

As of March 2010, LAMBPLAN users will have access to three new indexes for the maternal, dual purpose and self-replacing breeds.

The introduction of these new indexes brings the maternal breeds in line with the LAMB2020 index now being used by the terminal breeds. This range of new indexes improves the balanced approach to breeding by including a wider range of traits.

The new indexes are;

Mat\$ (Index_14) Maternal \$ Index	this index is intended to replace the breed specific maternal indexes such as Border \$ and Coopworth \$
Corriedale\$ (Index_25) Dual Purpose \$ Index	this index is suited to use by breeders of dual purpose breeds such as Corriedale and SAMM
SRC\$ (Index_4) Self-Replacing Carcase \$ Index	this index is for use by breeds included in the Terminal analysis with the intention of producing a self-replacing flock with a strong emphasis on carcase traits, for example Dorper, Wiltshire Horn, Wiltipoll and Boer Goats.

While the new Maternal \$ index is different to the current breed specific maternal indexes (such as the Border \$ index), it still has a very high correlation (98%) with these indexes. This is due the consistent high emphasis on growth and number of lambs weaned between these indexes.

The Corriedale \$ index has the same breeding objectives as the Maternal \$ index except it has a moderate emphasis on improving greasy fleece weight and a small emphasis on reducing micron.

The SRC \$ index has the same breeding objectives as the Maternal \$ index except it has no economic values for fleece traits. The fact that selection pressure is not being used on fleece traits allows higher gains to be made for growth and carcase traits.

The main difference you will notice with the new indexes is that they bring forward selection pressure for growth by including weaning weight. With more producers targeting earlier turn-off ages, the relative value for growth is now split 40:60 between weaning weight (WWT) and post weaning weight (PWT). These indexes also no longer place selection pressure on reducing fat depth, so that maternal breeds will have reasonable levels of body fat in order to maintain reproductive fitness and adaptability.

The additional traits of birth weight (BWT) and worm egg count (PWEC) has been included. To limit further increases in birth weight (BWT), a negative \$ emphasis is placed on the increasing birth weights which come as a result of selecting for high growth rates.

The loss of production from internal parasites is the highest disease cost to the Australian sheep industry (\$360M per annum; MLA 2009), and resistance to anthelmintics by internal parasites is resulting in less effective chemical treatment options for worms. Selection for lower PWEC ASBV is one of the strategies that producers can put in place to assist with worm management.

The dollar value for PWEC has been calculated using a range of PWEC of 100 units is worth approximately 10% of the value of improvement in growth. Over the last few years, more breeders are measuring PWEC which, with additional information from research, will provide breeders access to sires with accurate ASBVs for PWEC.

So what do these indexes do?

The following table shows the relative selection emphasis and predicted changes over 10 years for the Maternal \$, Corriedale \$ and Self Replacing Carcase \$ indexes.

Trait	Maternal \$ Index		Corriedale\$ Index		SRC \$ Index	
	Relative Emphasis	Gain over 10 years	Relative Emphasis	Gain over 10 years	Relative Emphasis	Gain over 10 years
BWT (kg)	11%	0.2	14%	0.2	11%	0.2
WWT (kg)	23%	2.7	20%	2.2	23%	3.0
MWWT (kg)	5%	0.4	3%	0.2	5%	0.4
PWT (kg)	25%	4.0	28%	3.8	26%	4.3
PFAT (mm)	4%	0.1	4%	0.1	5%	0.1
PEMD (mm)	5%	0.3	9%	0.4	10%	0.6
NLW (%)	16%	10	7%	4	14%	9
PWEC (%)	8%	-24	2%	-17	6%	-13
YGFW (%)	3%	0	10%	6.1	----	----
YFD (μ)	----	----	3%	-0.2	----	----

This table highlights several important points:

- Despite a negative economic value on birth weight, birth weight still increases by 0.20kg over 10 years. This is due to the very high positive correlations that exist between growth and birth weight.
- Despite no economic value on PFAT, it increases slightly by 0.1 mm over 10 years. This is a direct result of the higher emphasis now on muscle, as well as the positive correlation between muscle and fat.

The new maternal \$ indexes better serve the needs of breeders of maternal, dual purpose and self-replacing sheep. They balance growth, muscle and fertility characteristics, while maintaining or improving fat cover and the survival traits of birth weight and worm egg count.

If you require further information regarding these indexes or how to use them please contact the Sheep Genetics staff.