

Inclusion of meat processor information in the Meat module

SIL TECHNICAL NOTE

Relates to: Processor information used in the revised Meat Module

Date: January 2019

Background

In recent years there has been an increase in the number of progeny tests where carcass data is collected on lambs at slaughter. There is now sufficient data for this information to be used in the evaluation.

Types of meat processor information:

- VIAscan – data has been included since 2006.

New processor information:

- Carcass weights – both cold and hot (often recorded in progeny test flocks)
- Carcass GR
- Carcass butt circumference score
- Carcass cut measurements – e.g. Maral (Progressive Meats Ltd)

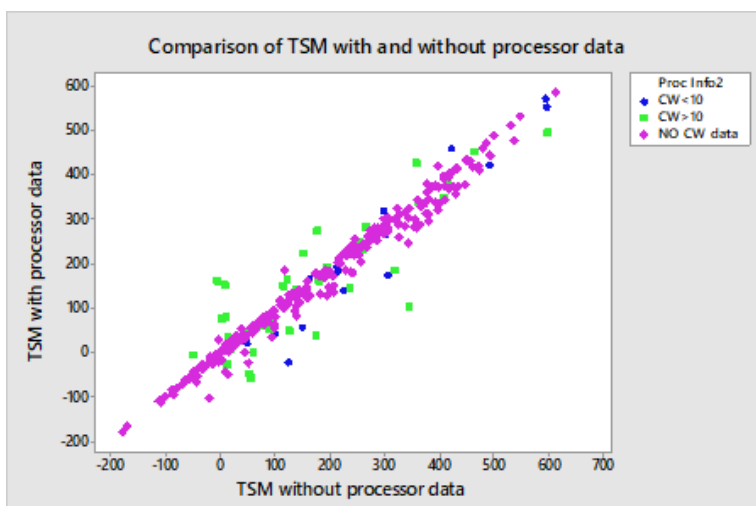
Calibration of new measurements against CT

The above measurements have been calibrated against spiral CT (3D image of carcass) and weighted accordingly. As new systems of carcass measurement become available they can also be calibrated against spiral CT, future proofing the meat module.

Impact of processor information on Meat breeding values

The example graph below shows the impact of processor data on TSM values when processor information is included (vertical values) versus when it is not included (horizontal). This is based on a progeny test flock and the flocks that contributed sires.

Fig 1. Comparison of TSM with and without processor information



Blue: CW < 10 = 1-9 progeny carcass weight records

Green: CW > 10 = 10 or more progeny carcass weight records

Pink: No CW data = no processor info, may have ultrasound data

Fig 1 shows that the impact of the processor information for sires with few progeny measurements was minimal (blue dots), but more significant for sires with a lot of progeny measurements (green dots).

The movements were balanced both upwards and downwards – for some sires the addition of progeny carcass measurements increased the TSM values and for others there was a decrease– i.e. there was no skewing of information. The scale of the changes is determined by the amount of information and the accuracy of the different sources of processor information relative to spiral CT.

Sires with large number of progeny carcass weights (green squares) moved more than those with few records - <10 progeny measurements. With less data available the system constrains the spread of BVs, with more data there is more confidence in the prediction with a greater spread of values.

The pink dots are the other sires in the contributing flocks that do not have progeny processor measurements. There is a small spread among these values. Where individuals in the contributing flocks had close relatives with measurements, there is a small adjustment to their values. For individuals in contributing flocks with no close relatives with processor data, there is little to no change in meat BVs.

A few contributing flocks did not record ultrasound data, the processing data is the only meat data to inform meat BVs for sires in these flocks and they will see some large changes, as you would if they began to ultrasound muscle scan for the first time.

Impact on Meat breeding values

The CWY, SHLY, LNLY, HQLY and for terminals the FATY BVs will be informed by all available meat data, including processor measurements when available. Breeding values will be more accurate.

Summary

Actual carcass weights and measurements are included in the estimation of Meat breeding values in single step NZGE from February 2019.

Processor information allows a greater spread of values for sires with progeny data, depending on the amount of information. Animals move both up and down based on progeny data, there is no bias.

Additional data increases the accuracy of the prediction of Meat merit. The different sources of information are weighted according to accuracy, as calibrated against spiral CT.

Calibration against spiral CT means there is a mechanism whereby other current or future methods of measuring carcasses could be added.