



Fed well or bred well? Here's some serious food for thought

The sheep industry has been plagued by a tradition of overfed sale rams rather than paddock-reared sires bred for the demand of commercial conditions. Liz Rymill writes that with the advent of Australian Sheep Breeding Values that is all starting to change.

Bred not fed: Glenwood Merinos are sold straight out of the paddock and never 'show' fed, avoiding problems with obesity and infertility.

At a glance...

- ▶ **The continued uptake of Australian Sheep Breeding Values (ASBVs) in the Merino industry is providing for a more "level playing field".**
- ▶ **Glenwood's commitment to producing high-performance rams has seen the stud recently become one of the first in the Merino industry to introduce a Client Code of Ethics**
- ▶ **ASBVs allow producers to rapidly increase genetic gain while focusing on breeding a truly all-purpose animal with improved fertility and feed efficiency, while maintaining wool cut.**
- ▶ **Obesity in rams should be of paramount concern to Merino ram breeders because it can have a profound effect not only on fertility but also on the ability of the ram to optimally transfer his traits to his progeny.**

Overfeeding rams has been one of the worst-kept secrets practiced in the sheep industry for many years – despite concerns this may limit ram breeding performance.

However, the continued uptake of Australian Sheep Breeding Values (ASBVs) in the Merino industry is providing for a more 'level playing field' and delivering immediate and long-term benefits for the animals, purchasers and the wider industry.

As the ram selling season draws to a close for another year, buyers chasing the biggest rams were once again on display.

After all, the 'bigger is better' mentality is the usual way to estimate growth potential if ASBVs are not employed to assist ram selection.

WRONG MARKET SIGNALS

But this gives breeders the wrong market signals, encouraging them to feed heavily to get bigger rams. And so the cycle continues.

It takes courage to break away but the Smith family has been breeding Merinos

on their property Glenwood, at Wellington, NSW, since 1898 and promise a 'no smoke and mirrors' approach to clients.

Norm and Pip are the fourth generation on Glenwood and are pioneers of ASBVs in Merinos for key economic traits such as early growth, muscle and fat.

Glenwood is also renowned for producing superior quality wool.

Such is Glenwood's commitment to producing high performance-rams the stud has recently become one of the first in the Merino industry to introduce a Client Code of Ethics.

Glenwood's Code is designed to provide clients with confidence in the performance of the genetics and in all business dealings with the stud.

"There has been way too much 'smoke and mirrors' in the Merino stud industry over the years," Norm said.

CLIENT SUCCESS

"Our clients' success is our number one priority at Glenwood which is why we sell

straight out of the paddock and do not shed our rams," he said.

"ASBVs allow us to rapidly increase genetic gain for our clients and focus on breeding a truly all-purpose animal with improved fertility and feed efficiency, while maintaining wool cut. "Glenwood Merinos are also low maintenance. We stopped mulesing eight years ago and a large number of our 2012 sale team were trait leaders for early breech cover."

Norm explained show feeding is aimed at presenting rams at their best for the prospective buyer.

However, he said in the long term this is not allowing true genetic expression and in fact may hide carcass and structural faults.

LEVEL PLAYING FIELD

He is adamant the use of ASBVs is the only way to truly compare animals from across Australia on a level playing field.

"It is simple – rams reared and presented under paddock conditions are more mobile and fertile and therefore get more ewes in lamb, which at the end of the day means the commercial grower gets better value for money," Norm said.

"Our enthusiasm for this approach has been backed up by evidence from commercial breeders relating their results," he said.

"Rams with both improved serving ability and improved genetics through selection based on ASBVs have the potential to dramatically increase returns."

Practicing veterinarian and research scientist Peter Howe agrees, saying many of the problems which limit ram performance are the result of overfeeding rams – both as lambs and again in the run up to sales.

CRITICAL ISSUE

Dr Howe believes obesity in rams should be of paramount concern to Merino ram breeders because it can have a profound effect not only on fertility but also on the ability of the ram to optimally transfer his traits to his progeny.

"Obesity is a major risk factor for infertility in many species including man, where it is commonly linked to low sperm counts," Dr Howe said.

"Obesity and stress, acting at the same time, also escalate the risk of infertility," he said.

"For rams stress might take the form of a routine truck ride to the show, sale or AI centre.

"Obese rams have abnormally high levels of female hormones and lower levels of testosterone, that is, lower levels of the hormones which drive sperm production and result in smaller testes than they would have if they were in a less obese condition."

Dr Howe explained the polypeptide hormone adiponectin, which regulates



All in the family: The Smith family at Glenwood - from left, Pip, Amber, Maggie, Daisy, Norm, Will and Chloe -- are obsessed with rams being bred for commercial reality.

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glucose and fatty acid breakdown, comes from fat tissue and its level in the body is negatively correlated to stage of pubertal development and testosterone levels.

OBESITY IMPACT

He said when adiponectin levels are high, testosterone levels tend to be low.

"The production of adiponectin decreases throughout pubertal development and the decrease is more pronounced in obese males," he added.

"Adiponectin is an anti-diabetic and also prevents thickening of the artery walls as well as the accumulation of fatty material, so it is an important hormone.

"Obese males tend to mature later than their less-obese counterparts.

"These are the 'rules of thumb'

"In obese animals there are generally lower testosterone levels. There are probably many reasons for this but the primary one is oestrogen levels tend to be higher and this leads to lower levels of gonadotrophins, the hormones driving sperm production and reproductive function generally.

"Sex hormone binding globulins (SHBG) are also present at lower levels and further contribute to lower testosterone levels."

'CATASTROPHIC EFFECTS'

He also said lowered testosterone levels can have "catastrophic effects not only on fertility but also on the ability of the ram to

have his traits passed on to his progeny".

Because the seminal vesicles glands are driven by testosterone, a deficiency in this hormone results in lowered levels of the protective proteins in the seminal plasma that protect the sperm DNA from damage.

Sperm DNA fragmentation also tends to be high in obese rams.

Fat produces the enzyme aromatase which drives the conversion of testosterone and androstenedione to oestrogens (aromatization of the androgens).

"You could say by feeding our rams to the state of obesity we are feminising them," he said.

According to Dr Howe, oestrogens are only required in small amounts compared to testosterone to have a biological effect.

The oestrogens also enhance the negative feedback effects on the hypothalamus in the brain to suppressing the release of the major hormones that drive sperm production.

"Clearly when any of the latter circumstances occur we cannot hope for optimum gene expression so we can also not hope to record accurate results in sire referencing schemes and estimation of breeding values.

GOOD RAMS WASTED

"Very good rams are regularly crucified as sires when their progeny do not meet expectations.

"So why do stud breeders feed their ►



Paddock power: Trevor and Sarah Ryan put emphasis on commercial so all sale rams are paddock run and given every opportunity to express their faults before sale day.

rams to the point of obesity?

“Most simply want their rams to be as well grown as they can possibly be. The rams more often than not live in the ram shed and are fed ad-libitum amounts of hard feed and enjoy minimal normal sheep activities.

“Such feed and lifestyle is usually foreign to, but well tolerated by, ruminants.

“They grow and very often become obese, to extremely obese.

“They satisfy the popular paradigm of what a stud ram should look like but often are rendered temporarily to permanently compromised as stud animals in the true sense,” Dr Howe explained.

DORPER STUDY

A study by PJ Fourie et al in in Bloemfontein, South Africa in 2003 titled, Scrotal, testicular

and semen characteristics of young Dorper rams, looked at the influence of two feeding regimes – intensive and extensive – on certain reproductive characteristics of young Dorper rams.

The results from the study suggested “intensive feeding of young rams has some detrimental effect on their semen quality as a result of excessive scrotal fat deposition that may interfere with the testicular thermoregulatory mechanisms essential for optimal spermatogenesis.

“The selection of breeding rams based only on scrotal and testicular measurements is not sufficient.

“If rams are intensively fed, the testicular measurement may look acceptable, but the ram’s reproductive potential may have been hampered by excessive scrotal fat deposition, particularly in the neck of the scrotum.”

FIRSTHAND EXPERIENCE

Trevor and Sarah Ryan run Richmond SRS Merinos at Quandialla in NSW.

Trevor said he has experienced firsthand ram buyers intent on taking home overfed rams, believing them to be superior performers, only to discover they cannot perform under commercial conditions.

“Each year large sums of money are outlaid at various sales across the country for rams which have been meticulously prepared, shedded and fattened so they are presented looking completely different to an animal raised in its natural environment,” Trevor said.

“These rams usually have no breeding values to display their true genetic worth and

purchasing one for any amount of money would be purely guess work and risky at best,” he said.

Trevor said it is crucial to “educate and inform buyers for the future development of the Merino industry”.

He said rams which spend most of their lives on self-feeders or show feed mix will always be bigger and fatter with more muscle depth than their paddock run counterparts.

BUYER DISAPPOINTMENT

But the true carcase traits of over-fed rams are not visually expressed, with eye muscle depth and fat cover being especially difficult to determine.

“Once again the buyer is often disappointed as these rams usually go backwards when they are taken off their extreme plane of nutrition,” Trevor added.

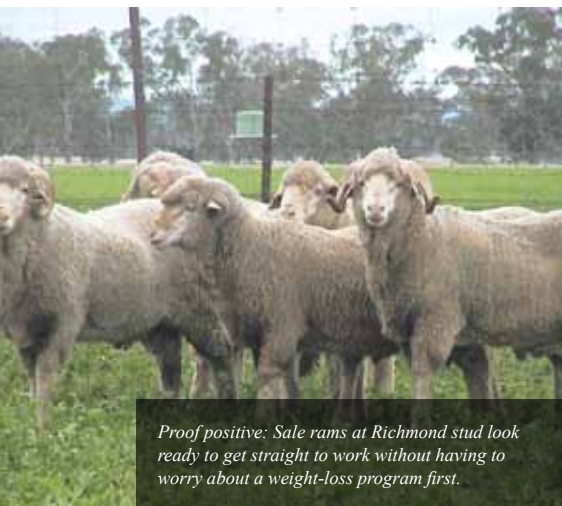
“And more importantly, their progeny are never able to achieve the growth rates that are expected of them,” he said.

At Richmond, all sale rams are paddock run and given every opportunity to express their faults before sale day.

They are also extensively tested with data collected for multiple traits and have pedigrees going back, in some cases, up to six generations.

“All this helps us to develop increasingly accurate breeding values which gives our clients the confidence to make educated decisions when selecting their future sires.” **FA**

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Proof positive: Sale rams at Richmond stud look ready to get straight to work without having to worry about a weight-loss program first.