



# GENSTOCK NEWS

SEPTEMBER 2003

ANIMAL BREEDING & FLEECE TESTING SERVICES  
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**Welcome to the first, new look, edition of the Genstock newsletter. In an attempt to keep you well informed with the latest developments at Genstock, plus deliver interesting Veterinarian advice, we have decided to commence more regular publications of a newsletter. If you would prefer to receive this via email please advise.**

Genstock is in the process of undergoing a restructure process. In the corporate world this would signify job cuts and reduced services. However to reassure you, the opposite is to apply.

We have appointed Tim Stevenson into a newly formed position at Genstock, titled Business Manager. The key selection criterion for Tim's appointment is his genuine love for the sheep industry, coupled with a sound base knowledge in business management and Artificial Breeding. Tim will be working in closely with our team to ensure that you receive the most personalized and professional service available plus an all improved follow-up service. Tim complements our highly organised staff and we look forward to you meeting and talking with Tim in the near future.

We have also established a new position on the farming front. This will free up my time and enable me to have greater clientele availability. The position created is a farm operations manager and Peter Hewlett has been appointed to this position.

It is with a degree of sadness that we advise that Belinda Cussons is returning to mixed animal practice this year. We have valued her tremendously over the last couple of seasons, however can only wish her well in her other pursuits.

On a positive note, a highly skilled Veterinarian from South Africa, François Marais, is replacing her position. For those of you, who have the pleasure of meeting François, you will thoroughly appreciate his practical and scientific knowledge of our industry.



## A WORD FROM CRAIG

We also welcome back Gray Robertson and New Zealander Ross Edwards for the fourth consecutive breeding season. Both Gray and Ross have had many years experience within the Artificial Breeding Industry and we value their level of professionalism and expertise.

So with both a South African and Kiwi on staff, here's hoping the Aussies' perform at their best in the Rugby World Cup.

As many of you are now aware, we have hit the modern age and gone "on-line" – please visit our website at [www.genstock.com.au](http://www.genstock.com.au) and relay any feed back on this service. We would really love to see all our ram breeders utilise our on-line semen catalogue, as it is a very cost-effective method of advertising and the way for the future.

Genstock continues to offer generous sponsorship at several sheep shows, and our congratulations is extended to all clients that have participated and performed exceptionally well during the last year.

- .Rabo Katanning Sheep Show, Most points in the Merino & Poll Merino section was won by the "Angenup stud", Kojonup.
- Wagin Woolarama – Reserve Grand Champion Poll Merino Ram was won by the "Claypans stud", Corrigin.
- Wagin Woolarama – Most points in the Ewe section, was won by the "Woolkabin stud", Katanning.
- Wagin Woolarama – Carcase Competition Agricultural Colleges Challenge won by WACA Denmark.
- Perth Royal Show – Grant Bingham of the Iveston stud, Williams, won the South Suffolk section group class.

As evident of all sheep breeds at major shows, artificial breeding is a tool that has helped many clients to achieve at a higher level. We are immensely grateful for the support our clientele has given us during our many years of business.

Best wishes to all for the ram-selling season in progress as this edition goes to print, and may your season deliver prosperity.

Regards  
Craig



The Genstock Team, from left: Tim Stevenson, Craig & Liz Heggaton, Julia Overton-Guidi, Natascha Wiel & Liz Barby.  
Inset Carol Miller & Darren Chapman

# ET CONFERENCE

Craig & Liz recently attended the annual Australian Embryo Transfer Conference, held at the wonderful location of "Sea World" on the Gold Coast in Queensland. The AETS conference is the one time of the year that Embryo Transfer Veterinarians from several breed species, come together to learn from each others experiences and are updated on the latest developments offered to the embryo world.

There were many important new technologies discussed at this conference, which we feel, are of importance to you, and we will inform you through our newsletters during the year.

# DNA TESTING

Is now a commercial reality and has many advantages:-

- To prove parentage without mothering up at lambing time
- Is an extremely accurate method of identifying parentage
- It allows production animals with birth defects to be eliminated
- DNA testing can extend to the selection of animals or bloodlines that carry specific desirable traits to increase their economic value.
- Trace-ability of livestock will help preserve the confidence in animal products i.e. DNA testing is one way to preserve this safely.

Although parentage verification can be confirmed via the technology, the scenario of identifying a whole drop of lambs to their respective sire and dam is not yet a reality.

Method:-

1. A sample of blood, hair, semen or tissue is collected from the animal and forwarded to the DNA laboratory
2. The sample is logged and registered at the lab to ensure that the sample can be tracked through the entire testing phase.
3. The testing phase involves multiple steps and typically involve the following procedures
4. DNA is recovered from the sample provided.
5. Specific DNA markers in the animal are targeted using a process known as the "polymerase chain reaction" or PCR. Multiple DNA markers are used in a single test. The choice of DNA marker is dependent upon the breeding objective of the producer.
6. After the PCR process, each DNA marker can be visualised by fluorescence.
7. A DNA profile of the animal is produced. The interpretation of result is based on the specific requirement of the producer.

**For further information please do not hesitate to contact Genstock.**

# GENE MARKING

Gene markers are currently being developed for important economic traits. A company by the name of Genetic Solutions P/L based in Queensland, has developed the worlds first DNA diagnostic test in the beef industry, with the release of GeneSTAR R marbling. This has been followed with the release of GeneSTAR Tenderness. These markers herald the future of genetic description for beef cattle.

By testing a DNA sample (usually taken from blood or hair/wool samples) it can be determined whether an animal possesses a gene for a particular trait, which can be passed on to its offspring.

Although Genetic Solutions are yet to do any work in the sheep industry, it is only a matter of time before similar diagnostic testing will be available. These exciting developments may revolutionise selection processes for elite individual animals.



# LEGAL REQUIREMENTS

An update from the AETS conference, is the ever-increasing need for legal formalization within our area of professional work. Unfortunately it has taken only a tiny minority of clientele within the global Artificial Breeding industry, to make it an annoying procedure for all our fantastic loyal clients & friends. Please bear with us with these contracts that will now be required to sign prior to us undergoing any work for you.

# EMBRYO TRANSFER

As many of our Embryo Transfer clients are aware, there are several options for handling your requirements.

1. You bring your Donor ewes to Genstock and we supply you with the recipients. We perform all the work for you, scan the recipient ewes at 50 days and you take home only pregnant recipient – as many of our clients know, it can not get any easier than that! Not only is this the easiest of methods but you only pay for what you receive. Let us take all the risk.
2. The second option, provided you live within 150 km radius from Kojonup, is that you bring your Donor ewes to Genstock, and prepare your own recipients at your property (minimum of 5 donors). We perform all the donor preparation at Genstock, remove the embryos and then travel to your property to transfer the embryos fresh.
3. If the traveling distance from Genstock is more than two hours and you wish to use your own recipients, you can still bring your Donor ewes to Genstock. We will flush the donors and freeze the embryos. Thawing and implanting of these embryos can occur at your own convenience. However, freezing embryos generally produces a **lower** conception rate.
4. The final option is that you do all the preparation work and keep your donors and recipients on property. You must have a minimum of 10 donors and be prepared to do the hard work and take the risks! You will also require a dust free and temperature controlled surgical room.

**Please feel free to ring us to discuss these options and pricing further.**

# WEBSITE

As many of you are aware, we have now hit the modern age and gone "on-line" – please visit our website at [www.genstock.com.au](http://www.genstock.com.au) and give us any feed back on how you feel this service could be improved.

**For \$100 / ram (GST excl.) you can advertise on-line, which is fantastic value for money considering that the advert will stay on our web site indefinitely.**

**Genstock does not take any commission on sales. If you have an existing website, we can link it to your advertised ram.**

**It is really easy, just call Julia and she will get you moving into the "new age".**

Genstock always tries to keep abreast of new innovations or measurements. We now offer a really slick service, thanks to improved technologies from Jim Goodwin and his fabulous mini scourer.

# FLEECE TESTING

We like to see ourselves as the “One Stop Shop” so therefore please feel free to drop your wool samples in whilst delivering your rams &/or ewes for other services and if you have any questions regarding your measurements, please contact us.

Recently Liz, Julia, and Liz Barby attended a workshop in Katanning on interpreting fleece measurements. The main focus was on which of the measurements are important to wool buyers. These being – Fibre Diameter, Fibre distribution, Fleece weight and Fibre Curvature.

**Fibre Diameter** or Micron is especially important for spinners as it dictates the yarn thickness. Genstock utilises the OFDA 100 and all measurements are calculated on clean, scoured wool. This improves the accuracy of the measurement. It was also recommended that the midside sample is the preferred place of testing as it best represents the overall fleece.

**Fibre diameter distribution** is the distribution, or number, of fibres of each diameter in any given wool sample. When measured, it enables the degree of fibre diameter variation, or uniformity, to be assessed.

Good staple structure requires fibre diameter uniformity. Evenly sized fibres grow and crimp in unison to give an even, distinct crimping pattern. This gives wool true style and character. Poor staple structure has considerable fibre diameter variation. Unevenly sized fibres produce crimps of uneven length and depth, which give rise to a disrupted crimping pattern and feathery tip.

The measurements most important at looking at fibre distribution are:

- **Coefficient of Variation (CV)** which indicates the micron “spread” relative to the average micron. It represents the “evenness” of the yarn and shows the variation between fibres and also along the fibre. Reduce CVD and you reduce the standard deviation and increase staple strength

- **Comfort Factor (CF)** indicates the proportion of fibres, which are less than 30 micron. When CF is less than 95 %, prickliness becomes apparent. Thus indicating the degree of prickliness that a finished product is likely to have. Generally reducing fibre diameter reduces CF.
- **Coarse Edge Micron (CEM) Threshold** - is the micron at which the broadest 5% of fibres are found on the frequency histogram. It is useful as an indicator of garment comfort and would be more useful than comfort factor for wools under 19 microns. The lower the CEM Threshold, the more comfortable will be the wool. These fibres disrupt the internal staple structure and are the framework for feathery tips. In severe cases, they can be pre-emptive of the future increase in the average micron of that sheep.
- **Spinning Fineness (SF)** is a numeric calculation that relates CV to the actual micron in terms of spinning ability. The spinning qualities of wool are enhanced by a low coefficient of variation, which enables the wool to be processed at standards less than the given micron.

**Fleece weight** should be calculated on clean wool. For taking wool samples for testing, it was recommended that the mid-side samples be taken from the right side of the sheep, as they tend to lie predominantly on their left!

**Fibre Curvature (CRV °/mm)** - is a new approach to measuring “crimp” in wool, and recent evidence shows that curvature is probably the third most important fibre specification after diameter and length

Curvature relates strongly to staple crimp characteristics, particularly crimp frequency - for as frequency increases, the fibres are increasingly curved. Recent scientific evidence confirms that wool fibre curvature influences processing efficiency, particularly during topmaking and spinning operations, yarn thickness and evenness and fabric thickness, handle and quality. Decreasing fibre diameter generally increases fibre curvature.

High FC for 19 micron wool received a 12cent / ° mm premium last year. New Zealand is trying to breed high FC sheep to make the most of the premium that the buyers (especially the Italians) are paying. High FC often leads to less pilling and felting and tends to feel slightly better. When sheep are put under pressure then fibre curvature decreases.



**GENSTOCK: FOR WA'S MOST PROFESSIONAL & RELIABLE ARTIFICIAL BREEDING AND FLEECE TESTING SERVICES**

# ARTIFICIAL INSEMINATION

It is time to start thinking about your forthcoming Laparoscopic AI programs & ET programs. Early planning will potentially:-

- Save you money by combining incoming semen dispatches and combining programs in your area.
- Guarantee your preferred dates.
- Increase your results by improving on animal husbandry and ewe nutritional preparation.

Please ensure you return your enclosed "LAI / ET booking sheet" as soon as possible.

## IMPROVING RESULTS

To achieve the best artificial breeding results, GENSTOCK recommends:

- Sheep on a **rising plane** of nutrition. Optimum body score of 2 - 3.
- Sheep husbandry procedures should be performed **at least 2 weeks** before sponge insertion ie shearing, drenching, back lining etc
- The use of teasers at the ratio 1:10 has been shown to decrease the period over which a group of ewes may ovulate.
- Ewes should be weaned at least 6 weeks prior to AI
- Maiden ewes should all have cycled naturally more than once before being synchronised (maiden ewes have variable ovulation times hence have varied conception rates)
- Check body condition of ewes 6 weeks before AI. Ewes of score 2.5 to 3 are ideal. Ewes greater than this should be run tight to ensure they are not over fat at the time of insemination.
- Make sure AI area is clean and is protected from direct sunlight and draughts.
- For fresh laparoscopic AI, rams should be rested for at least 4 days before AI.
- Ewes should not be overfed following AI. Any change in diet or management systems following AI should be avoided

## MAXIMISE EWE PRODUCTION

With today's exceptional sheep prices, large monetary gains can be achieved through increasing reproduction rates.

It is becoming increasingly evident that by nutritionally flushing ewes prior to either natural mating or artificial insemination programs, conception rates will be markedly increased.

Increased nutritional supplementation, especially with lupins, can increase the ewe's ovulation rate thus not only increasing the number of ewes in lamb but also increasing the number of multiple births.

With the favourable feed conditions on offer this spring, breeders should be aware not to let ewes become too fat prior to mating. Restricting feed access post weaning is advisable.

Disappointing conception rates can occur, especially with Artificial Insemination programs, if ewes are too fat prior to programming, because the effect of nutritional flushing on the ewe can be markedly reduced.

Ensuring all ewes have not only conceived, but also reared a lamb will greatly improve the productivity of your flock.

It is extremely beneficial to pregnancy scan your ewe flock and to then "wet & dry" all ewes at lamb marking time. This will ensure that any ewe that has failed to rear a lamb will be identified and culled, or run as a dry sheep. It is a well-known fact that a maiden ewe that has conceived, but failed to rear that lamb, only has a 50% chance of rearing a lamb in its lifetime.

Twin pregnancy scanning diagnosis is yet another effective method of increasing the percentage of lambs marked. We have some breeders achieving up to 180% lambs marked, from their twin bearing ewes through improved nutritional practices with these ewes.

## WHY USE GENSTOCK?

- Australia's longest serving sheep artificial breeding centre.
- Highly Qualified and dedicated staff.
- Easily contactable staff.
- 900 000 laparoscopic inseminations performed since 1983.
- Computerised semen storage utilising GAMETE database enabling faster and more efficient dispatch of semen for your AI requirements.
- Very successful laparoscopic results – averaged 75% conception last breeding season.



**GENSTOCK PTY LTD**  
**ANIMAL BREEDING SERVICES**

### Genstock specialises in

- ◆ Laparoscopic and cervical artificial insemination
- ◆ Embryo flushing, transfer and freezing
- ◆ JIVET (Juvenile In-Vitro Embryo Transfer)
- ◆ Semen freezing for domestic and overseas markets
- ◆ Pregnancy diagnosis - singles and multiples
- ◆ Eye Muscle Scanning
- ◆ Fleece testing utilising O.F.D.A. technology
- ◆ DNA Testing

*GENSTOCK is Australia's longest serving sheep artificial breeding company with Australia's largest on centre embryo transfer facility.*

**PLEASE VISIT OUR WEB SITE AND ON-LINE SEMEN CATALOGUE**  
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