

# Breeding for the future!

By Andrew Michael

Leahcim Poll Merino and White Suffolk Studs

# LEAHCIM

## What we do?

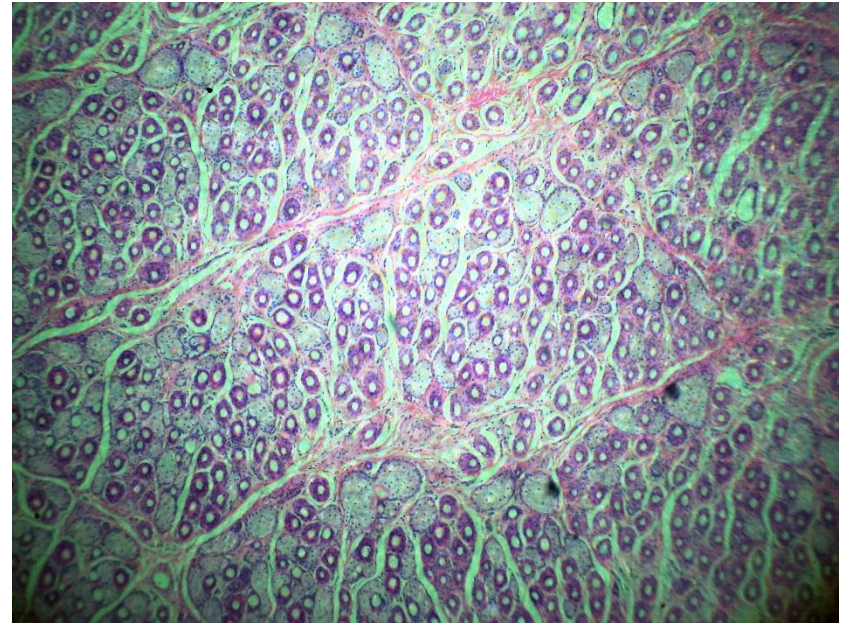
- 2 studs (Poll Merino and White Suffolk)
- Foundation breeder of the White Suffolk's
- 2500 Poll Merino stud ewes
- 700 White Suffolk stud ewes
- 500ha of cereal cropping

# SMART BREEDING

1. No mulesing since 2004
2. Minimal chemical
3. Only animal application in future is maybe a tagging system
4. Produce an animal to suite all environments
5. ***It's a business, make business decisions, breed the most profitable animals possible.***
6. ***Succession planning***

# Technology changes

- Electronic tags
- Pedigree matchmaker – DNA parentage
- ASBV's
  - Birth/Weaning & PWWT
  - Eye muscle and fat scan
  - Wool test
  - Breech wrinkle
- GENOMICS
- Skin Test
- TGRM - MateSel
- Advanced breeding programs
  - AI
  - ET
  - JIVET
- Trials that benchmark what we do



# Skin Test

Why?

**Table 2 Genetic correlations between follicle density and objectively measured fleece characters at 10<sup>A</sup> and 16<sup>B</sup> months of age**

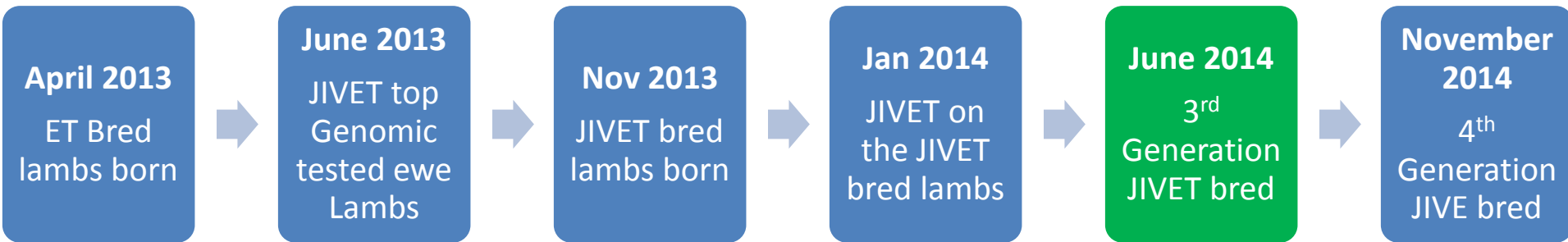
Character	Genetic correlation
Yield	0.37 <sup>A</sup>
	0.24 <sup>B</sup>
Clean fleece weight	0.54
	0.21
Fibre diameter	-0.37
	-0.43
CV of fibre diameter	-0.09
	0.06
Staple length	0.12
	0.00
Staple strength	0.07
	0.00

A Upper value represents correlation with fleece character measured at 10 months of age  
B Lower value represents correlation with fleece character measured at 16 months of age

\*Wool Technology and sheep breeding Volume 44, Issue 3. Turretfield research centre

# JIVET

- Juvenile In Vitro Embryo Transfer
- 4 Generation in 24 months



- 3<sup>rd</sup> Generation born in line with all natural and AI bred lambs
- Ran together to compare apples with apples

# Increased performance of JIVET

Trait	Natural	JIVET	Difference
Weight kg (PW)	51.5	58.2	<b>+6.7kg</b>
Fat mm (PW)	3.1	4.3	<b>+1.2mm</b>
EMD mm (PW)	31.8	33.2	<b>+1.4mm</b>
<b>Class (top 16% of rams)</b>	<b>12.4%</b>	<b>32.1%</b>	
<b>Class (top 2.5% of rams, keepers)</b>	<b>1.2%</b>	<b>28%</b>	

# JIVET Wool results

<u>Tag</u>	<u>Fleece wt 6 months</u>	<u>Gramm / Month</u>	<u>YCFW</u>
2001	5.5	917	14.4
2002	5.9	983	14.5
2003	6.7	1117	25.7
2008	5.3	883	22.4
2012	6.7	1117	23.0
2032	8.3	1383	29.8
2056	6.3	1050	18.6
2062	5.3	883	13.1
2072	5.3	883	16.1
2075	5.9	983	21.3
2090	7.3	1217	21.6
<b>Leahcim Average 2014</b>			14.5
<b>Industry Average</b>			9.3



# Merino Superior Sires - Temora

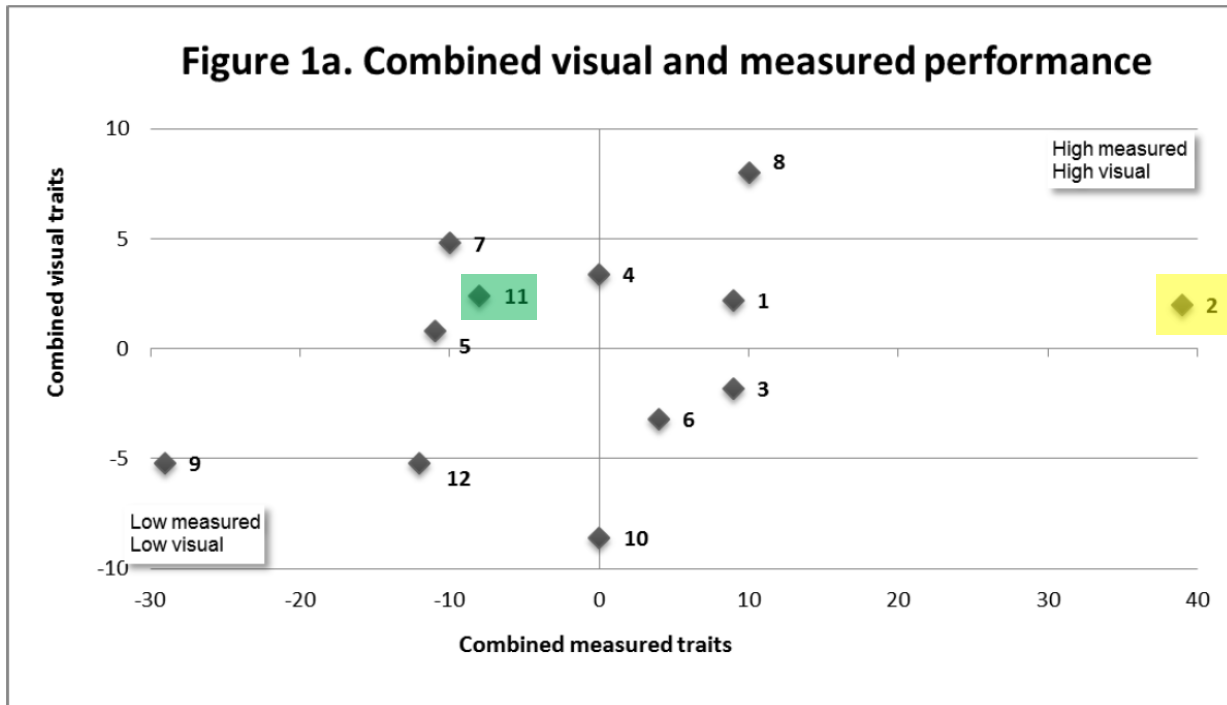


Figure 1a is based on an AMSEA Dual Purpose Plus (DP+) index – (Based on a meat focused production system where surplus progeny are sold as lambs and a portion of ewes are joined to terminal sires).

Sire code	Breeders flock, Sire number	Sheep Genetics ID	Sire of Sire
1	Billandri Poll, 100701	600571-2010-100701	601139-2008-082017
2	Centre Plus Poll, 907538	601250-2009-907538	601250-2007-707221 (Centre Plus Poll, 707221)
3	DD Dohne, 090175	510146-2009-090175	500146-2007-070099
4	GRASS, G1	503884-2011-112138	503884-2009-091487
5	Hazeldean, 9.4752	500383-2009-004752	500383-2007-006027
6	Merinotech WA Poll, 6533	609040-2006-066533	609040-2004-044290 (Merinotech WA Poll, 4290)
7	One Oak No. 2, R56	503855-2010-100R56	503855-2008-080004
8	One Oak, 1100Y1	502251-2011-1100Y1	503805-2009-090778
9	Pooginook, Pearl	500788-2010-103073	500788-2008-082065 (Pooginook, Ranger)
10	Roseville Park, 110011	504166-2011-110011	504166-2009-090014 (Roseville Park, 090014)
11	Roseville Park, 3.1440 (Historical)	504166-1993-931440	503543-0000-000129 (Glen Donald, 129)
12	Uardry, 080270 (Dohne)	510030-2008-080270	510004-2006-063471

# Leahcim sires perform with animal welfare

Tag	WWT	YCFW	EBWR
<b>090918</b>	<b>4.1</b>	<b>12.9</b>	<b>-1.7</b>
<i>Accuracy</i>	<i>98%</i>	<i>96%</i>	<i>98%</i>
<b>101259</b>	<b>5.4</b>	<b>22.8</b>	<b>-1.5</b>
<i>Accuracy</i>	<i>98%</i>	<i>95%</i>	<i>97%</i>
<b>Industry average</b>	<b>1.7</b>	<b>9.3</b>	<b>0.1</b>

# DNA Parentage

**2016** – All 4500 stud animals DNA tested for Poll and Parentage

Why?

- Environmental
  - Pedigree matchmaker
  - Larger commercial type groups, better grazing practice
- Traceability & transparency
  - Performance – Good & Bad
  - Supply chain, eating quality etc.
  - Genetic disorders
  - Genetic security
- Accuracies
  - Data for ASBV's
  - Parentage
    - First JIVET program 40% wrong
    - WS already wrong
- Save labor

# Modiano reignites mulesing debate

- A PETITION signed by the world's largest woollen mills is urging the Australian wool industry to lift their animal welfare standards.
  - Signed by 34 mill directors, representing 70 per cent of the active global wool combing capacity
  - "Our co-signatories and we are increasingly concerned that the perception of animal cruelty is holding back the wool market in certain key regions of the world," Mr Modiano said.
  - "Demand for non-mulesed wool has risen by 50per cent in the past year here in London.
  - "We believe that many global brands would love to use wool in their products but are terrified of being contaminated by the association with animal cruelty
  - "It is not acceptable to consumer brands."
  - "It is not acceptable to the wool trade at large."
- ❖ Not just the wool industry the meat industry will suffer as well, recently a major processor failed to win a contract because they couldn't verify that the mothers of the lambs were not mulesed.