

THE FUTURE'S IN THE GENES

5

# STEPS TO FINDING THE BEST BULL FOR YOUR OPERATION

The decision you make about which bull to buy this season will affect your business for four cow generations. Taking 10 minutes to read this now should yield you an exceptional return.

## STEP 01

### What do you want to achieve on your farm?

#### There are two parts to this question:

First, what is your high-level farm operational goal? May be it's to increase kilograms of carcase per hectare? Or to be at minimal stock numbers by 1 December, as a drought management strategy?

Secondly, with an eye on that broad objective, what performance do you need from your beef animals to help achieve your big-picture goal? This will help you identify your "beef breeding objective". For example "I need minimal stock numbers going into winter. Therefore, I want calves that will grow quickly, so I can quit them at weaning".

## STEP 02

### Mindful of your beef breeding objective, find a bull breeder who focuses on similar breeding objectives to what you're looking for.

Because you want to make progress towards your farm operational goal, ask the breeder for **genetic trend graphs** and percentile band tables for the breed. These will show whether the breeder is improving in the traits you want to change and where their bulls rate for traits you want to "hold" (e.g. if you are happy with your mature cow weight and want it left unchanged).

The genetic trend graphs should show a positive upward trend for the traits that impact on your goals. If not, look for another breeder.

## STEP 03

### Choose the bull that will do the job for your operation.

First up, you need to identify which "**traits**" are important to you. There are up to 20 traits for which bulls are rated (based on what they will pass on to their offspring) by the genetic evaluation, Breedplan. So, if you want to increase the weight of your calves at weaning, then you'll need to look closely at a bull's "200 Day Weight" trait.

Genetic merit for traits is communicated as a number, called an "Estimated Breeding Value" (EBV). EBVs are in units relevant to the trait (e.g. 200 Day Weight is in kilograms, while Gestation Length is in days).

By concentrating on the EBVs relevant to the trait/s that you are interested in, you can readily see which bull on offer is strongest in a particular trait and will therefore help you reach your goals more quickly.

You can compare "your bull" to a breed average, which gives you a feel for how he rates for that trait, relative to other bulls of that breed. You do this by using the **breed averages** that are always published below the EBVs for "your bull".

#### Comparing a bull's EBVs with breed averages:

	GEST LENGTH (days)	BIRTH WEIGHT (kg)	200-DAY WEIGHT (kg)	400-DAY WEIGHT (kg )	600-DAY WEIGHT (kg)	MATURE COW WT (kg)	MILK (kg)	INDEX (\$)
YOUR BULL	-0.3	+6.4	+51	+96	+122	+109	+18	\$149
BREED AVE	-3.4	+4.3	+42	+76	+99	+87	+14	\$115

**Breed percentiles table (with the example bull's EBVs highlighted):**

	GEST LENGTH (days)	BIRTH WEIGHT (kg)	200-DAY WEIGHT (kg)	400-DAY WEIGHT (kg)	600-DAY WEIGHT (kg)	MATURE COW WT (kg)	MILK (kg)	INDEX (\$)
Top Value	-15.3	-2.3	+67	+116	+160	+174	+35	+218
Top 1%	-8.8	+0.8	+55	+99	+132	+127	+23	+178
Top 5%	-7.0	+1.9	+51	+92	+122	+114	+21	+162
Top 10%	-6.1	+2.4	+49	+88	+117	+108	+19	+152
Top 15%	-5.5	+2.8	+48	+86	+113	+104	+18	+146
Top 20%	-5.1	+3.1	+47	+84	+111	+101	+17	+141
Top 25%	-4.7	+3.3	+46	+82	+108	+98	+17	+136
Top 30%	-4.4	+3.5	+45	+81	+106	+95	+16	+132
Top 35%	-4.1	+3.7	+44	+80	+104	+93	+16	+128
Top 40%	-3.9	+3.9	+43	+78	+102	+91	+15	+124
Top 45%	-3.6	+4.1	+42	+77	+101	+89	+15	+120
Top 50%	-3.4	+4.3	+42	+76	+99	+87	+14	+116
Top 55%	-3.2	+4.5	+41	+75	+97	+85	+14	+112
Top 60%	-2.9	+4.7	+40	+73	+95	+83	+13	+108
Top 65%	-2.7	+4.8	+39	+72	+93	+80	+13	+104
Top 70%	-2.5	+5.0	+38	+70	+91	+78	+12	+100
Top 75%	-2.2	+5.2	+37	+69	+89	+76	+12	+96
Top 80%	-1.9	+5.5	+36	+67	+86	+73	+11	+92
Top 85%	-1.5	+5.8	+34	+65	+83	+69	+10	+87
Top 90%	-1.0	+6.1	+32	+62	+79	+65	+9	+82
Top 95%	-0.3	+6.6	+29	+57	+72	+58	+8	+74
Top 99%	+1.5	+7.7	+22	+46	+56	+43	+5	+55
Low Value	+7.8	+11.5	+8	+17	+3	-2	-4	+16

You can get a better feel of how your bull compares to other bulls of the breed by using a **percentile bands table**. It will tell you if your bull is a stand out, or more middle of the road. The Breed Percentiles Table makes this super simple.

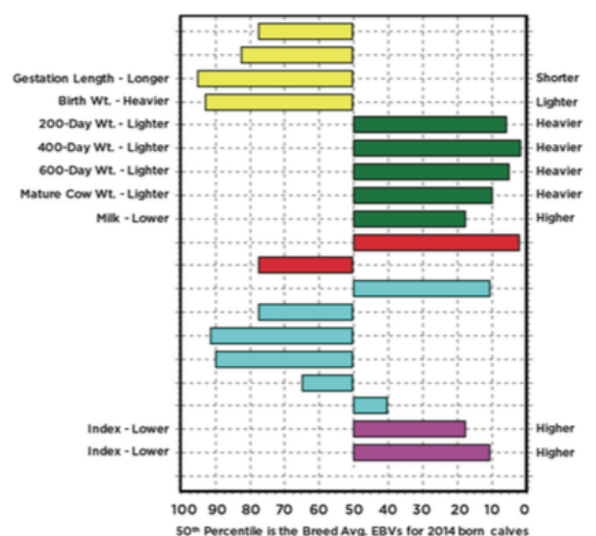
What's the story with our example bull?

He's in the top 95% (i.e. only 5% are more lowly rated) of the breed for Gestation Length, with an EBV of -0.3 days - telling us he will leave daughters with an extended gestation. He's also in the top 90% (i.e. bottom 10%) for birth weight, so his calves will be born heavy, and this will likely be exaggerated further by his long gestation length (a longer time in utero results in a larger calf at birth). His Milk EBV is strong, as are his 200, 400 and 600 Day Weight figures. Also consider his heavy Mature Cow Weight EBV (top 10% of the breed). In a nutshell, this bull would wean heavy calves and his daughters would be exceptional milkers.

However, they will be large cows to feed and will more than likely need calving assistance. Good milking cows that put alot of their energy towards lactation may struggle to get back in calf as they have little energy left to cycle. A bull like this would fit well into a farming system that did not keep replacements, where all progeny were processed.

Another useful tool is the **EBV graph**, which shows relative genetic merit at a glance. Basically, you want a bull to have bars toward the right hand side of the graph, for the traits you care about.

**EBV graph for the example bull:**



Most simple to use is a bull's **selection index**. Indexes identify 'overall profitability' and weigh up the balance of genetic merit across all the traits for a particular production system.

It's a single figure and presented as a dollar value, so it takes the confusion out of using lots of EBVs with a range of different units. Some breeds have a range of indexes targeted at different markets, according to the traits of key importance in those markets.

The example bull has an Index value of \$149, putting him in the top 15% of his breed for overall profitability in that market and production system. However, this bull may not score as well on a different Index, because of EBV make up.






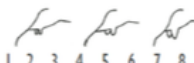



NB: If you are focused on making progress in a particular trait, it's worth taking the time to dig down into the EBV level of detail, rather than just using the index figure.

## STEP 04

### Check your bull over for sexual and structural soundness.

No matter how good a bull's index and EBVs are, if he can't serve a cow then he can't pass on his genetics.

The **Beef Class Structural Assessment (BCSA)** system is a good objective way to make your assessment.

Trait	Key	Scoring Range	
Docility	D	① 2 3 4 ⑤	1. Docile 3. Restless 5. Aggressive
Front Feet Claw Set Rear Feet Claw Set	FC RC	 1 2 3 4 5 6 7 8 9	1. Open/Divergent 5. Good 9. Scissor Claw
Front Feet Angle Rear Feet Angle	FA RA	 1 2 3 4 5 6 7 8 9	1. Stubbed Toe 5. Good 9. Shallow Heel
Rear Legs Side View	RS	 1 2 3 4 5 6 7 8 9	1. Straight 5. Good 9. Sickie Hocked
Rear Legs Hind View	RH	 1 2 3 4 5 6 7 8 9	1. Bow Legged 5. Good 9. Cow Hocked
Front Legs Front View	FF	 1 2 3 4 5 6 7 8 9	1. Bow Legged 5. Good 9. Knocked Knee
Udder Evenness	UE	1 2 3 4 5 6 7 8 9	1. Dropped Fore Qtr. 5. Good Balance 9. Dropped Rear Qtr.
Teat Size and Shape	TZ	 1 2 3 4 5 6 7 8 9	1. Very Small/Thin 5. Good 9. Very Large/Bulbous
Sheath & Navel Score	SN	 ① 2 3 4 ⑤	1. Pendulous 3. Good 5. Clean/Tight
Capacity	CP	①  2 3 4 ⑤	1. Lacking Capacity 3. Medium 5. Large Volume
Muscle Score	LM	 A B C D E	A. Very Heavy C. Medium E. Light

## STEP 05

### Welcome your bull home.

Take the time to settle your bull into his new home and book him in with the vet for an annual pre-mating **Bull Breeding Soundness Evaluation (BBSE)**.