

GENSTOCK NEWS

SPRING 2020

ANIMAL BREEDING & FLEECE TESTING SERVICES

PO Box 21 Kojonup Western Australia 6395
Phone (08) 9834 1038; Fax (08) 9834 1062
EMAIL info@genstock.com.au
WEBSITE: www.genstock.com.au

Vasectomised Rams Proving Beneficial In Improving AI Results

AI programme results have provided strong evidence that utilising vasectomised rams achieves the optimum "ram effect". This allows the ewes to cycle prior to CIDR insertion or ram introduction. Coupled with ensuring the ewes are on a rising plane of nutrition, has resulted in great conception results for many farmers. Please contact us to book in some rams to be vasectomized. Please see the article over the page for more information



Teaser wether synchronizing ewes prior to AI at Karinya Suffolk Stud

A Word from Craig on the Sheep Meat Outlook

At the time of writing, timely rains have helped ease the shortage of stock water across parts of the state. Whilst the south coast has received dam filling falls, many parts of the state are still in need of run off rains.

The 1.5 million sheep that have headed to the Eastern states will have a drastic effect on sheep availability to slaughter for several years to come. This depleted supply should ensure continued strong prices for suitable Lambs/Mutton in our state, however, processors will be competing for the limited supply with perhaps dire consequences for some of them.

The WA sheep flock drastically needs rebuilding to a sustainable level to maintain our industry for all players. Reproductive rates and lamb survival need to improve, and ewe lamb mating needs to become more widespread. WA sheep producers need to be targeting weaning percentages between 130 - 150%. With current WA flocks only averaging ~90% there is a huge room for improvement that will significantly increase overall profitability.

The current worldwide Coronavirus pandemic has not yet had a major effect on the sheep meat industry. Food service (restaurant) demand has been drastically affected, however Retail (supermarket) demand around the globe has lifted as consumers are forced to produce more home cooked meals. Several Victorian processors have had to close temporarily due to COVID 19 outbreaks and the sheep meat price in the Eastern States has fallen recently.

China's demand for product has been compromised by the current political tension, however they are still our largest importer of sheep meat by volume to date. Their demand for lower value cuts has not been greatly affected but they have become increasingly more price conscious.

WAMMCO's continued access to the North American market (through the North American Lamb Co-operative in conjunction with the three main New Zealand processors) allows WA lamb producers to attain the highest returns in the world market.

Cheers

Craig

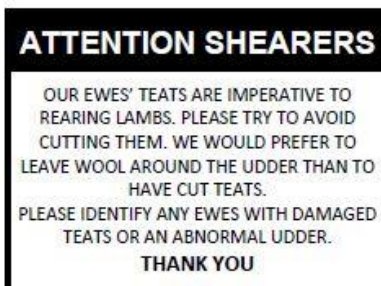


Teat Damage Affecting Lamb Rearing

During last year's Artificial Breeding season, the evidence of teat damage from shearing / crutching is still alarming. Once the tip of the teat is cut, the duct will seal over and that side of the udder is rendered useless.

On a cold night, if a new-born lamb does not suckle colostrum in the first 30 minutes, its chance of survival is reduced by 50%. Obviously, a non-functional side to an udder diminishes the chances of survival and also decreases the growth rate of that lamb due to obtaining only half a milk supply over the lactation period. For twin lambs the result is only exacerbated.

Because damaged teats are rarely visualised, the best way to remove these ewes from the flock is at weaning or lamb marking time. Wet/drying or palpation of the udder will detect any abnormalities and these ewes identified and then culled from the flock post weaning.



We have these signs (60 x 45cm) available for sale for producers to hang in their shearing sheds to help highlight and hopefully improve this issue.

Sponsorship

Genstock is grateful for our client's business, so we love sponsoring events. We would like to say congratulations to the following 2020 winners. Woolorama Merino most points and Rabobank Most points Katanning went to the Rangeview Merino stud in Darkan. (trophy and ribbons from Katanning are pictured above) Yonga Downs won the Interbreed Champion pen of three at Woolorama this year.

Genstock also sponsor events such as Narrogin Long Wool Day, Kojonup Golf Club and the Kojonup Show Dog Trial. Andrew Dunne from the Parakeelya Merino Stud in Beacon was the successful bidder on 100 AI's donated by Genstock to the WAMMCO Lifeline WA Charity Auction organized by SMBA.

GENSTOCK: FOR WHEN RESULTS REALLY COUNT

Improving Conception Rates

Semen Quality

The Genstock team are constantly communicating with researchers and reading research papers from Andrology (study of male reproduction) laboratories around the world. The production and quality of post thaw frozen ram semen is influenced by numerous factors and research throughout the world is occurring to achieve the best quality product. Many studies have demonstrated that overweight and fat males (condition score 4.5+) have a whole-body inflammatory response that increases reactive oxygen species in semen and increases DNA damage in the sperm. The DNA is critical in the fertilisation process and damage can result in poor conception rates, decreased embryo development and an increased risk of early pregnancy loss. Excess leptin, a hormone produced by fat cells, can result in reduced testosterone production and reduced function of the cells involved in sperm production. Only robust sperm can survive the freezing process as it can cause considerable mechanical and functional damage to sperm, particularly through the generation of reactive oxygen species.

Recent studies in the application of Melatonin (Regulin®) implants in rams has demonstrated the ability of melatonin to positively influence the production of fresh semen and improve the integrity of frozen thawed sperm. **Melatonin acts as potent antioxidant.** Reactive oxygen species are a normal by-product of sperm metabolism, but excessive levels are detrimental to sperm performance, such as DNA integrity and motility. These changes can severely compromise the ability of frozen thawed sperm to successfully navigate the female tract and fertilise eggs. Sperm have melatonin receptors and melatonin has been shown to not only eliminate reactive oxygen species but also have a protective effect on sperm functionality and reducing DNA damage. Ram's implanted with melatonin (Regulin®) have increased testicular size and sperm concentration post implantation.

Vitamin D (exposure to sunlight) in humans has been shown to improve sperm motility and increased testosterone levels and it is predicted to have a similar effect in rams. Vitamin E is obtained from green feed and has an antioxidant effect. Studies in rams have shown Vitamin E to increase semen volume, sperm concentrations, sperm motility and percentage of morphologically normal sperm. A deficiency of Vitamin A can also reduce the fertility in rams in drought conditions.

Ultimately, we aim to produce the highest quality frozen sperm possible to ensure we can optimise your AI/ET results. The Genstock team have started to implement Regulin® (Melatonin) implants and supplementation of rams with sub-optimal spermatozoa. We will keep you updated on results we see through our facility. If you have had previous issues in your rams, you may want to consider implanting them with Melatonin and mineral supplementation 40-60 days prior to semen collection.

Effects of Heat Stress

With the hot weather above 42°C during December in 2019 we saw some flow on effects from heat stress in sheep. Ewes experiencing heat stress during the early stages of joining experience reductions in egg quality, fertilisation rates and embryo survival. It is postulated that heat stress during pregnancy will retard the foetal development, with potential to reduce lamb birthweights by 0.6 to 1.4kg and decrease survival to weaning by 20-30%. Rams can also experience a reduction in fertility. The physiological and metabolic changes in animals exposed to heat stress are observed normally 3 days after the heat stress event. Hence, if there is a heatwave early in the joining season or even before, fertility can be affected, and it can be reflected in extended lambing patterns or low first cycle conception rates

In our experience we have found the most detrimental effects on fertility occurred when the ambient temperature was elevated for over 12 hours for consecutive days and especially when the temperatures did not cool during the night. We are lucky in most areas of WA that the night-time temperatures tend to fall below 36°C, thus minimising the effects of heat stress on reproduction. There has been numerous work and modelling performed in the face of climate change in relation to heat stress and ruminant reproduction. Modelling has estimated that 21 million potential lambs are lost due to heat stress under the current climate

For a sheep to dissipate excess body heat when exposed to high temperatures they pant or sweat. Sweating in woolled sheep is much less effective due to the wool cover. As the temperature rise a high proportion of heat is dissipated via the ears and legs. Exposure of sheep to heat stress causes changes in the biological functions, which include a decrease in feed intake efficiency and utilisation, disturbances in water, protein, energy and mineral balances and hormonal secretions. Hormones that regulate the oestrus cycle in sheep are sensitive to heat, although the day length does have a stronger influence.

The need to develop effective, and commercially adoptable strategies to alleviate the impacts of heat stress on the Australian sheep flock are clear. Analysis of the impact of heat stress on reproduction is continuing and focused on strategies that could be developed including shelter, nutrition, containment mating, mating protocol, time of shearing, time of lambing and genetic selection.

Vasectomising Rams

The advantages of utilising vasectomised rams over Testosterone treated wethers are:

- Proven increase in conception results in natural mating and AI programmes
- Can be used for many years and then sold for slaughter (testosterone treated wethers must NOT be sold for human consumption)

Selection of Rams to Vasectomise

1. Rams should be well grown and at least 6 months of age. (Preferably < 2 years of age). We do not recommend older rams and prefer younger rams so you can optimise your return from investment.
2. Choose healthy, mobile rams that have been culled due to inferior genetics.
3. If purchasing rams to vasectomise we recommend ensuring rams are Brucellosis Accredited free or tested negative.
4. The procedure ideally should be performed 4 to 8 weeks prior to use.
5. We recommend using 10% teasers (vasectomised rams) in your AI programs, or 1 to 2% + 1 in natural mate programs.
6. Please consider the breed of ram you are vasectomizing to reduce the chance of segregation in the paddock.

To optimise the teaser affect, please ensure ewes are away from all rams for 4 weeks prior to "teasing" (at least 1km). Run the vasectomised rams for 2 weeks prior to natural joining OR inserting CIDRS for an AI programme.

GENSTOCK: FOR WHEN RESULTS REALLY COUNT

Flock Health

Pneumonia Update

Pneumonia is complex disease and costs the sheep industry considerably in production losses. The National Sheep health monitoring program data indicates that up to 50% of Australia sheep flocks have endemic pneumonia. MLA funded a pilot study to investigate causative agents. Between July 2018 to May 2019 samples were taken from abattoirs in NSW and SA. 66% of samples yielded a positive result to *Mycoplasma ovipneumoniae*. Infections with *Mycoplasma* predispose animals to bacterial infections such as *Mannheimia haemolytica*. During the drought in the eastern states and in WA we have investigated numerous cases of pneumonia. In the cases we have investigated we have found the main bacterial component isolated is *Mannheimia haemolytica* and occasional *Mycoplasma ovipneumoniae*. Often lambs carry significant populations of *Mannheimia spp.* in their pharynx and *Mannheimia haemolytica* is often implicated in mastitis.

Ideally, we would like a vaccine that is the sheep specific strains, however they are not available in Australia and expensive. There has been some antidotal evidence of some feedlots having successful reduction in bacterial pneumonia caused by *Mannheimia haemolytica* using cattle vaccines. Trials have been occurring with the cattle vaccines but there appears to be limited cross reaction in the preliminary data. We would like to trial on farms in WA and would be interested to hear if any producers would be interested in being involved.

Reproductive Wastage



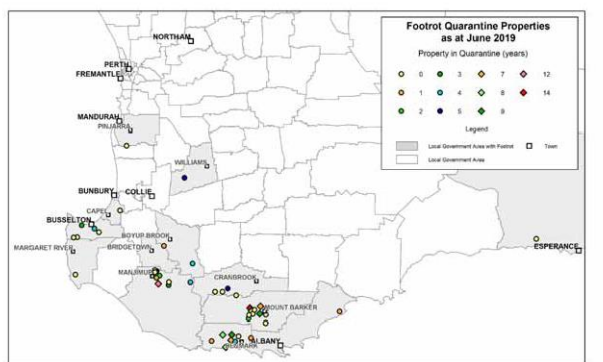
The Murdoch & DPIRD team conducted a survey to collect data on the reproductive rate and marking rate of both ewe lamb and adult non-Merino commercial sheep flocks. Data was collected on the 2018 lambing season and ongoing data from the 2019 season. To be eligible to contribute data, producers had to pregnancy scan their ewe flocks for multiples and manage their ewe lambs and adults separately during lambing until marking data was obtained. Marking rates in ewe lambs were significantly lower than in adult ewes (67% vs 131%), and this was attributable to both lower reproductive rate (96% vs. 161%) and lower lamb survival (68% vs. 82%). Joining ewe lambs at older ages reduced the gap in marking rate between ewe lambs and adults, as older ewe lambs tended to have a higher reproductive rate and higher lamb survival. Data has also been collected on Merinos and should be available later this year. Improving both the reproductive rate of ewe lambs and the survival of their progeny to marking will have a significant effect on narrowing the gap in reproductive wastage and significantly impact rebuilding of the WA sheep flock.

Footrot (PCR Test)

In the late 1940s more than 15% of WA flocks were infected with virulent footrot (*Dichelobacter nodosus*). Efforts from the DPIRD have drastically reduced the infection level to approximately 1% of WA sheep flocks with a known infection of virulent footrot.

The Sheep and Goat Industry Funding Scheme (SGIFS), that was introduced in June 2010 to address biosecurity threats to WA sheep and goat industry, funds the Footrot Control program. The Footrot Control program and other programs under the SGIFS are funded by a 17-cent contribution on the sale of every sheep and goat produced within WA. In June 2019 there were 87 properties in quarantine for virulent footrot. The program focuses on surveillance (field and abattoir), regulatory measures and enforcing compliance, assisting producers develop property disease management plans and advising and supporting affected producers.

Under the scheme DPIRD has validated a qPCR Footrot test from Europe. This test detects the bacterial DNA of the bacteria that causes footrot and can identify whether it is benign or virulent but does not determine the strain of footrot. It allows for a rapid turnaround of 2-3 days rather than the 10-12 days of the previously available Gelatin Gel test. The qPCR test has been implemented within the footrot control program which has resulted in additional properties being detected with virulent footrot.



The program has also performed studies on Footrot vaccines, however the apparent diversity in the serotypes in flocks quarantined for virulent footrot in WA limits the practical application of a flock specific Footrot R-pilus vaccine and it has a limited role in the eradication of virulent footrot from a flock in WA. The previous FootVax vaccine was prepared with all 10 serogroups. However, due to antigenic competition (i.e. too many serogroups in the vaccine, which confused the sheep's immune system), the vaccine was not as effective as expected.

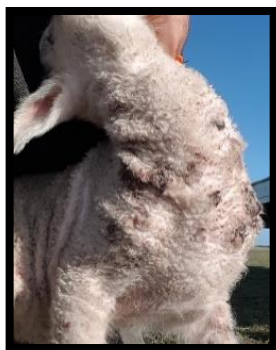
Feedback from several producers has been they feel there has been limited support once their property is placed in quarantine. Often properties are being notified that they have a positive result without any visual signs of lameness as the qPCR can detect Footrot DNA in the absence of clinical signs. If any

producers have had a positive result or suspect they may have footrot we encourage you to contact your local veterinarian to have them assist you with a management plan.

GENSTOCK: FOR WHEN RESULTS REALLY COUNT

Scabby Mouth Case Study

We have had an interesting case of Scabby Mouth present in 2 to 3 week old Merino lambs. The lambs presented with scabs on their neck, body, flank and tail region. Due to the unusual presentation of scabs on the fleece areas, samples were sent for testing to Perth. The testing at the laboratory was performed at no charge and confirmed Scabby Mouth with secondary bacterial infection. The client had stopped scratching lambs 4 years ago. This has led to a large proportion of flock not vaccinated against Scabby mouth and subsequent large number of cases of Scabby Mouth in the flock. The vaccine is a live vaccine, meaning if you vaccinate you are introducing the virus to your property.



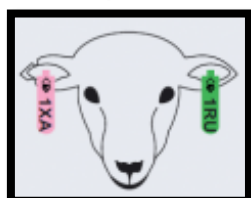
The incubation period is quite short for Scabby Mouth, (only 2 to 3 days). But lesions can last a good couple of weeks. In this case the lesions are quite long standing and it is likely it was the tail end of viral infection with residual secondary lesions remaining when we saw the lambs. We suspect the lambs became infected after birth when ewes with scabby mouth cleaned the lambs and passed on the virus. Another source would be if the ewes were vaccinated in the flank in the weeks prior to lambing but this did not occur. Natural infection is certainly possible, whereby the virus is in the environment and infects lambs, however we could not find any evidence of there being trauma to the skin to allow the virus to infect the lambs.

The scabby mouth virus develops and grows on damaged skin caused by contact with coarse pastures, or in feedlots with pellet feed causing abrasions around the mouth of sheep. Lambs are at the greatest risk of infection. Once the disease is

introduced to a property, the virus will remain in the environment for many years but may not cause infection every year. The virus will survive for months in exposed areas and can survive for years in a dry sheltered area such as around sheds or in yards. Once an animal recovers from scabby mouth they have a lifelong immunity against severe infection, however they are susceptible to re-infection, but it is often milder, of shorter duration and may go unnoticed. If you vaccinate pregnant ewes we recommend vaccinating behind the elbow and NOT on the inner thigh, as the udder may become infected resulting in rapid transmission to highly susceptible young lambs.



Exemption from Pink Tagging at AI Centres



Male sheep

Legally all AI centres are classed as Holding Yards, therefore any animal that enters our facility for more than 48 hours that does not have an NLIS approved EID has to have a pink tag inserted in the earmark ear. We have been working with the Stud Merino breeders and DPIRD to obtain an exemption from pink tagging sheep by entering additional data in the NLIS database to enable traceability of animals entering and exiting our facility. We should hear in the coming weeks if the proposal has been approved for a trial period of 6 months. The key to the obtaining approval will be the requirement of all animals entering our facility being correctly tagged according to the WA legislation and proof of compliance in all other NLIS areas (complete waybills).

Key points for ear tagging to ensure we can be eligible for the exemption from pink tagging at AI Centres.

1. All animals must have an NLIS ear tag in the correct ear according to sex. We are all aware these tags must be colour coded for the year of birth, have the owners PIC or brand, however many are not aware that they must have the NLIS logo on the tag.
2. This NLIS tag must have an individual animal number or identification printed on the tag that is unique for this animal for the property of origin. (This is a requirement to allow exemption from pink tagging sheep entering AI centres).
3. If a purchased animal does not have a NLIS EID then a pink tag with your property PIC or brand needs to be applied to the earmark ear. NO OTHER TAGS CAN BE PLACED IN THE EARMARK EAR.
4. There is no legislation that states you are not allowed to place additional tags in the property bred tagging ear of sheep. However, these tags can not have the NLIS logo or your brand on them as they will cause confusion with traceability.
5. Please be aware that not all EIDs and tags are NLIS approved. For a list of approved tags please follow this link.
<https://www.agric.wa.gov.au/sites/gateway/files/NLIS%20accredited%20sheep%20and%20goat%20tags%20%28Apr%202019%29.pdf>



Female sheep

Significant Disease Investigations (SDI) Program

The Department of Primary Industries and Regional Development (DPIRD) has a SDI program that acts to boost WA producer engagement with veterinarians and to increase the capacity of early detection of significant disease that could affect sheep production enterprises. The data from these investigations is needed to support domestic consumer confidence and to protect our export markets. The program subsidises the post-mortem fee, laboratory charges and a portion of the travel fee. There is range of criteria that needs to be met to gain access to this subsidy and we encourage producers to contact us if you observe anything unusual in your flock. Not only is this program enabling WA producers to maintain market access but has the potential to save money so that the correct treatments can be applied or strategies implemented to manage the disease or prevent the disease in the future. Just as importantly, the laboratory test results are used to support Australia's evidence of freedom from significant diseases, which means we can continue to export 80% of our livestock and livestock product around the world.

To be eligible for the subsidy program the property must have:

- Multiple sheep affected; however, this is flexible depending on the presenting signs
- Unusual disease incident, such as high death rates or illness rates or rapidly spreading
- Visible signs of a possible reportable disease
- Potential to have negative effect on trade, public health or viability of farm, industry or region.
- Nervous signs meeting criteria for National Transmissible Spongiform Encephalopathies Surveillance Program

Our veterinarians have been investigating losses throughout WA under this subsidy scheme and we encourage you to give us a call if you have any issues in your sheep flock. If your issue does not meet the criteria for the subsidy often the laboratory charges can be subsidised. Our veterinarians are always available for a chat and often with a phone call can direct you on the best course of action with your flock.

ACP (Shearing Sedative)

When sedating rams for shearing with Acepromazine producers need to be aware that the toxicity of organophosphates can be potentiated by Acepromazine, therefore we recommend.

- 3-5 day interval from treating with oral organophosphates eg, Rametin, NAPfix
- 14 day interval from treating with topical organophosphate, eg Eureka Gold

GENSTOCK: FOR WHEN RESULTS REALLY COUNT