

Breeding Sustainable Beef Cows: Reducing Mature Cow Weight and Increasing Cow Productivity

Beef production system efficiency and sustainability are important aspects shaping the future of the beef industry. Genetic selection has long included traits on growth, carcass, and reproduction, but recently more focus has been placed on traits that impact efficiency and sustainability such as mature cow weight, maintenance energy, and methane emissions.

The Limousin breed is extremely well placed to help the beef industry be more efficient and sustainable, due to the unique advantages of the F94L gene, from increased muscling, having earlier finishing ages and higher feed efficiency than other breeds. Moreover, the superior dressing percentages of Limousin cattle means that animals can be killed at lower liveweights than other cattle targeting the same carcass weights. Despite these advantages, Limousin breeders must also continue to be mindful of maintaining more moderate mature cow weights. Over the past 20 years, there has been a general trend towards increasing the mature cow weight of Limousin cows. This is potentially an issue when it comes to being more efficient and sustainable as a breed because larger cows have higher nutrient requirements and are therefore less efficient. Increases in mature cow body weight result in a reduction in stocking capacity to apply the same grazing pressure on a given land base. Reducing mature cow weight can favourably impact feed efficiency and methane emissions while improving the profitability of a beef business (Source: [Snelling 2022](#)).

Improving the efficiency and sustainability of commercial Limousin cow-calf production systems will improve the kilograms of calf weaned per hectare and consequently profitability. This is because reducing the mature weight of Limousin cows will reduce feed costs. Moreover, the total kilograms of calves weaned throughout a cow's life in production will be higher for cows that have shorter gestation lengths, wean a healthy calf, and avoid being culled as a result of reproductive failure, unsoundness and bad disposition.



The Role of Selection and Mating

Mature cow size can be effectively controlled through sire selection. Mature cow weight is a high heritability trait with literature estimates ranging from 35 to 70%. Selection pressure applied to Mature Weight EBVs in sire selection should therefore be an effective means of changing mature cow weight.

Cow mature weight affects the costs and efficiency of a breeding operation. Cow weight is also influenced by the environment, and the relationship between the size and profitability of a cow varies depending on the production system. Cow longevity (length of productive life) also plays an important role in achieving a profitable business. A balanced approach should therefore be applied to genetic selection. Nutritional management is also an essential factor underpinning the efficiency of the breeding herd.

Measuring Mature Cow Weight

Mature Cow Weight EBVs are an estimate of the genetic difference in cow weight at five years of age and are based on the weights recorded for cows at the same time as the 200-day weights are recorded for their calves. It is recommended that you collect the mature weight of a cow at the same time you are recording the 200-day weight of her calf.

Mature cow weights should be recorded using appropriate (and accurate) scales. Do not guess/estimate weight or use measuring tapes to calculate weight. Either weigh the cows using appropriate scales or don't record weights. Mature cow weights should be recorded to the nearest kilogram. You can read BREEDPLAN's [Tip Sheet](#) for more information on how to record your mature cow weights.

The bottom line is, if you don't measure mature cow weight then you won't be able to monitor and improve this trait. Measuring and maintaining or improving mature cow weights will significantly improve the efficiency and therefore sustainability of the Limousin breed.

Breeding better Limousin cows isn't just about boosting production — it's about creating a balanced, cost-effective, and sustainable operation. By focusing on cost control, thoughtful genetic selection, and

efficient feed use, cattle producers can improve the overall efficiency of their operations, ultimately leading to greater profitability and long-term success.

Georgia Pugh
neXtgen Agri
Breed Advancement Team