Learning objectives
At the end of this topic you should be able to:

- Demonstrate a thorough understanding of the factors that impact on profitable production of sheep enterprises in different geographical locations
- Discuss the impacts of management practices relating to problems encountered and overcome, animal health, pest management, grazing systems, production levels and genetic merit

Introduction
This topic provides case studies of two sheep enterprises located in geographically diverse regions. The first is an enterprise located in South East South Australia and is a mixed enterprise with prime lamb, wool and crop production. The second is located in the New England region of New South Wales and would also be considered a mixed enterprise but with more focus on superfine wool production with some prime lambs and cattle. The aim of this topic is to outline how the production environment and therefore management inputs differ between the two locations and enterprise types.

“Greenvale” – Case Study

20.1 Enterprise description
The Clothier family have owned and managed Greenvale since 1960. The property has been added to 4 times and downsized once to now total 1433 ha. It is now in the second generation with two brothers Leigh and Graham running a family partnership focusing mainly on sheep. The enterprise mix consists of, prime lambs (both 1st X and dual purpose), wool and some cropping (up to 15% area) with an emphasis on dry-land lucerne establishment and grazing.

Greenvale is situated 20 km North of Lucindale in the South East of South Australia in an annual rainfall area of 525 mm. The soils are predominantly coastal sands with inherent infertility and non-wetting problems. There are some better soils on the farm sporting large South Australian Blue Gums (Eucalyptus leucoxylon) and some of the soils on the flats are duplex with clay within 20 cm of the sand surface. Pastures consist of perennials and annuals with approximately 408 ha down to dry-land lucerne. Clay spreading and incorporation has been carried out over 508 ha and delving and incorporating on 175 ha. This is an ongoing program.

The business was once focused on wool production (1980s) and gained 60% of its income from wool. As it became apparent that incomes for wool producers were falling the emphasis of the business slowly changed to meat production, which now makes up over 70% of farm income.

The business is run as a partnership with each brother having an area of management to look after. A farm management meeting is held every Monday morning to sort the week out and also partnership meetings every 6 – 8 weeks that all partners (wives also) attend to sort business direction and finances.

20.2 Greenvale farm problems

Salinity
Since the land was cleared in the 1950s an imbalance was caused in rainfall water use. The water once used by the native vegetation was not all being used by annual pastures creating leakage through to the water table. This resulted in water tables rising and salinity levels in the topsoil rising in
spring and summer and falling back in winter. This problem was not really evident until the mid seventies when Blue Green Aphids wiped out existing dry-land lucerne stands that possibly covered 60% of the higher ground in the region at that time.

Lucerne as a perennial plant can simulate native vegetation in its water use therefore helping to alleviate rising water tables. Rainfall in 1981 was excessive in winter with a dry spring. From that point on increasing salinity was noticed in the region.

A network of groundwater and surface drains has been dug throughout the region to lower the water table and help with surface inundation in winter. The groundwater drains flow year round. This water goes out to sea north of Kingston SE. Since the drains have been in place (1998) there has been a dramatic positive effect on production along the path of the drain. This coupled with dryer rainfall years, and the establishment of lucerne on the high ground again has seen the impact of salinity reduced substantially.

Non-wetting soils
Farming what are described as stranded coastal dunes gives an indication of the soils we are dealing with. The sea once covered this area and as the sea retreated it stopped from time to time to leave a dune that runs parallel to the sea. These soils (especially on the high ground) have become more and more water repellent causing water table pressure on the flats as they became water logged and flooded. This is a major problem and has resulted in a lowering of pasture quality (less legume component) and also quantity in addition to the considerable drop in production on the flats from too much water.

Through the mid nineties a soil amelioration technique came forward as a fix for non-wetting soils. This technique is called clay spreading. As long as the clay was reasonably close to the area to spread, contained no large rocks and was relatively dry it could be done at recoverable cost. This was a major turning point in the business as the benefits were realised with an increase in production levels. Since 1996 approximately three quarters of the area that needs doing has been covered with the worst areas targeted first. This process is not cheap. Normal spreading costs are approximately $400 – $500/ha with incorporation costs also at $150 – $200/ha. The soil needs to be worked 4 – 5 times in the Summer/Autumn when it is dry in the year of spreading.

Soil fertility
Soil fertility is poor in its natural state. Low phosphorus, potash (potassium) and sulphur levels continue to be a challenge. Because the sands are porous they tend not to hold the nutrients. This leads to fertilizer applications every year to at least maintain nutrient levels. Since the start of clay spreading and delving the treated topsoils retain nutrient far more than the sands.

Annual fertiliser history has been: maintenance dressings of superphosphate on the poorer soils eg. 100 kg/ha, and build up dressings on the better soils eg. 200 kg/ha. Potash is added to the lucerne every few years along with trace elements (especially when establishing lucerne or cutting silage/ hay or growing lupins) as these levels are low especially for cobalt and selenium. These trace elements were a major stumbling block to running livestock in the South East of SA when the country was first developed.

Grass seeds
Silver grass or Sand fescue (Vulpia spp.) is a major management problem for Greenvale. While being reasonable sheep feed while young it’s hard and sharp seeds when mature can:

- Penetrate into the carcase of lambs prior to sale and leading to a downgrade (can cause rejection)
- Cause adult sheep to lose condition through seed penetration and ulcerated mouths.
- Contaminate wool
- Colonise pastures that are sparse and open

The non-wetting soils really made it easy for silver grass to take hold, as there were big gaps in the pasture with nothing growing and little competition. Since the 1970s silver grass has become a major weed on the property. Until clay spreading evolved it was nearly impossible to control.
Control measures now involve various tactics. The main one is to just spread clay with a three-year crop program consisting of:

- **Spring**: Spray topping/hay freeze before spreading
- **Summer**: Spread and incorporate clay
- **Autumn**: Crop to barley/canola with glyphosate and trifluralin
- **Next Autumn**: Crop to lupins/beans with glyphosate, simazine and trifluralin
- **Next Winter**: Use glyphosate/Sprayseed to establish new lucerne

This covers the ground with lucerne and makes it harder for silver grass to colonise, as it does not like competition. Other grasses tend to then emerge in the pasture like ryegrass (much better feed). The clayed soils respond much better to the chemical applications than straight sands as they wet evenly through the profile and stimulate an even germination of weeds.

Other control measures involve spray topping in spring before the seeds have gone past the milky dough stage with glyphosate (not lucerne) or if the weeds have gone past this point, grammoxone can be used to stop seed set (used in established lucerne). The major problem with this control measure is that if the silver grass is very dominant there is very little to take its place the following year. Cutting silage early from established lucerne controls silver grass well in the next year, other than silage spray topping with grammoxone works very well as it only burns the lucerne. Any measure works well if it is a two-year combined attack and if trees and fence lines are treated too.

Other grass species can be a problem in sheep production as well. Bromegrass (Bromus diandrus) can also penetrate sheepskin and cause carcase problems. Barley grass (Hordeum marinum) and (Hordeum leporinum) is in some seasons dominant on parts of the flats. Whilst not a bad skin penetrant it is well known for getting into sheep’s eyes and causing ulcers and pinkeye. At the 2006 shearing at least 10% of our lambs while having no carcase or wool damage had seeds in their eyes which had to be removed and sprayed for pinkeye, this set those lambs back and those pastures could not be used for lambs until all seeds were on the ground.

### Internal parasites

Greenvale has always struggled with internal parasites in the sheep. The main parasites are:

- Black scour worms (*Trichostrongylus*)
- Small brown stomach worms (*Ostertagia*)
- Barbers pole worm (*Haemonchus*)

With minimal cattle run (none since late 1990s) and moving now into more ewes and no wethers, options for strategic stock movements are few. In the last five years effective systems have been put in place to move Greenvale forward with internal parasite control. Since the early eighties when Greenvale did their first faecal egg count reduction trial (FECRT) better management of sheep worms has been possible.

The FECRT showed that Greenvale had multiple resistances to both clear (levamisole base) and white (benzimidazole base) drench groups. With clear at 60% effective and white at 40% effective it was obvious the approach to worm control needed to change. In our defence we had never strayed far from the normal best practice of the time. This just highlighted the need to change and how easy it was to ruin a drench group efficacy. At that time mectin base drenches had hit the scene and it was realised the need to keep this group fully effective for the future.

The strategies put in place after the initial FECRT were:

- To use one group only for the year and not switch
- Use combination drenches
- Use higher dose rates of the levamisole group, up to two times, only under veterinary guidance (care has to be taken with young sheep as weights can vary)
- Always weigh a sample and drench to the heaviest in the mob
- Bought Rametin (Naphthalaphos) drench into the groups as a combination with white drench
- Always calibrate your equipment and read the label
- Quarantine and drench with a mectin based drench any purchased stock

From there other strategies have also been added:
a closed flock (except for finisher lambs) to live adult animals (mid nineties) so minimise new worms onto the farm
- Do the first summer drench through mid December to mid January (instead of earlier)
- Monitor worm burdens late summer and drench on an as needs basis for the second summer drench
- Use a Closantel based drench as an addition at the first summer drench (this controls Barbers Pole worm very well for the rest of the year)
- Take faecal samples regularly especially on young stock
- Grazing lucerne on a rotation helps as the sheep and lambs graze further off the ground
- Keep other animal health treatments and feeding right up to speed so that young stock are as healthy and fit as they can be.

In the last FECRT in September 2010, the results were very pleasing showing an improvement of effectiveness of the Naphthalaphos/White drench back to near 100% except on Ostertagia (67%) and Levamisole to 86% with a great result in particular on Barbers Pole worm (Haemonchus) showing 100% kill on each drench group used. Mectin based drenches are still highly effective.

In addition to the above strategies it is imperative that sheep be bred to resist worms and to back this up rams are purchased from a stud that provides ASBV’s (Australian Sheep Breeding Values) in LAMBPLAN or MERINOSELECT for PWEC (worm egg count). Rams with an ASBV of negative 30 or better are the target.

**Dags and scouring**
Dagginess is a problem at various time of the year. With young sheep affected more than older sheep and Merinos more so than British breeds or XBs. This can be a real problem especially in spring leading up to shearing as mobs have to be checked for flies extending the pre shearing crutch period. Sometimes scouring is associated with internal parasites but is more often than not related to pasture composition and change of feed (dry to green). The flats rather than the high ground are the areas associated with dirty sheep. Before FECRT Greenvale sheep were quite often wormy with ineffective drenches being used and Black Scour worm being a problem.

A high prevalence of capeweed early in the growing season is a good trigger for scouring. This seems to be a problem also in early spring in pastures with a high percentage of Balansa clover under high growth conditions, but not always. This could be a trace element or vitamin imbalance but the cause is still unknown. The correlation between dag score and worm egg count in sheep is low.

**Red legged earth mite**
Earth mite love sandy soils, whether this is because of the nutrition weakness in the soil or that it is easier for them to over summer in the loose topsoil. If they are left uncontrolled on this property they severely damage the pasture composition and quality by taking out the majority of the legume content.

The Timerite spray program, developed in Western Australia and managed by Australian Wool Innovation, had been undertaken for six or so years until 2006, since then a few individual paddocks have been done each year (targeted to increase clover content in the next year) to reduce the possible onset of resistance. Timerite consists of knowing your Latitude, contacting AWI and for a fee receiving the date of the optimum time to spray earth mite on your property. The date for Greenvale is the 30th of September. This dramatically reduces earth mite numbers in the next autumn. In years when an early finish is experienced it works very well. Later finishes tend to let the earth mite prolong their reproduction and therefore the timing is not as successful but still a great tool for Southern Australia to use.

Omethoate appears to work more effectively than Dimethoate and the bulk of pasture has an effect on control, more bulk tends to dilute the chemical reducing efficiency especially if sprayed with an aeroplane. It still pays to check for earthmite the following autumn, as the spray may not reduce numbers to a point where they are not doing damage. All susceptible crops and new pastures should have as a minimum a bare earth treatment as a border spray to protect them from damage when they are sown.
Predators
Foxes have always been a major pest. If lambing occurs when no other properties in the district are lambing, lamb losses are high. A number of steps have been taken to lessen the risk from foxes over time with varying degrees of success. Initially electric fences that would keep out the foxes in conjunction with spot lighting was used which did not work. Baiting at the same time as neighbours with 1080 baits as well as spotlighting has been very successful in lessening the damage from foxes. This year baiting for two weeks in the spring around mid September will also be done as the fox bitches with cubs are hungry and actively seeking food.

Baits are usually laid in autumn when the foxes are hungry. By law baits have to be buried, a small divot is dug out then the bait laid and covered with different coloured sand and the fence is marked with an ear tag or ribbon and keep a map of bait positions. These baits are then left out for around three weeks before being picked up and disposed of. Dogs have to be kept well in check for that period. At last baiting there was a 20% take with around 45 baits laid. Greenvale borders a conservation park with a 2.5 km boundary fence. The Parks and Wildlife also bait the park and are very good to liaise with.

Wedge Tailed eagles also take some lambs but no control is attempted as they are protected and it would not amount to too many losses.

20.3 Sheep enterprises – commercial flocks

Dual purpose flock
These are Merino ewes that are at the older end of their breeding life (have good fecundity) that are mated to terminal rams (White Suffolk). Since 2008 a lot of emphasis has been placed on targeting high growth, low birth weight rams to try to lower the death rate at lambing and general dystocia in the dual purpose flock. Care must be taken though not to let birth weights drop too low as lamb losses from exposure will increase. It seems that 3.2 kg is the lower end of birth weight with 4 kg being ideal. Ewe condition score needs to be monitored to ensure it doesn’t drop too much through autumn, as older ewes need to be looked after well if you want them to perform. Ewes are fed supplements usually a grain legume starting early in the summer with some silage bales as well to ensure condition score is maintained.

Death rates have reduced using this simple tool at ram purchase time. In the 2009 lambing, 130 ewe deaths occurred from a joining of 3590 ewes. In the 2010 lambing, there were 105 ewe deaths while joining 4180 ewes. The current lambing is going well with less ewe deaths than last year again. Surveillance of the lambing ewes has also increased with most ewes checked one a day.

Around 1500 ewes are joined to have XB lambs at present. The earlier lambing empties are rejoined usually to Multi meats to breed some replacement ewes. These lambs are easier to manage in the seed drop period as the ewe lambs can be separated off and don’t necessarily have to be managed to keep them seed free as they are retained.

Cross Bred flock
Cross bred ewes have been run since around 1995 when the wool industry was still down and the emphasis on lamb was starting to become greater. Until then only pure bred Merinos or 1st X prime lambs were run on Greenvale. Second cross lambs are great, they do well and are always heavier than they look. The original ewes carried the Booroola gene but were the older style and although very fertile everything had to be spot on to turn that increase in lambs into extra dollars. Ewes could not be too well fed at mating or too many foetuses were laid down resulting in small lambs being born and a high risk of pregnancy toxoaemia if feed conditions were tough. These problems had the potential to increase ewe deaths therefore decrease profitability.

From then on White Suffolk X Merino ewes have been used in our X Bred flock. We have had great success with these sheep, as they are very hardy, milk well and the newborn lambs are very alert.
These sheep need little supplementary feeding and hold their condition well through summer and autumn. The second cross lambs being three quarters British Breed are very good carcase animals with high growth potential.

Multi Meat sires are now being used for the X Bred ewes; this looks very promising as they retain the robustness of the White Suffolk with the higher fecundity of the old Booroola type. Currently we are lambing down 2300 XB ewes; we would expect a lambing percentage of 130 to 140%. We now have a reasonable amount of X Bred ewes carrying the Booroola gene with most coming up as first lambing ewe lambs.

**Merino flock**

Currently 950 Merino ewes mated to Merinos are lambed down at Greenvale. From these come replacement ewes. All the younger ewes are joined to Merino for the fastest possible genetic gain. Maiden ewes generally have reasonably poor conception rates (70 – 80%), as they are too light and small when joined.

Culling commercial ewes on this farm is nearly a non-event. Only sheep with obvious faults are removed, as the main driver of genetic gain is with the rams so emphasis is placed on getting that end right and the rest will follow! Too many farmers cull ewes for not having lambs for example when the very reason they didn’t lamb was because they raised two last year and haven’t had time to get ready to mate again! (Especially in poorer seasons).

We expect a lambing percentage (to ewes joined) of around 95% from our Merino to Merino matings. This can vary depending on the season and percentage of maiden ewes in the mix. In the past we have used Holmes and Sackett benchmarking as a tool to analyse our enterprises, the average net profit/dry sheep equivalent for the three commercial flocks (wool, dual purpose and prime lamb) was surprisingly very similar for the five years (2000/2005).

**Ewe Lambs**

Since 2010 the seasons have been very good at Greenvale with good summer rain and plenty of feed through Summer and Autumn. This has provided the opportunity to mate ewe lambs as they have run on green feed over Summer and are very well grown out. MLA has a tips and tools handout that gives the rundown on the steps for joining ewe lambs. Basically if they are 7 months of age and more than 45kg in body weight they can be joined. Our last scanning results were:

- Merino ewe lambs (9 months at joining), 72% conception
- Early XB ewe lambs (9 months at joining), 90% conception
- Late drop XB ewe lambs (7 months at joining), 70% conception

This should result in an extra 850 lambs. This is an opportunity mating and while not a practice that will be undertaken every year it can definitely improve the farm’s output.

**20.4 Modes of operation**

**Timing of lambing**

It is always difficult to align peak feed production to the time of lambing. There is a bottleneck of stocking rate towards late winter and there is great debate amongst partners as when is the best time to lamb. Taking crop paddocks out of the grazing equation in late autumn compounds the problem. The problem with lambing too early in autumn is that stocking rate has to fall to accommodate the lack of feed at that time of year. Lambing early/mid winter can have problems with low feed growth and cold weather events that kill a lot of newborn lambs. Late winter can still be a problem with low feed growth (the feed starts to move here in the first week of August).

Early spring lambing can have problems with getting the ewes to conceive when they are losing weight in autumn. Also lambs that cannot be weaned onto and kept on green feed into summer really struggle to thrive and losses can be high (our dry feed is reasonably poor quality and gets worse as the summer goes on especially after summer rain events). Marking lambs in spring has challenges as each lamb has to be treated with anti fly treatment (any lamb marked after the end of the 1st week in
September) to stop them getting stuck as opposed to winter when no treatment is needed. Mid/late spring lambing can only be considered on a handful of ewes as the lambs need close attention and green feed to get them through the summer.

Most lambing times have been tried. This year looks to be going to work well. A mob (400) of XB ewes lambed down in early April with the idea of quitting most of their lambs before early September. Most of the ewes will lamb from the 1st June for 6 weeks. The ewe lambs and remates are to drop from 1st August for 6 weeks. All ewes are pregnancy scanned and the empties are rejoined to lamb from August (remates) with these also scanned and the oldest empty ewes sold off. Short joining times are very beneficial to management with two cycles normally enough to mate 90% of the ewes.

**Time of shearing**

Again, much debate has been had over when to shear. Shearing takes place in the last week in October through to mid November. Shearing has taken place at most times of the year over the years for different mobs. The main reason for shearing in October/November is to beat the grass seeds. Penetration of seed into the lambs is minimised as long as they are also run on non-penetrating paddocks (barley grass not brome and silver grass).

Autumn shearing has been tried for 5 years (mid 1990s) and we found the seed contamination of the wool made it difficult and unpleasant to handle, with the weight loss of the sheep dramatic over the month of seed drop (usually all December). This loss of weight was difficult to catch up. The tensile strength of the wool was little better because of this. Fly strike was also a problem in autumn shearing with breech strike common in spring. The extra cost of jetting was another reason to switch.

Winter shearing was tried on ewes pre lambing. This increased the ewe’s appetite at a time when feed was scarce putting both the ewe and lamb at risk if bad weather came.

Early spring shearing was the norm until the mid 1980s. The major problem in September was the lambs. They were not ready to wean and sometimes their marking wounds had not healed putting those lambs at risk of infection. Seed could also be a problem with this shearing time as in later seasons the sheep had grown a reasonable amount of wool and would pick up seed at seed drop. Also in wetter type years we couldn’t get the bellies of the sheep dry!

Second shear lambs (held for winter finishing) are shorn early April before it gets too cold. The pelts are then ideal length and maximum price can be achieved.

All sheep are crutched through April (all adults full crutched), with the pre shearing crutch taking place through October. It is difficult to get crutchers at this time of year as they are all shearing. As local shearer are used at least a few days of crutching can be done by them to break the back of the job. I endeavour to wean and bung hole all lambs prior to shearing and have purchased a Racewell sheep handler to help. In the past 3 – 4 seasons I have crutched all the lambs up a race with a helper holding each one. Now I should be able to do the job on my own. Dirty mobs are always given priority as flies can pose problems.

**Pregnancy scanning**

Pregnancy scanning of all ewes on Greenvale has become an essential part of the management program. We believe it is important to be able to identify and separate multiple bearing ewes from their single bearing sisters in order to supply extra nutrition for the multiple bearing ewes and to be able to remove empty ewes and give them a further opportunity to mate and lamb during the spring and to identify dry old ewes for sale. Mating periods are kept short at no longer than 5 weeks preferably. Scanning for multiples occurs at as close as possible to 50 days after ram removal. If scanning for pregnancy only, this can be done as early as 40 days after ram removal. When scanning for multiples it is essential to have an experienced operator otherwise scanning can become very slow and tedious with the final result being less than desirable. The current operator can scan 2500 head per day while scanning for multiples and drafting three ways.

Scanning has the potential to greatly improve annual lamb weaning rates and assists in keeping multiple bearing ewes in higher condition scores at weaning which aids these ewes to get back into
lamb quickly the following year. All empty ewes excepting the aged ewes (these are then sold) are put back to the ram for a spring drop lambing. The success of this mating depends very much on seasonal conditions at mating time. Poor seasonal conditions equals poor conception and vice versa. The spring lambing does however maximise our annual weaning percentage. This mating is timed to coincide with the mating of merino and XB ewe lambs to maximise the numbers of lambs born during this period.

Animal health
To run a viable business, costs need to be held in check. If costs are cut that lower production levels, the business will struggle to earn enough. Animal health is one area that needs good management to ensure money is not wasted but also to ensure animals are fit and healthy.

Trace elements
As alluded to in section 20.2 the trace element status of Greenvale’s soils is low especially in cobalt and selenium. This is countered by the addition of both selenium and cobalt pills (these pills stay in the rumen for the life of the sheep) to any sheep staying on the property. This basically fixes this problem. Any other lambs get a vaccination of B12. Some drenches with selenium added are also purchased as it costs very little extra. Cobalt and selenium pills last for approximately three years and are given to lambs. This means at 4 years of age they need to be done again.

A trial was conducted with Merino ewes on farm in 2003 to see the benefits of giving a second Cobalt pill at 4 years of age. The randomly selected group showed an increase of 250 grams more wool and an increase in body weight of 2.8 kg over the control group proving to us that a second pill needed to be given. This is now done annually. Copper is also an element that was low in our soils but in earlier days it was cheap and large amounts were added to the fertiliser, which has alleviated the problem as being a heavy metal it generally stays where it is put.

Internal parasites
The need for internal parasite control is high as sub clinical levels can eat away at production levels. Aged wethers are the most resistant sheep followed by ewes then lambs with X breed and British breeds being naturally more resistant than Merinos. Generally the more stress put on any given mob of sheep the more susceptible to worms they are. Therefore the periods of the year to really monitor closely are pre lambing, especially in poorer seasons and when the feed changes to dry feed in young stock.

Faecal samples are taken at these times by cornering the mobs, waiting 5 minutes then picking up 10 samples at random in plastic bags that are inside out. These are then sent into the vets to be tested. Lambs are always more susceptible to internal parasites as their resistance levels have not yet been built up. Grazing close to the ground lets the sheep pick up more worms (under 5 cm). So lucerne helps in this regard by letting the sheep graze further off the ground.

A typical cycle on Greenvale through the year is as follows:
- Pre lambing – monitor and drench mobs if needed
- Marking – only drench if things are tough (ewes only)
- Weaning – drench all lambs with an effective drench group
- 1st summer drench – change drench group
- 2nd summer drench – monitor and miss if possible

The aim is to give a maximum of 3 drenches a year although this is sometimes not possible especially in poor seasons. Our aim with genetic selection over time is to not drench at all (probably a tall order).

Lice
Sheep badly affected with lice take 3 years for the lice to get to those levels. This should not happen. Checking sheep that are rubbing is the best way to look for lice on farm. If lice are present you will see them. On Greenvale, being a closed flock to outside adult animals, lice treatment is generally not necessary. This was done following a combined AI mating of around 60 ewes (30 from 2 other studs) to cut veterinary costs. After all sheep had gone back to their respective homes it was noticed that we had contracted lice. These lice took some time to control. No lice control has now been done since 1996 at a considerable saving to the business. The purchase of finisher lambs has only been done.
from farmer to farmer and where the other producer well known and have been assured that they
didn’t have lice. As a precaution these lambs are still isolated to be finished separately to Greenvale
bred lambs.

**Vaccinating**

All ewes coming up to lamb are vaccinated with 6 in 1 vaccine. The lambs are done at marking then
again at weaning. This sets up the immunity for the 6 conditions covered by the vaccine. B12 and
selenium can be included in the 6 in 1 vaccine now so is used on any lambs. Any sheep or lambs that
may go into a feedlot situation would get another dose prior to going in.

**Ovine Johnes disease**

Ovine Johnes disease is a disease which has caused much consternation and heartache over the last
decade or so for Australian sheep producers. The original attempts to eradicate this disease were
sadly doomed to failure because of the insidious nature of its development in flocks. The Market
Assurance Program (MAP) is one of the planks used on this property to monitor that the flock is free
of the disease. Vaccination is a very good option for flocks that currently have the disease or trade
sheep at any time. Presently we do not vaccinate as it is an expensive procedure and with the MAP3
and closed flock our risk of contracting this disease is low. If however the disease was discovered
within the near vicinity of our property at some time in the future we would not hesitate to begin
vaccination and move from MAP3 to MAP3 (Vaccinated).

**Footrot**

Footrot occurs mostly in areas where pasture is damp for long periods of time hence it mainly affects
producers in higher rainfall districts. There is a range of types of footrot from benign to severe. All
types cause production losses due to lameness with losses increasing with the severity of the
disease. It is a notifiable disease and requires treatment or de-stocking to rid the property of it. Our
one experience with footrot in the early 1990’s convinced us that the best option is to cull all flocks
with a high degree of the problem and to treat the remainder effectively. Our method of control since
this outbreak has been to close our flock to all live adult animal introductions, and only introduce
lambs from known free areas and flocks. We are currently free of footrot.

**Ovine brucellosis**

This is a disease which causes rams to become infertile and can result in very poor lambing
percentages. With the property once being a seed-stock production property it was necessary that our
property be accredited free of the disease. That required a biannual blood test of all mature rams on
the property plus a random sampling and complete testicular palpation of all other rams over the age
of 6 months. This is no longer the case and we have not gone on with brucellosis testing, instead we
purchase rams from a known free flock (tested) and again control the problem by having a flock
closed to all adult live animal introductions apart from rams.

**Supplementary feeding**

On this farm the stocking rate would be far lower if no supplementary feeding was done. All grains fed
through summer and autumn are grain legumes being lupins (grown on farm) or beans (brought in).
This enables nearly all dry residues to be consumed before the opening rains (as the protein in the
grain stimulates appetite).

Most lambs are trained onto grain in the spring by feeding ewes and lambs before they are weaned.
They need to be fed at least 5 times at a ration of 100 g/head/day (calculated on number of ewes in
the mob) around 3 days apart. This trains around 70% of the lambs onto that type of grain. The rest
come on stream when the summer feeding starts. Young sheep are fed early in the summer on a low
ration 80 g/head/day so that their weight loss at change of feed (green to dry) is minimised. Silage
bales are also fed.

Merino lambs are by far the hardest to get through this period with XB lambs not suffering as much
because of their higher weight to start with. Lamb weights need to be maximised before change of
feed if lambs are to be taken into summer. Minimum weights for lambs at change of feed would be
around 25 kg although if kept on lucerne this is irrelevant.

Feeding of ewes starts usually in mid January unless some older ewes are in poor condition. These
decisions are made by eye and when handling them. If certain mobs need building up more grain is
given but a normal ration is only maintenance at 100 g/head/day fed twice a week on Mondays and
Fridays. Silage is fed at the same time as an addition to the grain. The grain is laid in a trail from a towable feeder with very little wastage (another plus for legumes!). Flushing ewes before the rams go in, is a proven technique to get more ewes in lamb in the early cycles. Prior to mating the grain ration is increased (double) for 8 feeds depending on condition of the ewes, feed on offer at the time and type of breed.

In 2005 there were some deaths from nitrogen poisoning in Merino and XB lambs on fresh lucerne in August. There were also problems with deaths in summer on fresh growth. To combat this spray topping these lucerne paddocks is done (this leaves dry residue to balance their diets) as it is thought that Winter cleaning (which leaves only lucerne through Summer) can lead to the pasture being too high in nitrates which leads to red gut (nitrate poisoning). Oats can also be used in feeders as a filler and different feed type to compliment the lucerne. This of course increases the cost of production.

Feeding is continued until paddock feed can take over so obviously enough grain and silage needs to be on hand. Late starts to the season make things difficult both financially and mentally as strong resolve is needed to keep pouring money down the throats of sheep when you know you are losing money. In the back of my mind I am always trying to be miserly with supplementary grain, as you never know when it will rain or how long you have to keep feeding.

**Finishing systems**

We tend to think of ourselves as breeder finishers rather than lamb producers as quite often these producers quit every lamb in spring and are at the mercy of the market place as the bulk of lambs come in. To avoid this we have finishing systems in place so that we do not have to sell off stores (never get paid for the genetics) and can finish every lamb we produce.

Depending on the spring we try to clear some lambs (usually a maximum of 400) by mid November, all other lambs are then shorn with the heaviest going straight onto lucerne. We have the ability now to put 1800 – 2000 lambs on feed taking between 3 – 10 weeks to finish depending on when they go on the lucerne and the weight they enter growth feeding. There are 6 lucerne cells on the farm. Each cell contains 4 X 13 – 16 ha paddocks fenced with electric fencing, with 5 targeting lamb finishing using rotational grazing. The other is used for the late lambs to get them through the summer.

Grain legume stubbles are also used. The general rule of thumb for finishing on lupin stubbles in this area is 10 lambs to the hectare will put on 10 kg in 3 – 4 weeks and this exhausts the stubble. This often needs to be added to by a stint on the lucerne to top the lambs up. Sometimes feed crops are sown (depending on the crop rotation) these are similar to lupin stubbles and are great for priming weaned lambs and keeping them out of seed. Through the year we do a feed plan and consider how many lambs we have and how many we can finish on what is available in the paddocks. The remainder (if any) are then factored into being finished on grain in a feedlot through summer/autumn. In the past we have finished up to 1500 lambs this way in a season. This acts as a pressure valve for the pastures as I am loath to sell unfinished lambs as I believe you are selling yourself short. Over time I have worked out the worst you can do in a grain/pellet finishing system (provided you produced the lamb and only feed for 6 weeks) is to receive a store price once costs are taken into account.

The feeder lambs are fed a ration of lupins approx 20% and oats 80% ad-lib with ad-lib silage as well. A trace element mix is also blended into the grain. The lot is run with as little labour as possible approx 30 mins/day to clean water, check feed and fill etc. We consider oats when very few others would as the lambs are very safe from acidosis and deaths are kept very low. The growth rates achieved are around the mark (250 – 280 g/day) with lambs on feed for 5 to 7 weeks to be ready for sale. Target weight is around 22 kg dressed on all lambs turned off. This can vary greatly due to seasonal conditions, price on offer etc. We have also purchased lamb finishing pellets that have been very good to use.

Feeding lambs as an enterprise is not a guarantee to make a profit as there are many variables to take into account, the main one being the death rate. If this cannot be controlled don’t even bother to start feeding.
20.5 Marketing systems

Selling options
The use of the saleyard system is kept to a minimum for all lamb sales with only odd little lots being offered this way (we usually regret that also). Old ewes are the only thing we take to market but with the increase in processors offering reasonable over the hooks prices for mutton, this is changing too. The main system we use is over the hooks selling. This way we know we are getting paid for what we produce with the onus being on us to deliver a quality article. Approximately 50% of Greenvale lambs go to export works and 50% to domestic works in any given year.

Both major supermarket players have reasonably aggressive pricing. Our supermarket lambs go through a local agent. The other two avenues for sale are export abattoirs and the local butcher. Both these sales are made with no agent. You must keep in mind part of an agents fee is Del Credere (where the principle gets paid if the works goes into receivership) so don’t write off all the fee of an agent as being a waste of time and money.

Depending on our thoughts at the time, forward sales to abattoirs have also been made. These contracts need to be taken with your eyes wide open as delivery can become a problem if seasonal conditions turn bad and the lambs do not finish as quickly. We always give ourselves a month in which to deliver if that is possible.

We also supply our local butcher 12 – 14 lambs a fortnight. These are slaughtered at Edenhope (100 km away). This gives me the opportunity to send off type skins as I don’t receive any money for them and have to get that back through an increase in the carcase price. I always try to deliver a quality product. I define this by.
- 2 – 3 score fat cover at the GR site
- 24 – 30 kg carcase weight
- Full muscle definition over the loin

Marketing strategies
Targeting sales at one time of year is risky as prices may be good, bad or ordinary. Measuring sales throughout the year has a real averaging effect. For this reason if lambs are ready for sale, they go. Smaller lots that are ready can go to the supermarkets but the major processors and freight constraints put minimum lot size at approx 100 – 150 lambs. We do still try to finish more lambs in summer when the processors sometimes have a lack of stock due to holidays (between Christmas and New Year is sometimes good). The drawback with this is that you have to be home to do this.

Winter is another time of generally higher prices. Holding lambs for this period has to be weighed up with the lower stocking rates and less room for ewes coming up to lamb. The 2010/2011 season was a beauty for finishing lambs (lots of summer rain) and brought with it the opportunity to value add by putting more weight on the lambs (3 kg heavier average turnoff than the prior year). As an industry we must always be mindful that lambs need to be turned off all year around for continuity of supply.

Quality assurance systems
Greenvale has been involved with Flockcare for 4 years from 2002 to 2006. This is the Quality Assurance scheme for the Australian sheep industry now managed by Meat and Livestock Australia (MLA). While our involvement in the scheme had been fairly painless we consider the benefits through being involved are scarce. The main reason we joined and went through the audit system was so we could supply Limestone Coast Lamb (lambs had to be Flockcare accredited).

To be fair to Flockcare it did make us more aware of things like use by dates when we purchased veterinary supplies, and gave us a good handle on inventories of both veterinary and agricultural products on hand. Apart from that all guidelines are basically what should be a part of everyday practice and bookkeeping on modern day farms.

20.6 Future thoughts
I believe the future of the Australian lamb industry is in good shape. Exports are strong and the domestic market is also strong due in part to the marketing campaign by MLA. The face of the Australian flock could dramatically change in the next decade. With the low Australian flock numbers
(and all other major sheep producing countries) there has been a price bubble through 2011 through lack of supply. This has also helped wool prices to rise. There will be an increase of composite type ewes and breeds to cater for pure lamb production. There has already been a large influx of newer type breeds to hit the scene taking in sheep that shed their wool, meatier Merinos and meat sheep for the more pastoral areas.

The only problem for each individual is that the more emphasis on one income stream (meat) the more it hurts when there is the inevitable downturn in that sector. This downturn could come very soon if Australia cranks lamb production up pushing us into over supply territory.

“Warrane” – Case Study
20.7 Enterprise description
J.M Stephen Pty Ltd purchased Warrane in 1969. The neighbouring property was bought bringing the land to 8000ha. J.M Stephen Pty Ltd is a family business run by the 5 directors, who are the sons of Joseph Michael Stephen. The majority of the on farm income comes from the company’s superfine wool operation; however the company also runs a first cross ewe operation and turns off beef cattle. Warrane is situated 25 km North West of Armidale in the New England region of New South Wales. The rainfall of the property is on average 825mm. The soils on the property vary with 25% of the property basalt soils, 25% sedimentary and the remaining 50% trap soils.

The sheep flock at Warrane has changed significantly since the company purchased the flock. This has seen a change from a Merino flock made up of western NSW bloodlines to a superfine Merino flock. This change was achieved by a change of bloodline as well as vigorous culling of animals that were too broad in their fibre diameter. The volatility of the wool market from 2003 onwards has seen the company increase its 1st cross lamb production.

Warrane is the company's only farm but the company does have off farm investments. The company directors meet quarterly to discuss business needs. Gerard Stephen is responsible for the management and operation of Warrane with the other brothers having management of the companies other activities

20.8 Farm problems
There are many challenges facing fine wool producers on the New England including wool contamination, internal parasites, drench resistance, lice and predators.

Grass seeds
Grass seeds do not have a major effect on production but have an effect on the price received for the wool clip and must be kept to a minimum. Care is taken to keep weeds under control as these can cause problems to the wool clip with vegetable matter. The major weeds on Warrane are Scotch Thistles, Bathurst Burr, Wire Grass and Blackberries.

Bathurst Burr and Wire grass found on the property are generally located on the sheep camps. These are controlled through annual spraying of these camps generally done by helicopter. Blackberry bushes are located throughout the property generally in the hilly areas of the property. An annual program that focuses on chemical management is conducted during the summer months. In winter bushes that are deemed to be killed by the chemicals are pushed together by heavy machinery where possible and burnt.

Internal parasites
Both worms and flies affect production at Warrane with summer through to early autumn being the seasons where the sheep are most at risk. Being in a summer dominant rainfall, this is the number one cause of lost production on the farm and all steps are taken to reduce the effect of worms and flies.
The major internal parasites that affect production at Warrane are Barbers Pole worm (*Haemonchus contortus*) and Flukes in the summer, while it is not uncommon to have problems with *Trichostrongylus* spp. throughout the winter months. Improper use of chemicals in the past on the property and the general district has led to massive issues with drench resistance.

An integrated pest management approach was adopted for Warrane to deal with internal parasites that includes:

- Use of cattle to keep pastures short in paddocks prior to sheep entering
- Paddock rotation to reduce time available for sheep to lay down worms in paddocks
- Regular worm monitoring through worm egg counts on the mob, which allows the company to be more strategic in its drenching. The company now drenches when the worm burdens reach a certain threshold. This has helped with reducing drench resistance.
- Applying correct drench practice, ensuring that we are drenching at the correct dosage that ensures that sheep do not get under or over drenched by weighing a section of the mob first.
- Rotating drenches throughout the year. This ensures that the worms that are resistant to some chemicals are being cleaned up by other drenches.
- Breeding for worm resistance. The breeding nucleuses on the farm have had individual worm egg counts done on the current drop every year since 1996. Within flock selection on lower worm egg counts breeding values was done until 2008, when the flock was entered into MERINOSELECT. Since then animals are selected on ASBVs for Yearling Worm Egg Count (YWEC). All sires entering the property either Merino or for the 1st cross operation have either MERINOSELECT or LAMBPLAN ASBVs for WEC.

Flies are also a problem on Warrane due to the summer rain and warm weather providing ideal conditions for breech and body strike. Prior to 2008 the company was mulesing every Merino as a way of reducing breech strike in the flock. With the growing public pressure on the cessation of mulesing by Australian sheep flocks the company have had to look at other measures to reduce breech strike.

Since purchase of Warrane by the company any animal that is body struck or breech struck is removed from the flock immediately. Selection pressure on the ewes at classing is ensuring that animals that are more susceptible to flystrike are not part of the Merino joining and are moved into the first cross progeny.

Warrane has not mulesed an animal since 2008. It is getting around this by increased selection pressure on breech & body wrinkle and chemical management.

**Lice**

Warrane has had problems with lice in the past with its wool operation. Lice impact on fleece weights and wool quality of animals leading to a decrease in wool prices. An intensive lice protection policy is implied at the property with chemical management the major way of dealing with lice. Any sheep that are brought to Warrane are quarantined from the main mobs until they have been treated.

**Predators**

Foxes have always been the major predator on Warrane. The company participates in a baiting program using 1080 baits coordinated with neighbouring property. Baits are laid in August prior to the commencement of lambing on the property.

Pigs and Kangaroos can also be a problem on the property as they compete with the sheep for resources. These are dealt with when their numbers get too high using registered shooters.

### 20.9 Sheep enterprises – Breeding nucleus

In order to have enough rams to join to the company’s Merino ewes the company has set up a breeding nucleus to breed rams for use. The breeding nucleus was established in 1995 and joins 400 Merino ewes to 6 – 8 rams joined individually each year.
Prior to 2008 the company has been using within flock selection in the breeding nucleus. Since 2008 the company has been entering the nucleus data into MERINOSELECT to get accurate benchmarking information on the nucleus using Australian Sheep Breeding Values.

The major traits that are measured and included in the breeding objective are:

- Body weight
- Clean Fleece Weight
- Fibre Diameter
- Staple Strength
- Worm Resistance

The nucleus is run the same way as most commercial Merino studs. The progeny are tagged and when possible mothered up. The progeny are then run and measurements are taken as per the measurement schedule outlined in Table 20.1 below.

| Table 20.1: Schedule of measurements for Warrane Breeding Nucleus progeny. |
|---------------------|---------------------|
| Age                 | Measurement         |
| Weaning (3 months)  | Weaning Weight      |
| Post Weaning (7 Months) | Worm Egg Count |
| Yearling (10 months) | Yearling weight Yearling fibre tests, Fleece weight |
| Hoggett (18 months)  | $2^{\text{nd}}$ Fibre tests |

As the data is captured it is collated and submitted to MERINOSELECT. Prior to their 1st joining the rams and ewes are classed on rankings of ASBVs for Yearling Fibre Diameter (YFD), Yearling Staple Strength (YSS), Yearling Clean Fleece Weight (CFW), Yearling Worm Egg Count (WEC) & Yearling Weight (YWT). Any animal that does not pass visual assessment for wool type and structure are immediately removed from the system.

Six – eight rams from the breeding nucleus are selected to be used in the nucleus again. If a ram is unsuccessful in being selected here it is syndicate mated to the commercial ewe flock. Older rams that are used in the nucleus are eligible for selection again if they rank higher than the current drop and are visually acceptable.

Every 2 – 3 years an outside sire is purchased to give the nucleus genetic diversity. Outside sires are selected on the similarity of wool type, structural soundness & MERINOSELECT ASBVs for YFD, YCFW, YSS, YWEC & YWT. In recent years there has been more of a selection pressure on clean fleece weight to lift the production of the flock.

The breeding nucleus has made solid genetic gain for fibre diameter, fleece weight and staple strength since it is being compared across the whole MERINOSELECT database. It is endeavoured that the breeding nucleus will continue to operate in its current format. Genomic selection if commercially viable is something that may be introduced to bring superior genetics into the breeding nucleus at a younger age.

20.10 Sheep enterprises – commercial flocks

Super fine wool flock

The Superfine wool operation produces the majority of the company’s on farm income. The commercial flock at Warrane consists of 13000 Merino ewes, 7000 Merino wethers and approximately 500 rams. Wool is produced for the Italian spinners market that target finer micron, bright white coloured and high crimping wools.

The average micron of the hoggets is 14.7 with average fleece weights being 2.2 kg. In the adult ewe flock the average micron is 16.2 with an average fleece weight of 3.8 kg. Merino wethers are run up until 5 years of age at which they are sold to the mutton market. Merino wethers are still a valuable part of the operation and are maintained for wool production due to their suitability to the hilly areas of the property. Out of the 13000 ewes currently on the property, 8000 ewes are joined to Merino rams.
in a self replacing system. This number has been reduced gradually from 13000 over the past 3 – 5 years due to the instability of the wool market and the high lamb prices.

All wethers and ewe hoggets are micron tested prior to shearing and drafted into separate micron groups to ensure an even line of sheep are shorn and that bales have a reduced variation in fibre diameter.

Cross Bred flock
In 2005 as a response to a falling wool market and increasing lamb prices, a decision was made to go into prime lamb production. Warrane was involved in prime lamb production in the early 1990’s but this was phased out due to low prices at the time.

Of the 5000 ewes currently joined in this part of the business there are 4000 ewes joined to Border Leicester rams. The rams are sourced from local studs using LAMBPLAN ASBVs. Rams are selected on ASBVs for Number of Lambs Weaned, Worm Egg Count, Post Weaning Growth, Muscle and Fat. All of these first cross Merino Border Leicesters are sold in March each year by contract to the Riverina. Here they are grown out with the wether portion slaughtered once they hit correct weights and the first cross ewes sold in October.

Another 1000 ewes are joined to Poll Dorsets. The Poll Dorset rams are sourced from local studs that are in LAMBPLAN. Rams are selected on Post Weaning Growth, Muscle and Fat and Worm Egg Count ASBVs. Due to the size of Warrane and labour shortages, birth weight is looked at in rams with no rams over 0.6 for Birth Weight ASBVs being purchased. All progeny form the Merino Poll Dorsets are sold by contract to the Riverina where they are slaughtered once they hit correct weights.

20.11 Modes of operation

Timing of lambing
Lambing in the New England can be problematic due to cold weather during the winter months. Therefore timing of lambing is critical, as a cold snap in winter can have catastrophic effects on lambing. With weaning percentage a major profit driver on the farm it is vital to the financial viability of the business that losses at lambing are kept to a minimum.

The Border Leceister x Merinos are joined prior to the Merinos x Merinos and generally lamb in early September. The Merinos follow in late September. By this time the cold weather has generally passed and the first of the spring feed has commenced. Ewes are run in paddocks that have adequate shelter so that they have adequate protection from the cold weather.

Shearing
Shearing at Warrane is very important due to the value of the wool clip to the on farm income. To ensure that the variability in fibre diameter is reduced within bales sheep are shorn in micron groups. Each sheep on Warrane is micron tested using the OFDA 2000 prior to their first shearing. Sheep are then drafted into micron groups which they are run in until the animals are shorn.

Although the shearing shed has the capacity for 6 shearsers the shed only generally operates with 4 shearers during shearing to ensure that the best possible clip preparation occurs. Shearing is broken up with the ewes shorn each year in July and the rams, hoggets and wethers in September.

In order to make shearing as efficient as possible Warrane redesigned the shearing shed in 2002. During design workplace safety was looked at and the following changes were made:
- Raised boards: by raising the board where the sheep are shorn it reduces the strain placed on shed hands in picking up fleeces. Shed hands can now pick up the fleece at hip level, not having to bend over in the process.
- Slanted catching slopes: the catching slopes were slanted rising from the start of the catching pen away from the board. This has made it easier for shearers to catch sheep as the sheep naturally face uphill. By reducing the strain placed on shearers it has made it less stressful on shearers.
Redesigned shed floor: the shearing shed was redesigned to reduce the distance from the board to the skirting tables, the skirt tables to the classing table and the classing table to the wool bins. With over 1000 sheep shorn each day this has reduced the walking distance by the classers and shed hands by several kilometres each day.

**Pregnancy scanning**
All ewes that are joined at Warrane are pregnancy scanned. The major reasons for pregnancy scanning at Warrane are to identify the ewes that have failed to fall pregnant and the ewes that are carrying multiple lambs. Ewes that are recorded dry are given one more joining, with a failing to fall pregnant seeing them sold as cast for age ewes. After scanning the ewes are drafted so that the ewes carrying multiple lambs can be managed separately. Joining at Warrane generally goes for 5 weeks with scanning following about 3 weeks after the rams come out.

**Animal health**
To run a viable business costs need to be held in check. If costs are cut that lower production levels, the business will struggle to earn enough. Animal health is one area that needs good management to ensure money is not wasted but also to ensure animals are fit and healthy.

**Vaccinating**
All ewes coming up to lambing are vaccinated with 6 in 1 vaccine to confer passive immunity to the lambs. The lambs are vaccinated at marking followed by a booster at weaning. This sets up the immunity for the 6 conditions covered by the vaccine. B12 and selenium can be included in the 6 in 1 vaccine now so is used on all lambs. Any sheep or lambs that may go into a feedlot situation would get another dose prior to going in. Young rams also get another dose mid summer as a precaution against enterotoxaemia on fresh lucerne.

**Ovine Johnes disease**
Ovine Johnes disease has caused the general Australian sheep flock a lot of issues. Warrane has not had any problems with OJD to date and has done so by a very strict adhearance to the OJD status. Warrane is currently MN3 (monitored negative 3) and aims to keep this rating by regular monitoring. Any sheep introduced to Warrane is not allowed entry unless they are from an MN3 accredited flock.

**Footrot**
Warrane has had problems with footrot from time to time due to the property being in a high rainfall area. When an issue arises with footrot all is done to amend the problem as quickly as possible. This involves checking the feet of all sheep on the property and removing animals whose feet are unacceptable, animals are then re inspected in the following months to ensure that all animals are clear.

Foot paring is done on all sheep on the property annually to ensure that their feet are correct and toenails pared to an acceptable level. The company purchased paring sheers powered by an air compressor in 2000 and an auto handler that turns the sheep over in 2003 to increase the efficiency of the process.

Foot bathing using formalin was done up until the 1997, from 1997 to 2004 the company used a variety of treatments to help prevent footrot.

**Ovine brucellosis**
Warrane has not experienced any problems with Ovine brucellosis. As the company does not sell rams from the breeding nucleus, a monitoring program is not currently in place for Warrane. Rams purchased must be inspected and declared brucellosis free by a vet on sale day.

**Supplementary feeding**
As Warrane is located in the New England, it experiences a decrease in feed availability during the winter months as the high number of frosts over this period see pastures dry out. In order to ensure that production is not affected animals are supplementary fed. During this period all wethers and ewes are fed, with increasing rations given to pregnant ewes and ewes that are scanned carrying twins.
Supplementary feeding is also used in the early months of the new year in order to get the first cross ewe lambs and wethers up to an acceptable weight as part of the contract agreement with the lamb buyer.

### 20.12 Marketing systems

**Selling options**

Warrane generally sells all of its wool at open cry auction. The company has used forward selling in the past for portions of the wool clip however has not done so in recent times. Wool is sold out of Newcastle which is where the majority of Australia’s superfine clip is sold. Clips are not always sold if the price received at auction is not as high as the valuation done on the clip prior to sale.

The first cross ewe lambs and wethers at Warrane are sold each year to a grazer in the Riverina who then finishes the wethers and joins the ewe lambs prior to selling at the Wagga Wagga Saleyards. This arrangement has been in place since 2002 with a handshake agreement to continue into the future as long as it financially viable for both organisations. The company made this decision after looking at the feed required to finish the first cross lambs versus the feed requirements of the Merino and cattle operations.

**Marketing strategies**

The company has looked at a couple of strategies to increase the value of the wool clip. The Warrane Merino wool bales are all branded with the Australian Superfine Wool Growers Association (ASWGA) label. Using the label requires a certain level of quality assurance has been met and is available to flocks that are members of the ASWGA. Examples of the QA requirements include dogs not being on the shearing floor, coloured or black wool sheep to be shorn separately, smoking being absent from the shearing floor and the shed being in a clean and safe state.

Warrane was also a part of the Ausfine growers group for 7 years. The group had been set up by a group of superfine wool growers who would all follow a set criteria in their clip preparation in order to display and brand their wool with the Ausfine logo. The company decided to end this association after an analysis of price received versus the extra clip preparation required showed it was not worth the cost of inputs. An example being skirting requirements.

### 20.13 Summary

This topic has outlined the factors affecting production and management strategies on two diverse sheep enterprises. It shows that management strategies change due to geographical location and also due to the major products (wool or meat) being produced on that property. “Greenvale” has major constraints due to limiting soil and pasture types which affects how they feed and manage their animals. “Warrane” has less problems with these types of constraints but must manage their flock carefully to ensure the best price is received for their wool. This involves more management inputs when it comes to management of individual mobs and shearing management. Both of these enterprises need to work within their particular constraints to ensure they remain productive and profitable in the changing Australian sheep industry.

### Readings

There are no readings provided for this topic.
Revision Questions

1. Describe how management strategies differ between properties due to geographic location, soil types and enterprise types.
2. What other marketing strategies could the two properties use for their products?
3. How do you think these enterprises may change into the future considering your knowledge of the sheep and wool industry and how it may develop in the future?