

## Maximise Muscle. Everytime.

The loin muscle is the source of the highest value cuts of lamb and is a key driver of carcass value.

LoinMAX<sup>®</sup> is a DNA test for a gene which increases the size of the loin muscle in sheep.

Sheep identified with the LoinMAX<sup>®</sup> effect have 10% more muscle in the loin compared to non-LoinMAX<sup>®</sup> animals of the same genetic background.

## Why LoinMAX<sup>GOLD</sup><sup>®</sup>

A LoinMAX<sup>GOLD</sup><sup>®</sup> ram has two copies of the gene and passes the LoinMAX<sup>®</sup> muscling effect on to all of its offspring. This makes a LoinMAX<sup>GOLD</sup><sup>®</sup> ram ideal for use as a terminal sire for prime lamb production.

Cost-benefit modelling has shown that the use of a LoinMAX<sup>GOLD</sup><sup>®</sup> ram over commercial ewes can add between \$1.50 and \$2.90 per lamb\*. Assuming that a terminal sire produces 270 - 400 slaughter progeny in its lifetime, a LoinMAX<sup>GOLD</sup><sup>®</sup> ram can deliver returns between \$394 and \$1,164 per ram mated more than using a non-carrier ram of the same genetic background.

\*Modelled on a 38kg LWT lamb, dressing out at 44% and producing a 17kg carcass with an average loin value of \$13.59 per kilogram (industry range between \$9.00 – \$24.00).

## Accelerating Genetic Gain with LoinMAX<sup>GOLD</sup><sup>®</sup>

Actively selecting for LoinMAX<sup>®</sup> will significantly increase the rate of genetic gain in muscling even when breeders are already selecting for muscling as part of their performance recording programme.

The LoinMAX<sup>®</sup> DNA test is the only way to rapidly identify and breed LoinMAX<sup>GOLD</sup><sup>®</sup> animals.



## Breeding with LoinMAX®

The LoinMAX® effect is only inherited from the sire. When LoinMAX® is inherited from the dam only, the LoinMAX® effect is silent and her progeny do not have the larger loin muscle trait.

MATING SCENARIO		LOINMAX® STATUS OF PROGENY			% OF PROGENY WITH LARGER LOIN MUSCLE
Sire	Dam	LoinMAX <sup>GOLD</sup> ®	LoinMAX®	Non-carrier	
LoinMAX <sup>GOLD</sup> ®	Non-carrier	-	100%	-	100%
	LoinMAX®	50%	50%	-	
	LoinMAX <sup>GOLD</sup> ®	100%	-	-	
LoinMAX®	Non-carrier	-	50%	50%	50%
	LoinMAX®	25%	50%	25%	
	LoinMAX <sup>GOLD</sup> ®	50%	50%	-	
Non-carrier	Non-carrier	-	-	100%	-
	LoinMAX®	-	50%	50%	
	LoinMAX <sup>GOLD</sup> ®	-	100%	-	

## Validation of LoinMAX®

Large-scale industry trials have confirmed and validated the LoinMAX® effect in a number of industry populations of different genetic backgrounds and via different quantitative methods of phenotypic measurement e.g. live animal scan vs carcass bone-out data.

These trials have also confirmed that LoinMAX® has no significant negative effects on other traits such e.g. meat quality or growth rate.

Acknowledgements; Landcorp & AgResearch conducted the initial research that led to the development of the LoinMAX® DNA test.

## Questions and Answers

- Q:** Can LoinMAX® be tested at the same time as other Pfizer Animal Genetics genetic tests?
- A:** Yes, breeders who currently use Pfizer Animal Genetics' Shepherd® DNA parentage system can also have their sheep tested for LoinMAX® at the same time.
- Q:** What breeds is LoinMAX® present in?
- A:** LoinMAX® has been identified within Poll Dorsets and composite breeds containing Poll Dorset genetics. Industry validation trials indicate that the frequency of LoinMAX® carriers within un-selected Poll Dorset flocks is 5%-10% on average. LoinMAX® is also being actively introgressed into other terminal sire breeds.