

# SNP go the shears boys, SNP, SNP, SNP

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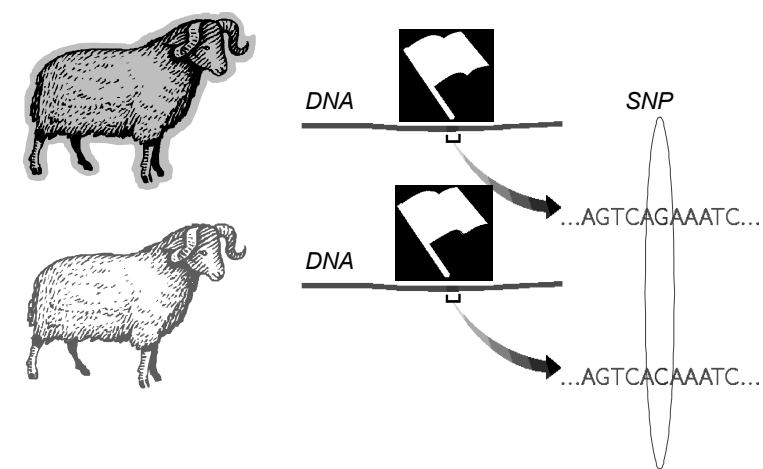
The Australian sheep industry is set to capture the benefits from the breakthroughs and technology resulting from the human genome project.

The anticipated outcome is more accurate Australian sheep breeding values (ASBVs) available earlier in life, with special emphasis on difficult traits or expensive to measure traits such as ewe lifetime performance and meat quality. If the outcome is achieved, it will allow producers to accurately select young rams who will sire the most profitable offspring in wool or meat operations.

How will this be achieved? Just like in humans, the DNA of sheep is a four letter alphabet, A, C, T and G, in a book of more than 3 billion letters, in millions of different combinations. To understand what a SNP (Single Nucleotide polymorphism, pronounced “snip”) is, imagine you can “see” the DNA from two different sheep. If we take the DNA from the start, read off the sequence, the sequence will be identical except in locations where, for example, one sheep has a G and the other has a C. This difference is a SNP.

A major breakthrough came late last year when an international group led by Australian and New Zealand researchers developed a sheep “SNP chip” (see the International Sheep Genomics Consortium website for more information <http://www.sheephapmap.org/>). The sheep SNP chip interrogates over 50,000 SNPs at once!

## A sheep SNP



The SNPs can be thought of as flags that let us track bits of DNA. They allow us to work out which of the 50,000 SNPs are important for traits like ewe lifetime profitability and meat quality. To do this, large resource flocks are required on which both the important traits have been measured and data from the 50,000 SNP chip are obtained on each progeny. The Falkiner Memorial Field Station flock from the Sheep Genomics Project (<http://www.sheepgenomics.com>) will be very important for finding useful SNPs, as will the Sheep CRC Information Nucleus (<http://www.sheepcrc.org.au/>), the largest such resource flock in the world.

Once these SNPs have been identified, and confirmed, DNA from young rams can be interrogated for the SNPs associated with existing and new traits and used by Sheep Genetics (<http://www.sheepgenetics.org.au/>) to calculate ASBVs. The most accurate ASBVs will be a result of combining SNP, pedigree and phenotype information. Breeding values with SNP information are already being used quite widely in dairy cattle to improve traits like milk production.



## Field Day 20 Feb 2009

‘Tuloona’, Harrow (above) &  
‘Mokanger’, Cavendish (below)



## Balmoral Victoria Sire Evaluation Group



[www.balmoralbreeders.com.au](http://www.balmoralbreeders.com.au)

# 2009 Trial Commenced

### Summary

- The 2009 trial commenced on April 6 & 7
- 840 ewes were inseminated
- 14 rams, including 2 links and 1 extreme.
- 11 studs are represented
- Work days were well supported by the committee, Elders representatives and ram owners. Thanks to all.

### Rams in the 2009 trial

Connewarran 2006-6042

Kiaora Big Red 2004-0058

Pendarra Red 2006-0274

Windarra 2007-0128

Eligible for Young Ram funding

Mokanger 2005-Blue 83

Mokanger 2005-Blue 8

The Mountain Dam 2006-NBE018

Kurra Wirra 2006-6268

Windarra 2004-0236

Link ram across years within our site

Kamora Park 2007-0304

Grindon 2005-0118

Extreme Ram for Bare Breech

Cressbrook 2003-3784

Link ram across sire evaluation sites

Glenlea Park 2007-0706

Eligible for Young Ram funding

Glenlea Park 2007-0716

Eligible for Young Ram funding

For further information on the studs involved please visit our website

Our Chairman - Tom Silcock

With the inseminating program just completed, we have joined 14 rams in this year’s joining. With a high interest for a so called mules free type of animal with a greater emphasis on frames, we will await with interest the progeny from a fine Grindon ram out of West Australia. This ram is claimed to have such characteristics with good production.



It is great that we can continue to attract rams of potential interest breeders in Western Victoria to be compared without bias with each other. The 2008 progeny lambs will receive an even-up shearing shortly ready for the real comparison to begin.

AMSEA (Australian Merino Sire Evaluation Association) continues to be confronted with commercial pressures and after this joining, we may need to carefully evaluate how we fund future joining.

We are now on the look out for our next host property for next year’s joining. Anyone interested contact us for further discussions.

AI - 6&7 April 2009  
‘Mokanger’, Cavendish



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manager@balmoralbreeders.com.au

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Tuloona Host property 2006—2007

The 07 Sire Evaluation Progeny are like most stock on Tuloona, collecting dust and waiting for the autumn break. We intend to class them in early June and shear them at 22 months of age with 11 months wool in late June, depending on the timing of the autumn break. Their condition score is being maintained at 2.7 while being fed a maintenance ration of barley. On some sheep the dust penetration looks severe, particularly when compared with our commercial progeny that we have coated. We have been coating most of our 1 ½ year old sheep now for 3 years and have had excellent results compared with the uncoated sheep of the same age and shearing, our net increased return after costs (labor putting coats on and off and the coat cost itself) is 14%.



Michael Craig  
“Tuloona”

The cessation of mulesing on the 08 weaners is providing an interesting management challenge. On the one hand their feed requirements, and hence cost, has being reduced markedly, around \$4, because their weaning weights were so much higher and resultant feed demands are lower. Yet on the other hand more care is required to manage potential fly problems because of increased dag. Interestingly the ewe weaners that were tail clipped, are creating more problems, because of the excess skin around the vulva, compared with the wether lambs that were completely unmulesed. The adjustment to our management program will probably result in an additional crutch every year. Will the market compensate us for that ? We don’t know. Hopefully we will be trialing intradermals this year, and that viable alternatives to mulesing will become available in the near future. Mulesing is not good for our industry.

Mokanger Host property 2008 - 2009



Shane Arnold  
“Mokanger”

AI of 09 drop took place on April 6 & 7. Ewes were in condition score 2.7 – 3+ and are currently being fed 3kg of barley per week. 2008 drop trial progeny continue to do well, being fed 3.5kg silage and barley per week. These weaner’s will be shorn in 2 weeks time and then placed on a Lucerne/chicory paddock. Mokanger received 50mm of rain in March after a long dry spell. Hoping for a wet Anzac Day as forecast to give us a great start to the year. Special thanks to those who helped with the AI.

Thank-you to our Sponsors

We gratefully acknowledge the generous support of our sponsors and appreciate their participation. Please support these businesses.

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