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Lambs are finished in the Horsham Stock Feeds feedlot for a maximum of six weeks.

Feedlot gives **new** entrants **valuable glimpse**

By Patrick Francis

Learning from the practical experience of other farmers is the best way to launch into a new business. Near Horsham, Victoria, local feed miller Horsham Stock Feeds has established its own lamb feedlot to test rations and provide farmers with a commercial facility from which to learn. Each week 30-40 farmers and industry representatives visit the feedlot to find out about management, layout, animal welfare and economics.

In March last year owner of the business, Peter Velthuis, established the feedlot on his farm where the stock-feed mill is situated. Its construction was a natural progression for the company, which constantly looks at new feedstuff and supplements to enhance its livestock rations. These can be tested and fine-tuned with its own sheep before being commercially manufactured.

Having its own feedlot also helps in providing advice on management and facilities. Mill co-owner, Lindsay Davies, is responsible for designing the feedlot and overseeing its operation with manager, Lance Deleeuw.

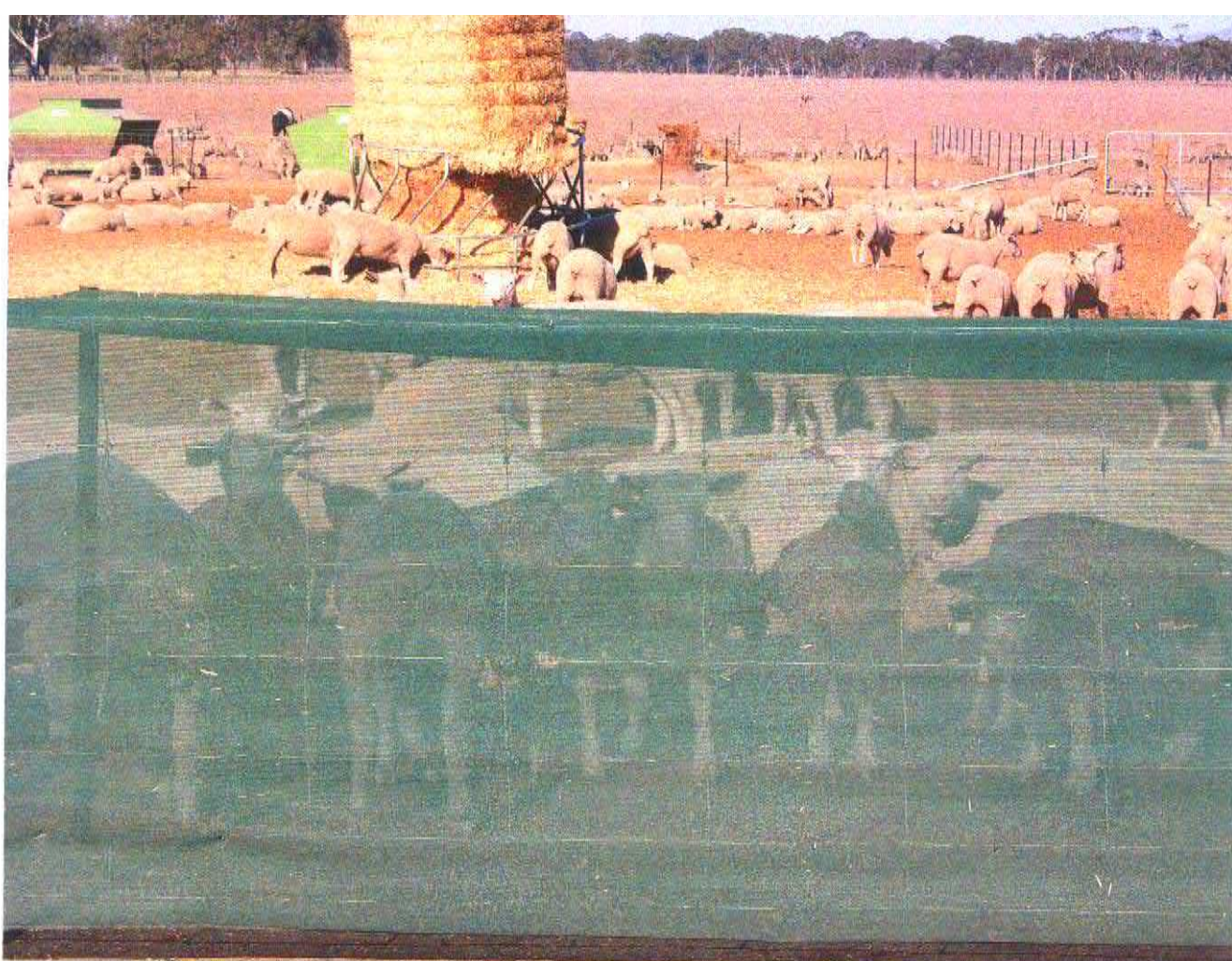


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ABOVE: The feedlot uses shade mesh to protect lambs from wind and sun.

RIGHT: A key component of successful lamb nutrition is *ad lib* access to quality roughage. Large bales also improve welfare by providing clean, comfortable bedding and protection from weather.



Davies emphasises to farmers entering lamb lotfeeding or sheep confinement feeding for the first time that a key factor to success is visual observation of animal behaviour.

"It's important to spend time each day watching what the lambs or sheep are doing," he says. "By doing this, some obvious issues can be addressed which may otherwise be easily missed."

As an example, Davies was visiting a client's ewe confinement feeding operation that had been set up correctly and day-to-day management was right, but there was a problem — the ewes were 'hollow' (showing signs of dehydration). The owner had not realised, but Davies noticed it straightaway. Mortality was higher than it should have been. The sheep were not drinking enough water.

On closer examination, Davies discovered while the bore water salinity was not too high at 2200 EC, it was greater than the sheep were used to in paddocks where they drank from creeks and dams with lower EC water.

Another issue was water temperature. The troughs were being supplied via poly pipes laid out on the surface that allowed the water to heat up. The solution for the sheep was simple — supply fresh water from a nearby creek and increase trough space.

"Ewes will go for a drink about eight times a day and drink about one litre each visit," Davies says. "With 1500 animals in each pen, there needs to be sufficient space available to drink as they require."

Feedlot design

The Horsham Stock Feeds feedlot is set up with two rows of eight pens, each holding about 350 animals providing five square metres per animal. Lane ways and gate position are designed so moving animals in and out is a simple one-person operation (figure 1 and 2).

Two self-feeders per pen provide five centimetres per head access. With 1.7-tonne capacity, they only need filling twice a week. Compared to using troughs which need daily feed distribution, the self feeders save considerable time and there is less feed loss in wet weather.

Water is supplied in a single four-metre, 200 litre capacity trough. Davies believes a longer, smaller capacity trough would be more suitable as it would have less surface area to collect dust, and when cleaned out, less water is wasted.

Summer crops lack roughage

While summer crops have been the traditional finishing feed for lambs in southern Australia, Lindsay Davies contends lamb growth rates may not reach their potential on this green feed alone.

He thinks lambs should have high-quality roughage such as barley straw available while on the fodder crop.

"We think summer crops need more effective fibre and bi-pass protein available to the lambs," he says.

Davies has suggested a novel strategy to supply these and double the stocking rate of the fodder crop. He uses an example of a traditional system of 3000 lambs grazing 25 hectares of fodder crop.

This stocking rate can be doubled by 'parking' 3000 lambs on an adjacent confinement block with ad lib quality straw plus HSF Premium Sheep liquid molasses supplement. The idea involves swapping each mob of 3000 lambs to give them 12 hours grazing the fodder crop and 12 hours on straw.

"Once they become adjusted to the system, the lambs will eat more fodder crop each day and their growth rate will improve. It is possible to run the same 'parking' system and improve growth rate performance of lambs on high-quality spring pasture," Davies says.

Table 1: Expected growth rate for different lamb genetics

Type	Growth rate range (grams/head/day)
Merinos	350 - 410
First-cross	350 - 430
Second-cross	400 - 500

Table 2: Feedlot entry weights for different markets

	Trade lamb	Merino lamb	2nd-cross lamb
Entry weight kg	35-38	33-38	30-35
Time on feed	6 weeks	6 weeks	6 weeks

He says lambs are fussy drinkers and will not drink if dust covers the surface. In windy conditions, troughs are cleaned daily, and every second day in still conditions.

One row of pens has shade cloth wind protection placed on, and over, the west- and north-facing fences. A 60% windproof cloth is used as some air circulation through the material is important.

Davies is planning a new approach to wind and shade protection with a swastika-shaped fence in the middle of each pen to hold the cloth. This will provide protection for all prevailing winds.

Roughage is provided at two points in each pen and well away from the feeders. Davies says continual access to good-quality roughage is important. While the pens do have racks for the bales, it becomes practical to simply drop large bales in the pen and allow the straw to build up on the floor over time.

This floor straw becomes an asset as it provides a comfortable, clean camping area for the sheep. In winter it prevents them becoming dirty and releases heat from microbial breakdown.

Lamb genetics

Davies is prepared to buy Merino, first-cross and second-cross lambs for feeding. In general, growth performance is best with second-cross lambs but the economics of feeding can often be better with Merinos, as their purchase price can be significantly lower per kg liveweight than crossbred lambs (table 1).

Entry weights depend on markets being fed for but two important rules of thumb Davies has is not to feed for more than six weeks, and not to persevere with shy feeders. General entry weights for different classes of stock are shown in Table 2.

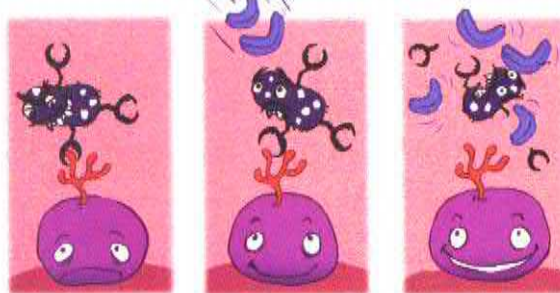
Induction

Every effort is made to keep lambs from the same breeder together. When more than one batch of 300 is bought, they are fed in adjacent pens. Lambs are delivered to the pens direct from the truck where they have access to quality straw and water.

They are not inducted for 48 hours to give their rumen time to readjust after the stress of yarding and transport. On induction they are weighed, drenched, vaccinated and a decision made on shearing.

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Clean, cool water is critical for lambs as their intake is reduced if the surface is dust covered. The feedlot is looking for longer, lower volume, lower surface area troughs, so less water is wasted every time they are cleaned out.

The Fort Dodge combined 5-in-1 vaccine/drench/vitamin B12 injection is being trailed at the moment. Davies says pulpy kidney is an issue with lambs in the last two to three weeks of feeding. This is believed to result from a failure to provide long-term immunity by giving a second injection four to six weeks after the lamb marking 5-in-1 shot. The combined injection saves time treating lambs and it is hoped it will reduce the incidence of pulpy kidney.

Davies has an interesting approach to shearing lambs – optimise skin value on each lamb and avoid shearing, if possible. So lambs with 15-20 millimetre staples, providing dust has not penetrated to the skin, may not have to be shorn providing their belly wool is removed.

"When the bellies are shorn, they stop growing fleece wool and redirect nutrient to belly wool growth," he says.

Lambs are introduced to their feedlot ration over 10 days of trail feeding in the pen. It starts with 250 gram/head/day, rising to 700g/head/day on day seven, and ad lib feeding out of the feed bins on day 10. This restricts intake, so no grain poisoning occurs.

All the time they have ad lib access to good-quality straw bales as grain intake increases appetite for fibre (straw). Any lambs identified as shy feeders in the first 10 days are removed and sold. At day 16, lambs looking 'hollow' are removed and sold.

Feeding

Feedlot lambs receive just the one diet, 16% Feedlot Lamb Ration. This is a whole barely based ration with protein meals, added in a pellet. The grain and pellets are blended with a liquid molasses supplement, which is manufactured using the patented AGRiliq technology.

Nutrition consultant Jim Wade, North Tamborine, Queensland, helped Horsham Stock Feeds with introducing AGRiliq after it was developed in Queensland by Paul Makepiece.

Wade says the AGRiliq process converts molasses sugars to glucose to optimise energy usage in the rumen. The glucose also binds with urea to produce a safe protein source with availability over 6-12 hours.

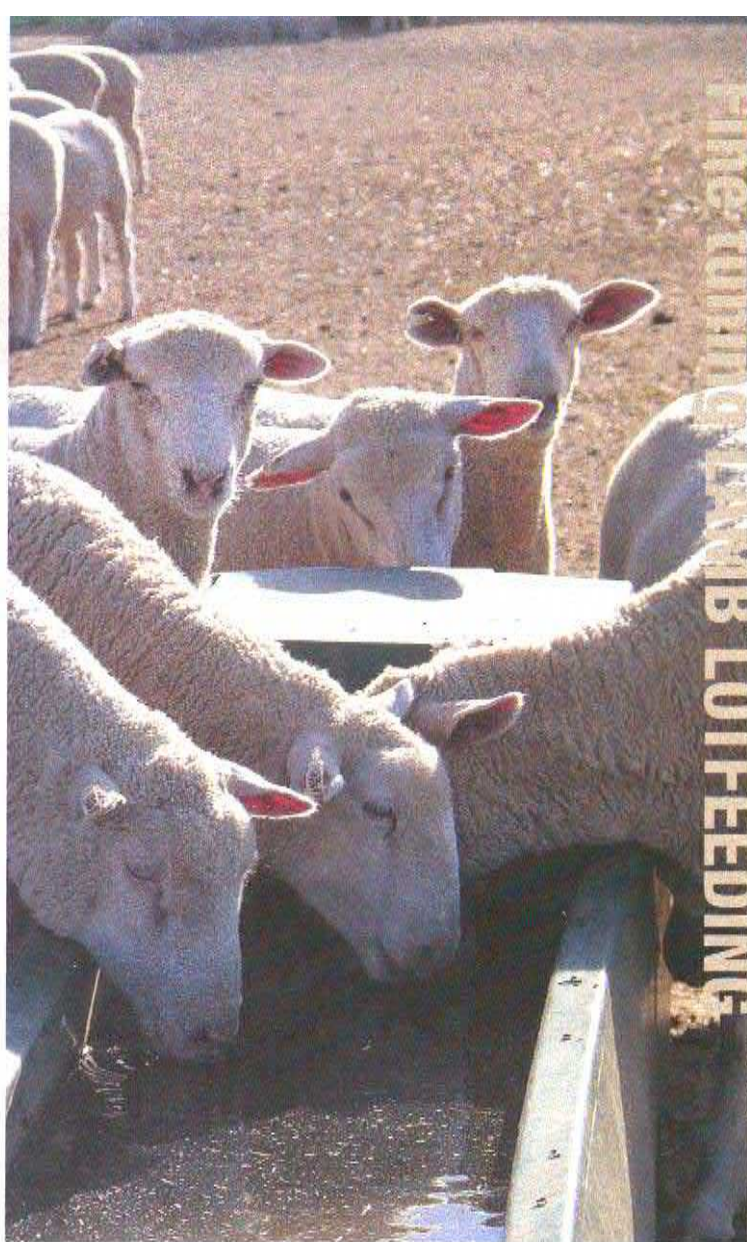
"This is a big advantage over supplying urea in its standard way, which is nutritionally inefficient as excess ammonia is excreted in urine and, in some cases, can be toxic," Wade says.

Another feature of the technology is that it enhances feed volatile fatty acid (VFA) production by 7% (compared to the same ration without AGRiliq) with the most rumen beneficial VFA, propionic acid increasing by 42%.

"There is also a reduction in the greenhouse gas methane, so not only is this technology increasing energy available to the sheep, it is helping with an environmental problem as well," Wade says.

The overall nutritional impact of AGRiliq in the ration, he says, is that it helps keep the lamb's rumen pH stable due to consistent availability of protein and energy over time. The net impact is better feed conversion efficiency and lamb performance.

Davies notes there are few flies in the feedlot because the lambs'



FINISHING LAMB LIT FEEDING

faeces are low in protein and energy, so are less attractive for laying eggs in.

Horsham Stock Feeds now includes AGRiliq in all its ruminant rations (in different proportions for sheep, beef cattle and dairy cattle). It can also be bought as a liquid supplement and fed in troughs to sheep or cattle, with access to large quantities of dry matter as standing feed or in bales.

Marketing

Most lambs Davies feeds are bought with a contract sale price negotiated. He says this applies across all lamb types. Occasionally if the purchase is favourable, lambs will be bought without a contract.

This applies particularly to Merinos where there is sometimes less demand in the saleyards. Buying these animals to target finishing times when crossbred lambs are in short supply can be a profitable strategy.

At induction, lambs are sorted according to weight. After five weeks they are weighed again and those close to specification identified. The next week (after six weeks on feed), the identified lambs are sent for processing.

Usually 85%-90% of animals make specification. Any that are too light are kept in the pen for another week before selling. These animals are not mixed with others to avoid stress.