reproduction, lamb survival, hogget death rates and mature sheep death rates.

With a more reliable freight service from South America, relatively cheap sources of protein for animal supplementation are now a more economically viable option for the Falklands. These plant products include grains, pulses, oil seeds and their various ground meals. The DoA plans to carry out experimental work in 2007 to quantify the effects of feeding a protein supplement to animals, and to come up with practical systems of feeding it out to animals.

The Trials

Eight separate trials are planned, four involving groups of ewes and four with groups of hoggets, with approximately 500 animals in each group. The trials will run for up to 100 days starting in mid-winter, traditionally when animals suffer the most from poor quality feed and harsh climatic conditions. Other animals grazing on traditional camps, un-supplemented, will also be measured during that time as a control.

Measurements on all animals will be bodyweight, condition score, fleece characteristics (weight, yield & micron) and mob death rates. Extra measurements on the ewe flocks will include reproduction data such as scanning results, lambing percentages and the follow on effects for the following year's conception and reproduction.

Expected Benefits

Nutritional research has proved repeatedly that the benefits from supplementation during the toughest period of the year and pregnancy are wide reaching. The progeny of the ewes supplemented in the trials can be expected to have a lower micron, cut a heavier fleece and have higher lifetime reproduction. Another benefit will be that if we can increase hogget ewe weights during this period (rather than them losing weight at this time of year), then many of them may reach joining weight at 18 months of age, instead of 30 or 42 months.

The Protein Supplement

The exact feed type (whole seed, pellet etc) and how it will be fed out will be determined by the farm hosting the trial in conjunction with the DoA. We need to ensure that animals have good access to the feed but also that it is available to animals on even the wettest, coldest day of the year. For this we currently have no perfect solution and encourage input from all people as to how the problem can be tackled.

The trial will run in 2007, with some of the follow up data on the ewes also collected in 2008. The trial is designed to show the response to the protein source by Falkland Island animals. There is plenty of overseas data showing positive responses, but we need to know exactly how the animals from here respond. We will then do the economic number crunching to determine if the measured positives associated with the supplementing (wool weights, survival rates etc) outweigh the cost of getting the protein here.

The Results

The results will be presented as a sensitivity table, so that it is easy to see at what price of the input (protein) becomes economically viable to supplement at, compared to the price of the output (wool / sheep meat / animal survival). For example, if the input price of protein is

£180 a tonne, with clean wool at 220p/kg it may be a viable option, but at £220 a tonne and clean wool at 175p/kg it may not be. That is the sort of information we will generate to indicate at what price the supplement may be viable.

The trial as such will finish at the end of winter in 2007, although more data will be collected from some animals, particularly reproduction data, into 2008. If the results show that it is viable, then it will be up to individual farmers to source and purchase their own protein supplements if they choose to go down that path. DoA will support this stage in an advisory role to farmers with supplier contacts, feeding rates and feeding practice advice as required. If supplementing proves unviable at this stage, then the animal response curves will still be valuable information to have.

Your Questions Answered

'I am interested in hosting one of the 8 trials'

That's great! Please keep reading. I have not met all of the farmers in the Falklands so far, so I don't yet know everybody who would be interested in running one of these sites. Please contact me! The trial sites can be on East or West Falkland, or on one of the other Islands – we want a broad spread of areas.

'How many sheep do you need for the trial?'

The trial is for four farms with at least 500 ewes (preferably 1000 – 500 supplemented & 500 as a control) and another four farms with at least 500 hoggets (ideally at least 600 to 1000, again to have a reasonably sized supplementation and control groups within the trial).

'What do you want me, as the host farmer, to do for the trial?'

If you put your hand up to host the trial you can expect that I will be working closely with you over the next 6 months or so preparing for the trial, and deciding how and what we are going to supplement your animals with. If your animals are ewes we will start recording information about pregnancy status etc after joining. Before feeding starts, we will need to get all the animals in to be tagged, weighed and condition scored and split into supplemented and control groups.

During the trial you will need to ensure that the animals are fed the supplement at the right rate and at the right time. This may be twice a week or twice a month, depending on the type of system we put in place. You will need to gather the animals comprehensively when they need to be weighed, or other measurements taken. Once the supplementation stops, there will be follow up work about survival rates, weights, wool characteristics and reproduction data to collect.

'What do I need?'

First of all, the animals, and then the camps separated by good fences to ensure that only trial sheep are fed the supplement. You must have a passion for this work as I will be out an awful lot taking different measurements and seeing how the trial is going! You need to be prepared to have a go and accept that the way we feed may not be perfect to start with and may require some adaptation as we go through the trial.

'Where can I get more information and how do I get involved?'

Contact me at the DoA if you wish to have a look at the full trial proposal, which I can send to you. If you are interested in being one of the host farms, I will arrange to meet with you and discuss the trial. This is an exciting trial with results that are expected to really mean something to all of the farmers in the Falkland Islands.

NSF - POLWARTH GROUP BREEDING SCHEME

By Neil Judd

Wanted - Farmers interested in progressing Polwarth- type sheep in the Falkland Islands.

When - Enquire NOW to Neil Judd at the DOA. The intent is to have the NSF Group Breeding Scheme (GBS) fully operational for next years mating.

What will happen?

Selected ewes from interested farms would be re-located to Saladero early in 2007 (March?) to acclimatise to the new surroundings.

It is expected that each farm would contribute between 25 and 50 ewes to the NSF-GBS in 2007.

Ideally ewes would be maidens or have had no more than 2 lambs.

For each five ewes contributed in 2007, farmers would receive 1 x ram back for free in late 2008/early 2009.

Similarly the number of ewes contributed in 2008 would determine how many rams were received in 2010; the number of ewes contributed in 2009 would determine the number of rams received in 2011 etc.

For each 5 ewes contributed there is one-off allocation of 1 ram!

Ewes from farms joining the NSF-GBS would be split approximately equally between the NSF existing 8 x family structure. Ewes from each farm would be mated to the best stud sires that the NSF has.

Artificial Insemination (AI) may be considered necessary to add sufficient 'sire quality' to some families.

Ram lambs born from your ewes would be available for you to select your quota of rams from.

Ewe lambs born in the NSF remain the property of the NSF-GBS until no longer required.

When ewes born into the NSF-GBS are no longer required, they will be offered for sale to members. If insufficient demand exists from members, they would then either be offered for sale to the general public or otherwise disposed of.

Each year ewes in the NSF-GBS would be heavily culled. The expectation is that between 30 and 50% of ewes would be culled from the breeding flock each year.

Ewes contributed to the NSF-GBS from member farms, once culled, would be returned to the farmer who contributed them.

Once the flock is fully up and running, new female entries would come into the NSF-GBS every year from both member farms and also from shearling ewes born in the NSF-GBS.

It is expected that after year 1 (2007) and year 2 (2008) the number of ewes required from member farms would reduce. It is possible that a member contributing say 50 ewes in 2007 would only need to contribute about 25 ewes in 2008 and even fewer in later years.

Objective of the scheme

To produce the best quality Polwarth type rams in the Falkland Islands.

Best-Practice principles will be used to identify the best animals to progress the characteristics of members' sheep that make members money!

Breeding objectives will be reviewed regularly by all members, but the following general principles are believed to be appropriate to start with;

- Breeding ewe flock fibre diameter of 22 to 23 micron with desire to slowly reduce it further

- Clear faces
- Increase bodyweight and frame size
- Improve reproduction rate and fertility
- Maintain/slowly increase fleeceweight
- Reduction/elimination of pigmentation
- Produce quick growthy lambs mainly for the hogget market
- Surplus rams produced from the scheme above members 1:5 allocation would be offered for sale to members before being offered to the general public

If you are at all interested in helping to secure the future of the Polwarth breed in the Falkland Islands and in advancing your own Polwarth sheep at the same time, do not hesitate to call. It is firmly believed that if we all work together on this project, we can achieve so much more for the Polwarth sheep breed than by working alone!

Note - you do not need pure Polwarth sheep to be involved, but rather a willingness to contribute your best available ewes and a desire to progress towards Polwarth type dual purpose sheep.

THE HEALTHY HOOF

By Joe Hollins

1834. Darwin, the great naturalist, is visiting the Falkland Islands on HMS *Beagle* with Captain Fitz Roy. Observant of every detail as ever, he says of the resident horses that: 'From the softness of the ground their hoofs often grow irregularly to a great length, and this causes lameness'. Nothing's changed!

The problem is twofold: the soft ground minimises wear, and the wet, acid peaty soils leach out the protective oils in the hoof. The result is an excessively hard but brittle hoof that elongates, especially at the toe. This acts as a lever, strains the flexor tendons (at the back of the foot), alters the whole axis of the foot, is prone to splitting (sandcracks), and provokes long term complications such as 'sidebone' (a hardening of the cartilages or 'wings' above the heels) and 'ringbone' (bony thickening above the hoof and below the fetlock). It is probably true to say that without corrective trimming most - if not all horses - in the Falklands will develop problems in time. It's the nature of the territory and not really their natural environment. The best defence against these complications is prevention, and it helps to have a basic understanding of what the hoof is all about.

Some horses are born with, or develop poor conformation. It should be possible, when viewing a limb from in front or behind, to visually draw a vertical axis straight down through the centre of the limb from the hip or shoulder to the middle of the toe (Fig. A). Some horses are base wide or base narrow, toe in or toe out, with a number of variations on the theme. They will have abnormal hoof conformation anyway and are beyond the scope of this short article.

Given a normal conformation, how should you treat the hoof to keep it healthy?

First a little about the hoof. The hoof is a fantastically evolved structure. Look at the middle

finger on your hand and curl back your other three fingers and thumb, then plant that finger tip vertically on a table. That one finger simulates a horse's leg, the nail a horse's hoof. Extrapolate that to your other hand and the middle toes on your feet, then add maybe 500kgs (get out the beers and chocolate!). The nail has evolved into an enclosing case to distribute the load and disperse the concussion up through the limb.

The horse's hoof consists of a wall, extending from the nail bed (the coronary band) to the ground; a concave sole which should not touch the ground except where it joins the wall; a pair of bulb-like heels; and in the centre of the sole, a soft triangular frog (Fig. B). The frog does make contact with the ground, and distributes the load and impact up into a spongy structure called the digital cushion, very much like hydraulic suspension. The relationship of these structures and the curvatures and angles are an evolutionary masterpiece of engineering. Alter the angles and the relationship fails, with the result that the 500kg mass pressing down from above causes progressive damage. The inevitable result is lameness. The plan then, given a horse with good conformation, is to pare the hoof to keep it that way.

A few facts to broaden the knowledge. The hoof grows at about 6mm a month from the coronary band, and keratinises and hardens the further down it goes. Hence from the band to the toe represents 9-12 months, from the band to the heels about 6 months. It also means that the heels are younger softer horn. In colder climates - in other words here! - it may be slower.

The variation in hardness between the different parts is not just due to the amount of keratinisation, but the water content, which is as follows: the wall 25%, the sole 33%, and the frog 50%. The water content is retained through natural oily secretions preventing desiccation, and gives the hoof its pliability. If it dries out, as it does here because of the leaching of the oils, the hoof becomes harder, hence it overgrows. Overgrowth here is already encouraged by the soft terrain, so this is, as the Americans would say, a double whammy. It gets worse. The overgrowth has a splaying effect on the wall of the hoof, and because the hoof is drier, inflexible and brittle, this encourages splitting or 'sand cracks'. At the same time the overlong toe exerts a tremendous lever effect and in the long term damages the heels, tendons, cartilages and joints, and causes lameness and a poor gait. A set of vicious circles.

Moisture then is the key and the Falklands have a real problem with hoof desiccation. The treatment, for that favoured horse you want to bring on, is oiling the hoof, ideally daily. Oils to use: fish oil, olive oil, proprietary hoof oil - or even lanolin (a prize for the first person who trains their pet lamb to give the horse a rub down each morning!).

Trimming is not as simple as it sounds. How much you should trim depends on whether the horse has a permanent poor conformation, or just an overgrown hoof. The latter is correctible; the former may be worsened by attempts to correct. As a guide, if the horse has a broken foot/pastern axis, then altering the hoof may well normalise the conformation. If the horse has an unbroken foot/pastern axis and the angle is wrong, then trying to correct the angle by altering the shape of the hoof can cause further damage (Fig. C). Trimming an overlong toe though always helps by reducing that leverage effect.

If it is just an overgrown hoof, then it is a question of not only trimming the toe but rasping down the sole to alter its angle to the ground. As a guide, the front toe angle should be 45°-50°, and the rear toe angle 50°-55° (Fig. D). Use a protractor to make a simple cut-out to

help you measure. Lowering the sole can be hard work; a traditional hoof knife and horse rasp will do, or even better is a Surform, which acts like a cheese grater. Large Surforms require an extra pair of hands, but a small one can be held in one hand and makes swift work of the hoof material.

Finally sandcracks, a common complication of the brittle overgrown hoof. Cracks will often bleed, become infected and cause lameness. Here they tend to be of the type that extends upwards from the sole towards the coronary band (nail bed). Once they have reached the band, they become harder to deal with and may create a permanent flaw. The key is to try to stop them and get them to grow out. Overseas, supportive shoes with toe clips are used to finalise treatment. That's not going to happen here. However, 2 things can be done quite readily: lowering the hoof wall, and scoring across the crack.

The cracks occur in three areas: the toe, the quarter, and the heel. A toe crack should have the hoof wall where it makes contact with the ground trimmed away 2cms deep on both sides of the crack. This relieves the pressure on it. In addition a pattern should be burnt or cut across the top of the crack to limit its extension. A quarter crack and a heel crack should have the wall lowered only to the rear of the crack and where there is room, a pattern cut in (Fig. E).

So, a basic guide to the healthy Falkland hoof is: trimming, oiling, and tackling the sandcracks. It's all a question of shutting the stable door before the horse has bolted.

DOA ENVIRONMENTAL DATA LOGGERS

By Peter Johnson

The DoA have recently acquired four environmental data loggers that will be used to support data coming from current and future trial sites around the Falklands.

The environmental data loggers are made in the United States and come with a range of sensors and probes. The configuration we have purchased can record wind speed, wind direction, rainfall, air temperature, humidity, soil temperature at 2 depths and soil moisture.

All of this information is automatically logged in the data-logger which runs off 4 AA batteries and lasts for up to 12 months. The data can be collected every second, but we have set them up to record every 10 minutes, to give a good idea of how things are changing through the day. Once the data is recorded, it can be stored for up to 12 months.

To download the data, you simply plug in a cable from a laptop and it downloads into graphs and tables. This graph is of air temperature and soil temperature that was recorded at the back of the DoA office over the last week – just so we know that the equipment is working!

The data will be used in a number of ways, but particularly to link data collected about plant growth from grazing and management trials with climatic data such as rainfall, soil moisture and soil temperature, all of which have a huge influence on plant growth.

Over the coming months, once we have set the environmental data loggers up at the trial sites, some of the data that they collect will be published in the Wool Press.