

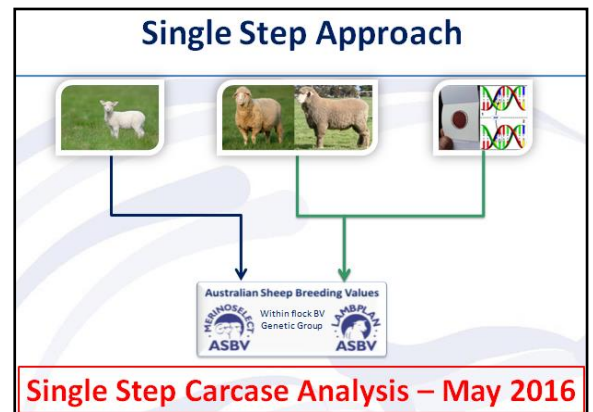
# Tasty Tender Lamb

Eating quality (EQ) of lamb is becoming increasingly important to consumers, and there is evidence to show that they are prepared to pay significantly more for a premium eating experience.

However it has been difficult to include EQ in a measureable breeding objective, because the traits that affect it are impossible to measure readily on the live animal. For some time now we have had Research Breeding Values (RBVs) available on sheep that were genotyped, or their close relatives. These RBVs were the result of small scale, single trait, genomic only analysis. For some standard traits “blending” ASBVs with genomic breeding values has also been used.

Sheep Genetics recently made changes to the way the analysis is done, especially for carcass traits. What is known as the “Single Step Approach” incorporates genotype with pedigree information, and other trait measurements to produce ASBVs for carcass traits including EQ traits such as Intramuscular fat (IMF) and Shear force (SF5).

This approach means that many more animals will have breeding values for carcass and EQ traits than before, although reporting is still subject to accuracy thresholds.



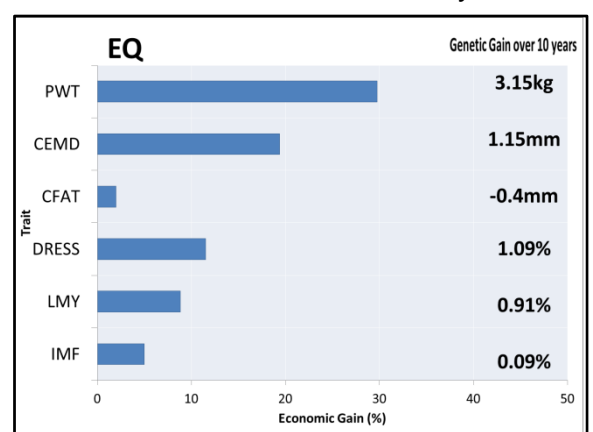
Selection for increased growth, leanness and muscling in terminal breeds, has seen quite dramatic changes in the recent past. However the antagonistic relationship between traits like Lean Meat Yield (LMY), and traits vital to improved EQ, like IMF and SF5, means that they are moving in the wrong direction.

One way to limit the effect of this antagonistic relationship and move all traits in the right direction is to use an index incorporating all the traits of importance. As a result of work done by Sheep Genetics and AGBU two new terminal sire breed indexes that include eating quality traits have been released. These eating quality indexes have been developed to give producers the opportunity to make balanced selection decisions reflecting animals with superior meat eating quality in their flock.

## Eating Quality (EQ)

The eating quality index is targeted at terminal producers interested in improving the meat eating quality of their prime lambs while continuing to improve production traits in a balanced way. The EQ index is based on the same production targets as Carcass + with the added emphasis on eating quality traits including Intramuscular fat (IMF) and Shear force (SF5).

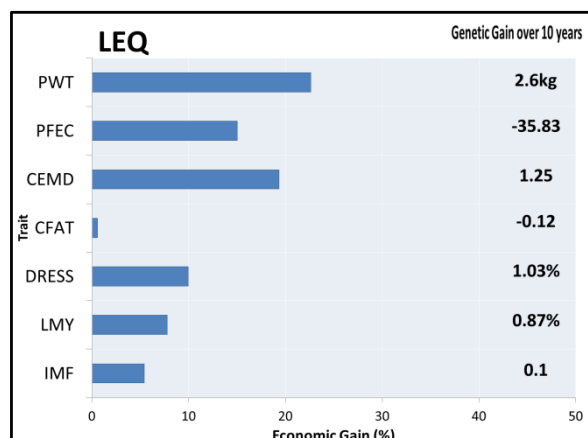
The graph to the right represents the predicted economic gains for each trait of interest in the index and also expresses the expected 10 year gains for the individual traits.



## **Lamb 2020 + EQ (LEQ)**

The Lamb 2020 Eating Quality index is targeted at terminal producers interested in improving the meat eating quality of their prime lambs while continuing to improve production traits in a balanced way. The LEQ index is similar to the EQ index however is based on the same production targets as Lamb 2020 where birthweight (BWT) and worm egg count (WEC) are important in the breeding objective. The greater emphasis on WEC is the main difference between LEQ and EQ.

The graph to the right represents the predicted economic gains for each trait of interest in the index and also expresses the expected 10 year gains for the individual traits.



The following table illustrates the predicted genetic gain over 10 years for all recognised traits in the new eating quality indexes alongside Carcase + and Lamb 2020.

Trait	Carcase +	EQ	Lamb 2020	LEQ
BWT (kg)	0.15	0.06	0.07	0.07
WWT (kg)	2.85	1.55	1.85	1.28
PWT (kg)	4.4	3.15	2.8	2.6
PEMD (mm)	1.46	1.07	1.44	1.17
PFAT (mm)	0.14	0.04	0.59	0.33
PWEC (%)	0.06	0.16	-52.24	-35.83
CEMD (mm)	1.5	1.15	1.42	1.25
CCFAT (mm)	-0.5	-0.4	0.07	-0.12
DRESS (%)	1.31	1.09	1.1	1.03
LMY (%)	1.66	0.91	1.14	0.87
SF5 (nM)	0.77	-2.41	0.62	-2.06
IMF (%)	-0.27	0.09	-0.14	0.1

It is expected that the gain made over 10 years for LMY is reduced in the eating quality indexes compared to Carcase + and Lamb 2020 due to the antagonistic relationship between IMF/SF5 and LMY. Although this is the case, LMY still improves over 10 years while the response in eating quality traits is significantly improved.

These indexes are targeting a balanced production system where LMY, IMF and SF5 are all improved at the same time.

For information about these new indexes, contact LAMBPLAN Development Officer, Clara Collison

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