



BANNITUP & NARANDA ANGUS

BREEDING QUALITY CATTLE WITH INTEGRITY FOR A PROFITABLE FUTURE

NEWSLETTER JUNE 2021

Another calving season has gone by with only a handful of cows still to calve. The difference in seasons is obvious to see with the calves powering away due to the cow's extra milk. The stand-outs are the Alternative calves on the Beast Mode heifers. This is a joining which combines two of the breeds great cows: **Isabela Y69** (the dam of Beast Mode, Bronc, Compass, 38 Special, Colonel and many more bulls of note), and **Blackbird A030** (the dam of Alternative, Command and Versatile). Lookout for these at the 2023 sale.

Due to the Angus Societies abortive attempt to change the TACE indexes to better reward smaller mature weights (an attempt I think will be repeated), I thought I would look at why they feel this is important. I will spend much of this newsletter looking at the research and literature available on the subject.

The Angus society has recently released its Angus CONNECT Research and Development Update - Autumn 2021 on YouTube. One of the segments looks at the economics of mature weight and also combines milk production. Anyone interested should look it up on the Angus Australia YouTube channel. The relevant talk starts at 38 minutes and 53 seconds.

Finally, thanks to all who attended and bid at the last sale - it was our most successful sale to date. This and the record cattle prices gives us great confidence for the future.



Beast Mode dam with her Alternative calf

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OPTIMAL COW SIZE

For many years I have listened to discussions around what the optimal cow size is. Some have argued that smaller cows require less feed and, therefore, you can run more on a given area of land and produce more kg/ha of beef. Others claim bigger cows produce bigger calves and, therefore, they are worth more. There have also been suggestions that larger cattle mature later, and others point to feed-lot efficiency as a factor.

It's undeniable that cattle are getting bigger. During a recent Angus CONNECT research and development update, Angus Australia extension manager, Andrew Byrne, said the continued selection for growth had led to Angus cows getting about 2.5kg heavier each year resulting in an increase of around 40kg in the last 20 years. Other studies have the increase at around 150kg since the mid-70s.

This increase in mature weight is a response to selection pressure for increased weaning and carcass weights, as producers strive to produce animals more attractive to the feed-lot sector. According to the Australian Angus Society, the genetic heritability for weaning weight is 0.35 but the relationship between weaning weight and mature weight is 0.55. This means the selection for increased weaning weight will have about a 12% impact on weaning weight, but a 30% impact on mature weight. While the Angus breed has been somewhat successful in keeping the birth weights under control - even though there is a higher genetic relationship of 36% with weaning weight - the same is not the case for mature weight. This could be because the costs of calving difficulties are obvious, but the costs of larger mature weights are only evident if you look for them.

Professor Dorian Garrick, a New Zealand geneticist and cattle breeder, gave a presentation at the Angus Through Ages conference where he claimed the average 2017-born steer earned \$103/head more than a 1980 steer, but the average mature cow weight had increased 100kg to 150kg in a similar time, leading to increased feed costs. While the increased steer earnings were shared amongst the producers, feed-lotters and processors, the increased cow costs were carried solely by the cow/calf producer, causing him to suggest the genetic change was not an improvement for the cow/calf producer.

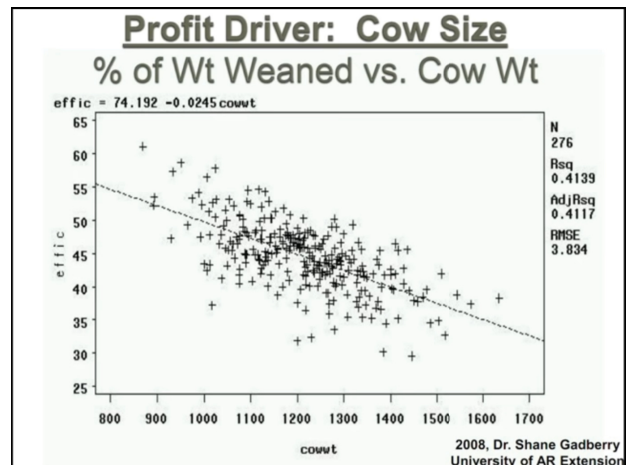
While larger cows have larger maintenance requirements the relationship is not 1:1. It is calculated that cows with 20% more weight require 13% more feed for maintenance. This is because maintenance costs are affected by the relationship

between surface area and mass. This relationship is known as Kleiber's Law. So, if a producer were to increase their mature cow weight from 500kg to 600kg, they would need to increase their feed ration by 13%.

It's generally accepted that a larger cow will wean a larger calf, but that relationship is not 1:1 either. As a cow gets bigger the % of her weight weaned decreases. An example of weight weaned is if a cow weighs 600kg and she weans a 300kg calf, that's 50%. A study in America looked at 3 different cow sizes, small - 400kg, medium - 450kg and moderate - 540kg. The % weaning weight was 52.5%, 47.7% and 42.9% respectively. Figure 1 demonstrates this downward trend well. Another study found that for a 100lb increase in cow weight there was a corresponding weaning weight increase of only 10lb.

The question is, does the increase in feed efficiency compensate for the drop in weaning efficiency? Work done by MLA's, More Beef from Pastures program has shown that at low stocking density, larger cows can be reasonably profitable, but once average or higher stocking rates are achieved, there is no real economic benefit to cows over 550kg mature weight.

Figure 1.



This information allows us to do some rough calculations of our own. If we assume the property was fully stocked with 500kg cows and no additional feed was needed and we increased the size of our cows to 600kg, what are the implications? We know the cows will eat an extra 13% so let's call that 13% of a year or about 50 days. Hay is about \$150/ tonne and a 600kg cow will require 20kg of hay per day so 20kg x 50 days is 1 tonne or \$150.

The American study tells us a 500kg cow will wean a 226.5kg calf and a 600kg cow will wean a 240kg calf. If we assume a price of \$4.00/kg then the value of the calves will be \$906 and \$960 respectively or an extra \$54, leaving a discrepancy of -\$96/head.

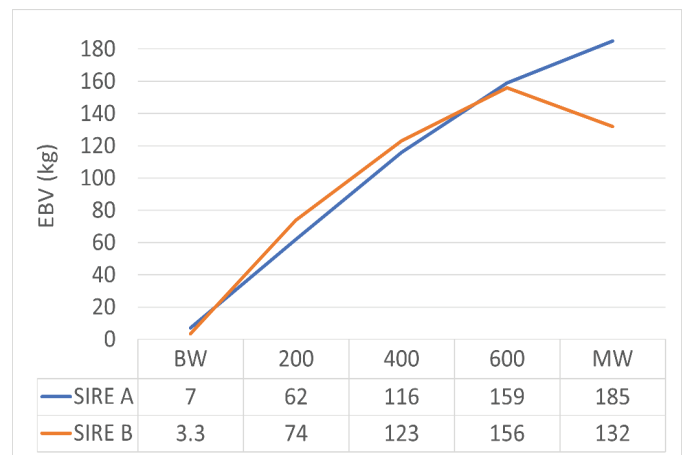
People argue the bigger cow is worth more when you sell her so let's factor that in. Our assumed herd is a progressive herd, so we like to have a short genetic interval and turn over the cows after 4 calves and the extra feed was only in their 4 mature years. We get \$2.50/kg at the sale yards. The extra 100kg is worth \$250 divided by 4 years is \$62.50, leaving a discrepancy of -\$33.50 per head.

These figures are very rough, and current cattle prices will significantly change the outcome of the calculations. The current prices will most likely have softened by the time you sell any cows produced from today's breeding decisions, so I would take a conservative approach to reduce risk. What these figures do highlight is the need to do your homework before choosing genetics which increase your mature cow weight.

Genetic rules are not hard and fast, and outliers are common. This is what makes breeding cattle so interesting and challenging. Modern technology, like the development of TACE EBV's has given the cow/calf producer the ability to select for "curve bending sires". Every animal has a growth curve. It represents the animals weight gain over its life until it is

mature. The graph below represents two well used sires in the Angus breed. As you can see sire B has a lower birth weight with explosive early growth before tapering off to a moderate mature weight. What it is saying is this bull's progeny will be heavier at weaning, but his mature daughters will be smaller than bull A. This is a curve bender. Sire B gives you the best of both worlds. A heavy and more valuable weaner and a smaller cow with lower maintenance requirements. Just as downward selection pressure for birth weight has kept birth weight in check, similar selection pressure could have the same effect on mature weight.

Figure 2.



BULLS AVAILABLE



There are just a few 2 year old bulls left and only 1 or 2 are suitable for heifers. If you still require a bull for the current mating season, call Andrew or David on the numbers below or Darren Chatley at Nutrien on 0457 553 969.

We encourage all clients to provide us with feedback on any past purchases or their needs for the future. This information is critical in making sure our genetic direction continues to service your needs.



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