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for

Premium

Quality

Wool

# Repeatability of Production Traits in Merino Sheep

Produced for the CRC for Premium Quality Wool undergraduate program by;  
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# Phenotypic correlation between records at 10-12 and 15-16 months of age

	Peppin Merino	SA Merino
Fleece weight	0.62	0.55
Yield%	0.65	0.56
Fibre diameter	0.65	0.72
Staple length	0.50	0.61
Staple strength	-	0.23
Body weight	0.85	0.78

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Source: Young et al (1960); Ponzoni et al. (1995)



# Repeatability estimates for production traits: measurements beginning at 15-16 months of age

<b>Fleece weight</b>	<b>0.6 – 0.8</b>
<b>Yield</b>	<b>0.5 – 0.8</b>
<b>Fibre diameter</b>	<b>0.5 – 0.8</b>
<b>Staple length</b>	<b>0.5 – 0.7</b>
<b>Body weight</b>	<b>0.7</b>
<b>Wrinkle score</b>	<b>0.5 – 0.7</b>
<b>Lambs born per ewe joined</b>	<b>0.1</b>
<b>Lambs weaned per ewe joined</b>	<b>0 – 0.1</b>

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# Relationship between age and wool growth at hogget ram shearing

Wool Growth (mths)	Age of rams at hogget shearing (months)				Total
	< 10	10-13	13-16	> 16	
< 6	16	5	0	1	22
6-8	15	36	3	0	54
8-10	3	27	14	3	47
> 10	0	8	14	16	38
<b>Total</b>	<b>34</b>	<b>76</b>	<b>31</b>	<b>20</b>	<b>161</b>



# Relationship between age and wool growth at first stage selection of rams

Wool Growth (mths)	Age of rams at first stage selection (months)				<i>Total</i>
	< 12	12-15	15-18	> 18	
< 4	3	11	24	14	<b>52</b>
4-6	1	15	36	18	<b>70</b>
6-10	6	6	10	8	30
> 10	1	0	4	4	9
<i>Total</i>	<b>11</b>	<b>32</b>	<b>74</b>	<b>44</b>	<b>161</b>

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Source: Casey and Hygate (1992)





# Selection timing: age and wool growth

- First fleece weighing of hogget rams, if done, based mainly on <10 months wool growth and at 12 months age
- Fleece testing for fibre diameter, if done, likely to be based on <10 months wool (pre-shearing) or <6 months wool (pre-selection)
- Rams carrying <6 months wool at first stage selection (15-17 months age)

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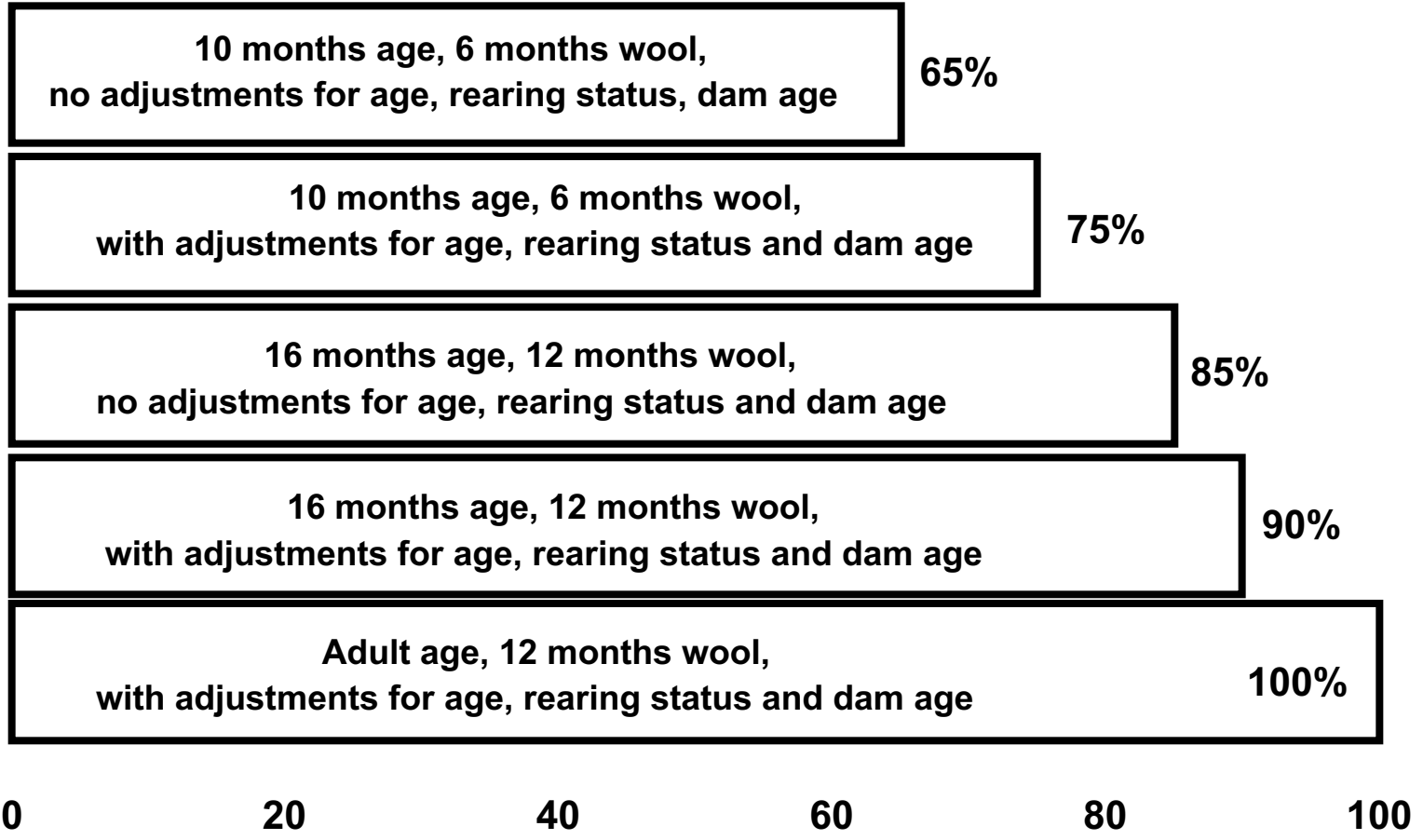
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# Early age vs adult selection: relative genetic progress in breeding objective for increased fleece weight and constant diameter

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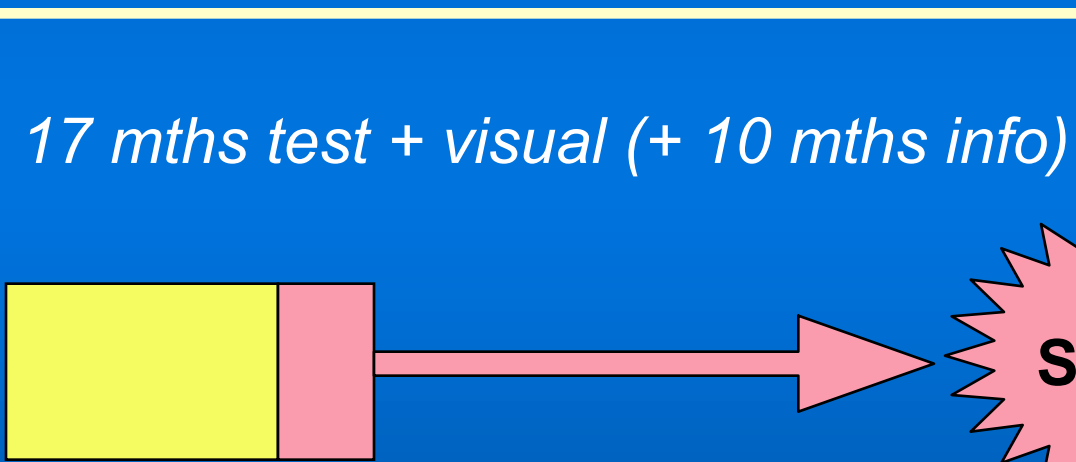
# Two-stage selection

**First Stage**



*10 mths test + 14 mths visual*

**Second Stage**



*17 mths test + visual (+ 10 mths info)*

**Reserve sales**

*95% as efficient as adult selection*

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