\$A

\$276

1

\$473

1

DISCLAIMER AND PRIVACY INFORMATION

Attention Buyer

Animal details included in this catalogue, including but not limited to pedigree, DNA information, Estimated Breeding Values (EBVs) and Index values, are based on information provided by the breeder or owner of the animal. Whilst all reasonable care has been taken to ensure that the information provided in this catalogue was correct at the time of publication, Angus Australia will assume no responsibility for the accuracy or completeness of the information, nor for the outcome (including consequential loss) of any action taken based on this information.

Parent Verification Suffixes

The animals listed within this catalogue including its pedigree, are displaying a Parent Verification Suffix which indicates the DNA parent verification status that has been conducted on the animal. The Parent Verification Suffixes that will appear at the end of each animal's name.

The suffix displayed at the end of each animal's name indicates the DNA parentage verification that has been conducted by Angus Australia.

PV: both parents have been verified by DNA.

SV: the sire has been verified by DNA.

DV: the dam has been verified by DNA.

#: DNA verification has not been conducted.

E: DNA verification has identified that the sire and/or dam may possibly be incorrect, but this cannot be confirmed conclusively.

Privacy Information

In order for Angus Australia to process the transfer of a registered animal in this catalogue, the vendor will need to provide certain information to Angus Australia and the buyer consents to the collection and disclosure of that information by Angus Australia in certain circumstances. If the buyer does not wish for his or her information to be stored and disclosed by Angus Australia, the buyer must complete the form included below and forward it to Angus Australia. If the form is not completed, the buyer will be taken to have consented to the disclosure of such information.

BUYERS OPTION TO OPT OUT OF DISCLOSING PERSONAL INFORMATION TO ANGUS AUSTRALIA

If you do not complete this form, you will be taken to have consented to Angus Australia using your name,

address and phone number for the purposes of effecting a change of registration of the animal(s) that you have purchased, maintaining its database and disclosing that information to its members on its website.				
I, the buyer of animals with the following idents				
from member(name) do not consent to Angus				
Australia using my name, address and phone number for the purposes of effecting a change of registration				
of the animals I have mentioned above that I have purchased, maintaining its database and disclosing that				
information to its members on its website.				
Name: Signature:				
Date:				

Please forward this completed consent form to Angus Australia, 86 Glen Innes Road, Armidale NSW 2350.



If you have any questions or queries regarding any of the above, please contact Angus Australia on (O2) 6773 4600 or email office@angusaustralia.com.au

RECESSIVE GENETIC CONDITIONS

This is information for bull buyers about the recessive genetic conditions, Arthrogryposis Multiplex (AM), Hydrocephalus (NH), Contractural Arachnodactyly (CA) and Developmental Duplications (DD).

Putting undesirable Genetic Recessive Conditions in perspective

All animals, including humans, carry single copies (alleles) of undesirable or "broken" genes. In single copy form, these undesirable alleles usually cause no harm to the individual.

But when animals carry 2 copies of certain undesirable or "broken" alleles it often results in bad consequences. Advances in genomics have facilitated the development of accurate diagnostic tests to enable the identification and management of numerous undesirable or "broken" genes.

Angus Australia is proactive in providing its members and their clients with relevant tools and information to assist them in the management of known undesirable genes and our members are leading the industry in their use of this technology.

What are AM, NH, CA and DD?

AM, NH, CA and DD are all recessive conditions caused by "broken" alleles within the DNA of individual animals. When a calf inherits 2 copies of the AM or NH alleles their development is so adversely affected that they will be still-born.

In other cases, such as CA and DD, calves carrying 2 copies of the broken allele may reach full-term. In such cases the animal may either appear relatively normal, or show physical symptoms that affect their health and/or performance.

How are the conditions inherited?

Research in the U.S. and Australia indicates that AM, NH, CA and DD are simply inherited recessive conditions. This means that a single gene (or pair of alleles) controls the condition.

For this mode of inheritance two copies of the undesirable allele need to be present before the condition is seen; in which case you may get an abnormal calf. A more common example of a trait with a simple recessive pattern of inheritance is black and red coat colour.

Animals with only one copy of the undesirable allele (and one copy of the normal form of the allele) appear normal and are known as "carriers".

What happens when carriers are mated to other animals?

Carriers, will on average, pass the undesirable allele to a random half (50 %) of their progeny.

When a carrier bull and carrier cow is mated, there is a 25% chance that the resultant calf will inherit two normal alleles, a 50% chance that the mating will result in a carrier (i.e. with just 1 copy of the undesirable allele, and a 25% chance that the calf will inherit two copies of the undesirable gene.

If animals tested free of the undesirable gene are mated to carrier animals the condition will not be expressed at all. All calves will appear normal, but approximately half (50%) could be expected to be carriers.

How is the genetic status of animals reported?

DNA-based diagnostic tests have been developed which can be used to determine whether an individual animal is either a carrier or free of the alleles resulting in AM, NH, CA or DD.

Angus Australia uses advanced software to calculate the probability of (untested) animals to being carriers of AM, NH, CA or DD. The software uses the test results of any relatives in the calculations and the probabilities may change as new results for additional animals become available.

The genetic status of animals is being reported using five categories:

AMF	Tested AM free	
AMFU	Based on Pedigree AM free - Anima has not been tested	
AM_%	_% probability the animal is an AM carrier	
AMC	AMC Tested AM-Carrier	
AMA	AM-Affected	

For NH, CA and DD, simply replace AM in the above table with NH, CA or DD.

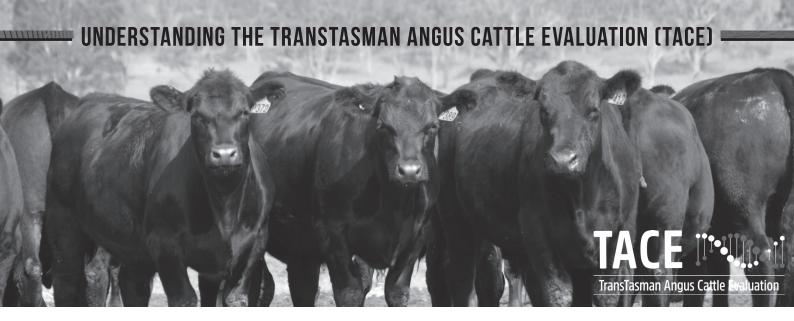
Registration certificates and the Angus Australia web-database display these codes. This information is displayed on the animal details page and can be accessed by conducting an "Database Search" from the Angus Australia website or looking up individual animals listed in a sale catalogue.

Implications for Commercial Producers

Your decision on the importance of the genetic condition status of replacement bulls should depend on the genetics of your cow herd (which bulls you previously used) and whether some female progeny will be retained or sold as breeders.

Most Angus breeders are proactive and transparent in managing known genetic conditions, endeavouring to provide the best information available. The greatest risk to the commercial sector from undesirable genetic recessive conditions comes from unregistered bulls with unknown genetic background. The genetic condition testing that Angus Australia seedstock producers are investing in provides buyers of registered Angus bulls with unmatched quality assurance.

For further information contact Angus Australia's Breed Development & Extension Manager on (02) 6773 4618.



What is the TransTasman Angus Cattle Evaluation?

The TransTasman Angus Cattle Evaluation is the genetic evaluation program adopted by Angus Australia for Angus and Angus influenced beef cattle. The TransTasman Angus Cattle Evaluation uses Best Linear Unbiased Prediction (BLUP) technology to produce Estimated Breeding Values (EBVs) of recorded cattle for a range of important production traits (e.g. weight, carcase, fertility).

The TransTasman Angus Cattle Evaluation is an international genetic evaluation and includes pedigree, performance and genomic information from the Angus Australia and Angus New Zealand databases, along with selected information from the American and Canadian Angus Associations.

The TransTasman Angus Cattle Evaluation utilises a range of genetic evaluation software, including the internationally recognised BLUPF90 family of programs, and BREEDPLAN® beef genetic evaluation analytical software, as developed by the Animal Genetics and Breeding Unit (AGBU), a joint institute of NSW Agriculture and the University of New England, and Meat and Livestock Australia Limited (MLA).

What is an EBV?

An animal's breeding value can be defined as its genetic merit for each trait. While it is not possible to determine an animal's true breeding value, it is possible to estimate it. These estimates of an animal's true breeding value are called EBVs (Estimated Breeding Values).

EBVs are expressed as the difference between an individual animal's genetics and a historical genetic level (i.e. group of animals) within the TACE genetic evaluation, and are reported in the units in which the measurements are taken.

Using EBVs to Compare the Genetics of Two Animals

TACE EBVs can be used to estimate the expected difference in the genetics of two animals, with the expected difference equating to half the difference in the EBVs of the animals, all other things being equal (e.g. they are joined to the same animal/s).

For example, a bull with a 200 Day Growth EBV of +60 would be expected to produce progeny that are, on average, 10 kg heavier at 200 days of age than a bull with a 200 Day Growth EBV of +40 kg (i.e. 20 kg difference between the sire's EBVs, then halved as the sire only contributes half the genetics).

Or similarly, a bull with an IMF EBV of +3.0 would be expected to produce progeny with on average, 1% more intramuscular fat in a 400 kg carcase than a bull with a IMF EBV of +1.0 (i.e. 2% difference between the sire's EBVs, then halved as the sire only contributes half the genetics).

Using EBVs to Benchmark an Animal's Genetics with the Breed

EBVs can also be used to benchmark an animal's genetics relative to the genetics of other Angus or Angus infused animals recorded with Angus Australia.

To benchmark an animal's genetics relative to other Angus animals, an animal's EBV can be compared to the EBV reference tables, which provide:

- · the breed average EBV
- the percentile bands table

The current breed average EBV is listed on the bottom of each page in this publication, while the current EBV reference tables are included at the end of these introductory notes. For easy reference, the percentile band in which an animal's EBV ranks is also published in association with the EBV.

Considering Accuracy

An accuracy value is published with each EBV, and is usually displayed as a percentage value immediately below the FBV.

The accuracy value provides an indication of the reliability of the EBV in estimating the animal's genetics (or true breeding value), and is an indication of the amount of information that has been used in the calculation of the FBV.

EBVs with accuracy values below 50% should be considered as preliminary or of low accuracy, 50-74% as of medium accuracy, 75-90% of medium to high accuracy, and 90% or greater as high accuracy.

Description of TACE EBVs

EBVs are calculated for a range of traits within TACE, covering calving ease, growth, fertility, maternal performance, carcase merit, feed efficiency and structural soundness. A description of each EBV included in this publication is provided on the following page.

UNDERSTANDING ESTIMATED BREEDING VALUES (EBVS)

e	CEDir	%	Genetic differences in the ability of a sire's calves to be born unassisted from 2 year old heifers.	Higher EBVs indicate fewer calving difficulties in 2 year old heifers.
Calving Ease	CEDtrs	%	Genetic differences in the ability of a sire's daughters to calve unassisted at 2 years of age.	Higher EBVs indicate fewer calving difficulties in 2 year old heifers.
Calv	GL	days	Genetic differences between animals in the length of time from the date of conception to the birth of the calf.	Lower EBVs indicate shorter gestation length.
	BW	kg	Genetic differences between animals in calf weight at birth.	Lower EBVs indicate lighter birth weight.
	200 Day	kg	Genetic differences between animals in live weight at 200 days of age due to genetics for growth.	Higher EBVs indicate heavier live weight.
Growth	400 Day	kg	Genetic differences between animals in live weight at 400 days of age.	Higher EBVs indicate heavier live weight.
	600 Day	kg	Genetic differences between animals in live weight at 600 days of age.	Higher EBVs indicate heavier live weight.
	MCW	kg	Genetic differences between animals in live weight of cows at 5 years of age.	Higher EBVs indicate heavier mature weight.
	Milk	kg	Genetic differences between animals in live weight at 200 days of age due to the maternal contribution of its dam.	Higher EBVs indicate heavier live weight.
Fertility	DtC	days	Genetic differences between animals in the time from the start of the joining period (i.e. when the female is introduced to a bull) until subsequent calving.	Lower EBVs indicate shorter time to calving.
Feri	SS	cm	Genetic differences between animals in scrotal circumference at 400 days of age.	Higher EBVs indicate larger scrotal circumference.
	CWT	kg	Genetic differences between animals in hot standard carcase weight at 750 days of age.	Higher EBVs indicate heavier carcase weight.
Carcase	EMA	cm ²	Genetic differences between animals in eye muscle area at the $12/13$ th rib site in a 400 kg carcase.	Higher EBVs indicate larger eye muscle area.
	Rib Fat	mm	Genetic differences between animals in fat depth at the 12/13th rib site in a 400 kg carcase.	Higher EBVs indicate more fat.
	P8 Fat	mm	Genetic differences between animals in fat depth at the P8 rump site in a 400 kg carcase.	Higher EBVs indicate more fat.
	RBY	%	Genetic differences between animals in boned out saleable meat from a 400 kg carcase.	Higher EBVs indicate higher yield.
	IMF	%	Genetic differences between animals in intramuscular fat (marbling) at the 12/13th rib site in a 400 kg carcase.	Higher EBVs indicate more intramuscular fat.
Feed/ Temp.	NFI-F	kg/ day	Genetic differences between animals in feed intake at a standard weight and rate of weight gain when animals are in a feedlot finishing phase.	Lower EBVs indicate more feed efficiency.
-FE	Doc	%	Genetic differences between animals in temperament.	Higher EBVs indicate better temperament.
Structure	Foot Angle	score	Genetic differences in foot angle (strength of pastern, depth of heel).	Lower EBVs indicate more desirable foot angle.
Stru	Claw Set	score	Genetic differences in claw set structure (shape and evenness of claws).	Lower EBVs indicate more desirable claw structure.
	\$A	\$	Genetic differences between animals in net profitability per cow joined in a typical commercial self replacing herd using Angus bulls. This selection index is not specific to a particular market end-point, but identifies animals that will improve overall net profitability in the majority of commercial, self replacing, grass and grain finishing beef production systems.	Higher selection indexes indicate greater profitability.
Selection Index	\$A-L	\$	Genetic differences between animals in net profitability per cow joined in a typical commercial self replacing herd using Angus bulls. This selection index is not specific to a particular market end-point, but identifies animals that will improve overall net profitability in the majority of commercial, self replacing, grass and grain finishing beef production systems. The \$A-L index is similar to the \$A index but is modelled on a production system where feed is surplus to requirements for the majority of the year, or the cost of supplying additional feed when animal feed requirements increase is low. While the \$A aims to maintain mature cow weight, the \$A-L does not aim to limit the increase in mature cow weight as there is minimal cost incurred if the feed maintenance requirements of the female breeding	Higher selection indexes indicate greater profitability.
			herd increase as a result of selection decisions.	



BRINGING YOUR LEW BULL HOME

WHEN PURCHASING A BULL, CARE AND HANDLING AFTER THE SALE CAN BE AS IMPORTANT AS THE PURCHASE ITSELF.

LOOKING AFTER YOUR BULL WELL DURING THE INITIAL STAGES OF HIS WORKING LIFE MAY ENSURE LONGEVITY

AND SUCCESS WITHIN YOUR BREEDING HERD.

PURCHASE

Temperament is an important characteristic when selecting a bull. Selecting a bull that may be flighty or aggressive will make life difficult for you each time he is handled. Note which bulls continually push to the centre of a mob, run around, or are unreasonably nervous, aggressive or excited.

At the sale, note any changes of temperament by individual bulls. Some bulls that are quiet in the yard or paddock may not like the pressure and noise of the auction and become excited. Others that were excited beforehand get much worse in the sale ring and can really perform. Use the yard or paddock behaviour as a guide, rather than the temperament shown in the ring.

DELIVERY

When transporting your new bull insurance against loss in transit, accidental loss of use, or infertility, is sometimes provided by vendors. Where it is not, it is worth considering. After purchase tips:

- When purchasing, ask which health treatments he has received.
- Treat and handle him quietly at all times no dogs, no buzzers. Talk to him and give him time and room to make up his mind.
- With more than one bull from different origins, you must be able to separate them on the truck.
- Make sure that the truck floor is covered to prevent bulls from slipping. Sand, sawdust or a floor grid will prevent bulls from being damaged by going down in transit.
- If you can arrange it, put a few quiet cows or steers on the truck with the bull. Let them down into a yard with the bulls for a while before loading and after unloading.
- Unload and reload during the trip as little as possible If necessary, rest with water and feed.
 Treat bulls kindly your impatience or nervousness is easily transmitted to an animal unfamiliar to you and unsure of his environment.

IF YOU USE A PROFESSIONAL CARRIER:

 Make sure the carrier knows which bulls can be mixed together.

- Discuss with the carrier, resting procedures for long trips, expected delivery time, truck condition and quiet handling.
- Give ear tag and brand numbers to the carrier and make sure you have the carrier's phone number.
- If buying bulls from interstate, organise any necessary health tests before leaving and work out if any other requirements must be met before cattle can come into another State.

When buying bulls from far away, you may often have to fit in with other delivery arrangements to reduce cost. You should make it clear how you want your bulls handled.

ARRIVAL

When the bull or bulls arrive home, unload them at the yards into a group of house cows, steers or herd cows. Never jump them from the back of a truck directly into a paddock—it may be the last time you see them. Bulls from different origins should be put into separate yards with other cattle for company.

Provide hay and water, then leave them alone until the next morning .

The next day, bulls should receive routine health treatments. If they have not been treated before, all bulls should be vaccinated with:

- 5-in-1 vaccine:
- · vibriosis vaccine:
- leptospirosis vaccine (if in areas like the Hunter where leptospirosis exists);
- three-day sickness vaccine (if in areas where this sickness can cause problems).

Give particular attention to preventing new bulls bringing vibriosis into a herd. Vibriosis, a sexually transmitted disease, causes infertility and abortions and is most commonly introduced to a clean herd by an infected bull. These bulls show no signs of the illness. Vaccinated bulls are free from vibriosis, so vaccinating bulls against the disease should be a routine practice.

Vaccination involves two injections, 4–6 weeks apart, at the time of introduction, and then a booster shot every year. Complete the vaccinations 4 weeks before joining.



BRINGING YOUR ROME HOME

Consult with your veterinarian and draw up a policy for treating bulls on arrival and then annually. Bulls should be drenched to prevent introducing worms and, if necessary, should be treated for lice.

Plan to give follow-up vaccinations 4-6 weeks later. Leave the bulls in the yards for the next day or two on feed and water to allow them to settle down with other stock for company. A bull's behaviour will decide how quickly he can be moved out to paddocks.

MATING NEW YOUNG BULLS

Newly purchased young bulls should not be placed with older herd bulls for multiple-sire joining. The older, dominant bull will not allow the young bulls to work, and will knock them around while keeping them away from the cows.

Use new bulls in either single-sire groups or with young bulls their own age. If a number of young bulls are to be used together, run them together for a few weeks before joining starts. They sort out their pecking order quickly and have few problems later.

When the young bulls are working, inspect them regularly and closely.

MATING NEW YOUNG BULLS

Older working bulls also need special care and attention before mating starts. They should be tested or checked every year for physical soundness, testicle tone, and serving capacity or ability.

All bulls to be used must be free-moving, active and in good condition. Working bulls may need supplementary feeding before the joining season to bring up condition.

DURING MATING

- Check bulls at least twice each week for the first 2 months. Get up close to them and watch each bull walk; check for swellings around the sheath and for lameness.
- Have a spare bull or bulls available to replace any that break down. Replace any suspect bull immediately.
- Rotate bulls in single-sire groups to make sure that any bull infertility is covered. Single-sire joining works well but it has risks. The bulls must be checked regularly and carefully, or the bulls should be rotated every one or two cycles.

Bulls are a large investment for breeding herds and they have a major effect on herd fertility. A little time and attention to make sure they are fit, free from disease and actively working is well worthwhile.

NORTHERN AUSTRALIA

Although the Angus breed originated in a cooler climate, they can adapt to subtropical regions with many straightbred and cross bred producers finding success in Northern Australia. Some of the following information may also be helpful for new bulls located in more temperate climates.

ADAPTATION

They key to Northern success for Angus is that cattle introduced from the Southern regions of Australia be allowed to adapt to their new environment before commencing their working life. If possible, a break of 3 months is advisable before you set your bull to work.

PURCHASE IN COOLER MONTHS

Ensure your bulls are in good condition before they do commence their working life. The cooler months are an ideal time to purchase and introduce Angus cattle, allowing them plenty of time to acclimatise.

CHANGE OF FEED SOURCE

When inducting Angus cattle into your herd consider their source of feed. Have you taken an animal which has been supplemented on grain straight to a dry pasture? Animals should be gradually changed over to their new feed to ensure they do not lose condition. This may involve using supplements which could include dry lick/urea blocks.

MANAGING CATTLE TICKS

For ticky areas, bulls should be vaccinated prior to transport and given another booster afterwards. Remember males are more susceptible to ticks than females.

Information is provided by the Department of Primary Industries NSW. For further information visit the DPI web site: www.dpi.nsw.gov.au. or www.angusaustralia.com. au. Further reading - Buying Angus Bulls

FOR FURTHER INFORMATION VISIT

www.angusaustralia.com.au

Angus Australia Locked Bag 11, Armidale NSW 2350 Phone: (02) 6772 3011 | Fax: (02) 6772 3095

Email: office@angusaustralia.com.au Website: www.angusaustralia.com.au The suffix displayed at the end of each animal's name indicates the DNA parentage verification that has been conducted by Angus Australia.

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Cattle Evaluation