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EDITORIAL

One of the most important, if not the most important factor as breeders of any animals, is that we need to have some knowledge of genetics.

Today, there are a number of tools available that are there to assist you in making informed decisions in this regard. Most stud breeders and some commercial breeders can provide a family history of the genetics around the animals they are selling and other information provided by science and genomics also provide excellent guidance. I guess in the most basic sense, what you need to know is that if you breed a cow with a bull, you need to: firstly, know what you are expecting their offspring to be like and secondly, how you are going to determine that the offspring resulting from that mating is what you were expecting.

Being able to see documented breeding histories of the animals you are using for your own breeding is a good place to start. Even better is if you can actually see grand-parents, great grandparents etc. in the flesh.

One of the main factors that we have been promoting is a “tight” gene pool to produce consistency of the end product. In other words, keep the family lineage fairly close. That way, you can be fairly confident that you can get a good idea of what your calves will look like before they are born. There is no question that hybrid vigour has a major role to play in the cattle industry. However, its role is far greater in regards to meat production than breeding in our experience. Certainly, if you are developing a new breed, using only the animals that exhibit high hybrid features are the ones to keep developing the line from. However, you may still need to be prepared for a increasing number of culls as you breed through the generations.

When you cross-breed in an indiscriminate way, you will not get the same consistency or balance in your end product. They might okay if they are in a terminal program and being marketed on the "bulk" market where quality is not a prerequisite.

WHAT'S (BEEN) HAPPENING

* Just to confirm that we have made changes to our business which we have reflected on our website to show a list of registered evaluators and their details so that you can contact them if you wish to have your cattle evaluated using the Classic system. We will continue to provide the same evaluating service and run field days and courses whenever the demand justifies it without the imposts and costs associated with a company structure. Our book "The Vision Tender" will also still be available on the website.

* We are continuing to put together requirements for anyone interested in becoming a registered evaluator and at this stage it will require attendance at one of our past or future five day courses and supervised evaluation of a number of cattle (500 – 1000 depending on previous experience) with one of our registered evaluators. Our evaluators will be operating as private consultants mainly and work together when needed to run courses, field days etc.

*We recently held a highly successful one day field day at Hanaminno Station, near Boorowa in NSW, which was attended by over twenty participants. Many thanks to Charlie Arnott, Hanaminno Station, and his team for providing excellent facilities and for their support for the day. We were able to have a close look at their Shorthorn cattle. Also, many thanks to Albert Hancock, Paul Cavanagh and Doug and James Paton for assisting with our presentation and assisting those present to understand our system. All of these evaluators have completed a five day course and Albert co-presents with me.

*We are currently planning a one-day field day in the Ballina region of North-East NSW on May the 26th. or 27th. I will let you know when we have finalised the details. If you are interested in having a field day near you or would like to host one, please let myself or Albert Hancock (0417244057/0267334666) know and we will get it under way. We would like to be as flexible as possible in our future planning and would welcome and appreciate any input that you can provide.

* I am pleased to say that we have been able to book the Clermont Show and Sale yard facilities for a five day course commencing on Monday the 17th. July and finishing on Friday the 21st. July. We currently have nearly enough people interested in attending to justify holding the course so if you are interested, please let me know.

*I would also like to report that Albert Hancock, who had a confrontation with his tractor about 6 months ago is now on the road to recovery and was able to attend the day we held at Boorowa without too much pain. He still has a way to go but is confident he will be fit to partner me in running the Clermont course.

*Coodardie still have some Brahman bulls available for private sale and further information is available on their website – www.coodardie.com.au.

EXPRESSIONS OF INTEREST

*We are also happy to promote sales for any breeders, stud or otherwise, who would like to put them in our newsletter, so please let me know the details.

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BREED OF THE QUARTER.

Dangi

The Dangi is an indigenous cattle breed of India. It originated in the hilly areas of the Bombay State known as Dangs. It comprises the Nasik and Ahmednagar districts in the state of Maharashtra.

Because of its hilly terrain, it attracts a heavy rainfall and has a very poor agricultural economy. The breed has become well-known on account of its hardy nature and its ability to work hard under heavy rainfall conditions. The Dangi breed, which is similar to Deoni, appears to fit into the group of cattle represented by the Gir, Red Sindhi and Sahiwal. Dangi breed is also known as “Kandadi”.

Dangi cattle have a distinct white coat colour with red or black spots distributed unevenly over the body, are medium in size, with deep bodies and generally have what could be described as a fairly ponderous build. The height behind the hump ranges from about 45 to 50 inches while the heart girth measures from about 58 to 60 inches, on the average. The breed is medium to large in body size. They are a very good draught breed and known for their adaptability to heavy rainfall areas. The skin of this breed secretes an oil element that enables them to tolerate heavy rains.

The head is usually small with a slightly protruding forehead. The muzzle is large and the horns, though of variable size, are generally short and thick. The ears are small.

The animals have powerful hind and forequarters with a short back and the legs are short and stout. The hooves are exceptionally hardy, being black and flint-like. The dewlap is slightly pendulous. The sheath, though loose, is not excessively pendulous. The hump is medium-sized and firm.

They are primarily medium-slow draft animals that are well-known for their excellent working qualities in heavy rain and are at home in rice fields and on hilly roads. Dangi cattle are extensively used for ploughing, harrowing and other field operations, and for carting timber from forest areas.

The cows are generally regarded as poor milkers, though attempts are being made to improve their milking qualities. Average milk yield per lactation is 430 kilograms with an average milk fat of 4.3%. The lactation milk yield ranges from 175 to 800 kg.

It is likely that whilst the Dangi is an indigenous breed, it has a number of similar characteristics to other localised indigenous Zebu breeds such as the Guserat, Gir, Red Sindhi and Sahiwal. Its main differences appear to be that it thrives in high rainfall areas, is not as good as many other Zebu breeds for milking qualities and it is still one of the more popular local breeds for draught work.

There has been a concerted attempt to ensure the future of the breed which started back in 1946 with the establishment of the Cattle Breeding Farm and Dangi Cow Research Station at Igatpuri and was a government undertaking. The main objective was to maintain and breed pure Dangi bulls suitable for higher rainfall and hilly tract areas. This scheme was focused for benefit of tribal farmers as this is the only breed which could sustain in the adverse climatic conditions and drought prone western Ghat Zone of Maharashtra State. During 1979, the farm was handed over to the Mahatma Phule Krishi Vidyapeeth, Rahuri and in 1984-85 the National Agriculture Research Project (NARP) was established by MPKV at Igatpuri and this scheme was merged under the umbrella of NARP.

In 2014, BAIF Development Research Foundation (BAIF) initiated the conservation and revival of indigenous breeds including Dangi. Towards this end BAIF carried out various activities including a preliminary survey on livestock in the districts.

Through these surveys, BAIF collected data on livestock population, management, health services, constraints in animal rearing and family details of farmers. Various training programs on fodder, vaccination and shelter management were conducted for optimum growth and economic benefits of livestock farming. BAIF also undertook the conservation through Maharashtra Gene Bank Project (MGBP). The objective was to conserve important indigenous livestock breeds by blending traditional and scientific knowledge and by involving the community. This plan is ongoing and designed to ensure the future of the Dangi breed.

FOOT AND LEG SHAPE

- The feet and legs of an animal are of critical importance in determining their ability to be productive. Without good mobility and rhythmical movement, the animal is unable to move to the most suitable feed and water in the shortest time. Feet and leg problems will have an influence on other parts of the animal as it moves around. It will affect the shoulders, hips and spine physiologically and the animal's productive performance if it can't readily move to good food supplies. This is directly related to the basic form of the animal.
- In bulls, the front of the stifle bone needs to be as close as possible to straight under the hip bone to ensure an even weight

spread of the bull's weight when he is serving a cow. If this is not the case, it will often force the cow to the ground and can cause physical damage.

- A well-shaped and developed stifle bone will provide the opportunity for the stifle muscle to fully develop and a well-rounded stifle muscle is a sign of a higher meat to bone and fat ratio.
- A smaller heart girth will tend to cause the front feet of an animal to toe out leading to ongoing problems with feet and toes.

Ideally, the feet should show a steep angle, with a deep heel and short, well rounded, closed toes. They should be small, neat and show a sound structure. This trait is directly related to the animal's mobility and durability. The heel should be deep and sit squarely on the ground.

An average foot angle is more angled in relation to the ground and therefore will tend to increase the sickle of the rear leg to its maximum acceptability.

A foot angle that is very shallow will reduce the animal's ability to stand and travel for long periods. This amount of angle is more prone to foot rot and other feet related problems

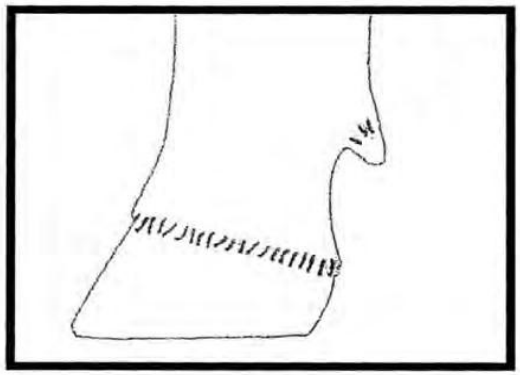

FIGURE 1

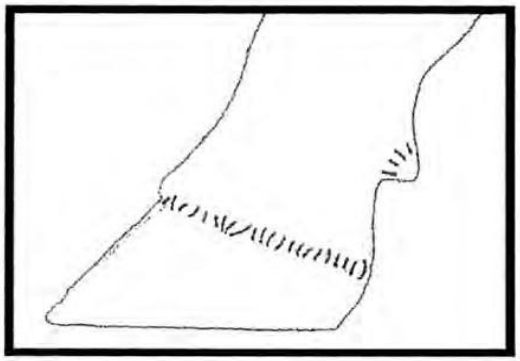

FIGURE 2

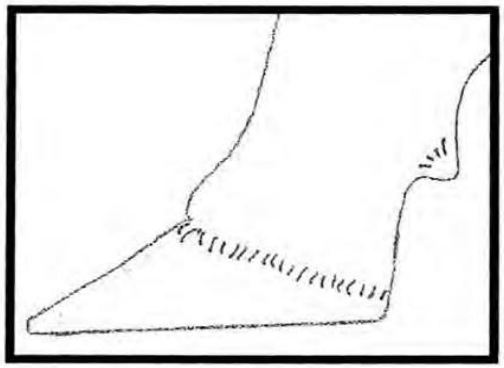

FIGURE 3

SUSTAINABLE BREEDING

The following comments are added as a follow on from those in the editorial about genetics and breeding. For those of you who have spent decades in the cattle industry, most of the following is pretty much common sense, though "uncommon" may be a more accurate way to describe it today. We live in a time when knowledge has increased in such a form (information technology) and at such a rate that has never before been achieved in recorded history. What we need to remember is that knowledge without wisdom is a dangerous thing. Knowledge is the fact or condition of knowing something with familiarity gained through experience, observation and association, the fact or condition of being aware of something and an understanding and unconscious awareness of this leads to wisdom.

The following paragraphs are based on some of the many discussions we were fortunate enough to have had with the late Gearld Fry on the topics of breeding and genetics and I have included some of his writings as part of this topic. They are also a result of discussions with a number of very experienced breeders who have experimented with a range of genetic combinations in their herd and after many years have drawn similar conclusions to those we have come to.

The main aim of crossbreeding as primarily used by the commercial producer, is to achieve a high degree of hybrid vigour that is largely expressed in a higher average daily gain in the calves and it will usually gain at a higher rate than either of its purebred parents.
As a general rule, crossbreeding programs were used to produce animals that were terminal i.e. not going to be used for breeding. This is because only the results of the first cross are genetically predictable.

Originally, the idea was that producers would maintain a separate purebred herd to produce replacement females for their main herd. However, this idea fell by the wayside quite quickly.
Today's genetic problems started with breeders keeping crossbred heifers and using them to breed replacements.
For example, they would keep a black baldy heifer as a replacement and her father was a Hereford bull the half-blood cow should then be bred back to an Angus bull to produce a 3/4 blood Angus calf. Then that 3/4 blood Angus heifer bred back to a Hereford bull to produce a 3/4 blood Hereford.

This method of breeding will keep hybrid vigour at a somewhat higher level and selection for quality more controlled.
However, to achieve this became unpractical for most producers because of the number of separate herds that must be kept for this program to work. This became too difficult for most producers, especially when rotational grazing was used and each herd had to have its own set of paddocks.

After a few years, breeders became lost in their program and the result was that all the cows were run together and bull breeds were switched periodically to try to maintain a certain colour or colour combination.
Eventually, most just bought whatever was fashionable at that moment and the result is the mish mash of breeds we have today with some so-called stud purebreds returning a 90% or less result for purity when DNA tested.

What has been totally forgotten is that the effect of heterosis greatly diminishes after the first cross. Today, most of us are into our 30th or so cross. The end result of this initial great crossbreeding idea has been a mongrelized resulting in an unpredictable cowherd with no hybrid vigour and an ever-diminishing eating quality in its meat. In a desire to simplify breeding programs, some seedstock providers adopted the composite bull theory. In other words, a crossbred bull for crossbred cows.
Unfortunately, this just makes the problem worse. In fact, I do not know of any trait, quality or performance problem in today's cattle industry that a crossbred bull could solve.

Now, new breeds can begin with a well-planned and thought-out crossbreeding plan with selected animals. Most of these new breeds are bred to solve specific environmental problems such as increasing resistance to tick-borne diseases, heat stress, fly problems etc.
With a new breed, strong selection pressures must be imposed on the bulls and females. However, new breed development takes a lot of knowledge, dedication, commitment and time especially. Much more time that most of us have in a working lifetime.

As a result, there is a great temptation to start selling bulls that have not yet become genetically "fixed" and are really just unpredictable crossbred bulls.

When new breeds are developed, we only see the very best of the cross and, fortunately, these are the animals that the developers of these breeds usually breed from. Naturally, this gives them a better chance of "fixing" the traits they are using to sell that breed on. What we don't see or hear about are the number of animals that are culled during the selection program to establish a new breed or the cost.
I recently saw an example of a 20 month old bull from a relatively new breed that had been bred from two very highly rated well grown parents that was 150kg. lighter than an 16 month old steer that he had been running with in the herd for the last 15 months. One of the

only reasons I could give the owners as to why he was so small was that somewhere in his genetic lineage there was a growth rate trait anomaly.

Now, even the traditional "purebred" breeds allow such crossbred anomalies as Black Herefords and Black Simmentals. These are excellent examples of the seedstock industry following the whims of fashion rather than maintaining strong, predictable genetics.

If there is as much difference within a breed as there is between a breed, what does the breed stand for? I have stated in a previous newsletter that there is a considerable difference in type from one end of the continuum to the other in terms of traits within some of our most popular breeds that if a bull from one end of the continuum was crossed with a cow from the other end, we would most likely get hybrid vigour. Now that may be okay for the first mating, but not necessarily so for further mating's.

My colleagues and I believe that the whole breeding industry needs to be re-programmed to stabilise breeds by the specific traits they were originally bred for that is consistent with the environment they originated in.

We have to go back to the beginning and take a look at programs such as linebreeding programs that developed all of our traditional "purebred" breeds.

The reasons for linebreeding are to genetically concentrate specific genetic traits, characteristics and production needs. This gene pool (herd) concentration is especially important in the herd sires.
The most important thing in beginning a linebreeding program is the sire you choose to begin the gene pool with.

Starting with a superior bull is a must for building the type of animal, production, utilization of grass and quality of food product you expect.
If possible, purchase an already established paternal linebred bull to begin your gene pool with. This will save a lot of time.
While all of this sounds like a lot of work - and it is - it is the only way to get the predictability we need for a premium-priced grassfed meat product. Most of us have good maternal cowherds. What we need is a BULL! When we get the right bull, we will start to notice how our calves are more consistent both individually and as part of the herd. They are also more predictable and the whole program becomes more repeatable.

Thank you for your continued interest in our newsletters, our website and our book. Please feel free to order one of our books and become familiar with the CLMS system and the directions we are taking in the overall scheme of animal and food production for human consumption.

PLEASE FEEL FREE TO CONTACT US ABOUT ANY ITEMS IN THIS NEWSLETTER, ON OUR WEBSITE OR IN OUR BOOK. WE WELCOME PRODUCER INPUT AND INTEREST AND WANT TO INVOLVE YOU IN WHAT WE ARE DOING.