

The aAa system – Where Have All The “6” Bulls Gone?

Choosing appropriate matings is a fascinating part of livestock breeding. Various mating guide options are available to provide assistance, including aAa. Based solely on the physical structure of an animal, aAa not only looks at the conformation faults, but searches out the root cause, and looks at what qualities the bull has to transmit to solve them. Finding the right bull to correct certain faults is easier than for others.

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Successful livestock breeders have for centuries used some basic, systematic approaches to improving their animals. This was often something as simple as whether you needed to use a “constructor” bull that would build more size, strength and frame into your herd, or whether you could get away with using a “refiner” bull that would supply the associated traits of a flatter, refined bone and higher production. It was all about striking the right balance: Adequate size and strength, with the refinement to capitalize on that size by adding improved production. Some breeders even added a third option to the balancing act – wide-bodied, more-rounded animals always seemed to be healthy, more rugged and trouble-free, and could thrive in harsher environmental conditions. It didn’t matter what the species of livestock, the one thing successful breeders had in common was their use of a systematic approach. And striking the right balance to suit their environmental conditions was a major factor. Often it involved taking one step back in order to take two steps forward; it required patience for a long-term breeding program and involved improving the total animal. The pitfalls of single trait selection were exposed in the early “index era”, when breeders who selected intensely for production alone quickly found that their hard-working cows were more refined and frail, had more health issues, and didn’t last as long.

THE SYSTEM

In 1950, Holstein breeder Bill Weeks, from Vermont in the US, developed a more formalized and sophisticated approach that he named “aAa”. Now it could be speculated that Bill likely knew something about music. It doesn’t matter what key a tune is written in, you are limited in the number of chords you can use. By assigning the numbers 1 through 6 to the different chords, musicians can communicate the chord progression of a melody simply by giving a short list of numbers such as 234453. Then it’s simply a case of playing it in whatever key suits you best. Whether or not this was his inspiration, Bill chose to assign the numbers 1 through 6 to different characteristics of an animal. And as with our simple system above of “constructor”, “refiner” or “wide-bodied”, each characteristic was linked with a number of associated traits. Just as the musicians found, using the numbers made the system easy to communicate. Bill analyzed the cows and put the numbers in the order of the characteristics that needed improvement, and analyzed the bulls in the order in which they could be expected to transmit them. Then it was a simple case for the owner of the cow to choose from the bulls that had the correct, or similar, numbers that the cow required.

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THESE ARE THE aAa CODES

1 DAIRY

**Ample will to milk.
Fast milk let down.
More milk for size.**

2 TALL

Faster growth. High udder for easy care and modern milking.

3 OPEN

Room for the udder. Added calving ease. Long breeding life.

4 STRONG

Larger mature size. Healthy udder, feet and legs and lungs.

5 SMOOTH

More appetite. Less injury to teats and legs. Easy milking.

6 STYLE

Less foot trimming. More durable bones. Attentive character.

THE MOST COMMON

Over the years, interest in the aAa analysis system has spread and it is now offered in 22 countries worldwide, with 220,000 cows and 3,900 bulls coded annually. More than 20 analyzers are involved, with some based not only in the US, but also in Canada, the Netherlands, Belgium, Denmark, Italy, Ireland and France. Marcel Verboom is one of those analyzers and is based in the Netherlands. ‘The numbers I write most often these days as I analyze cows would be 5 and 6, that’s what the breed needs most at the moment,’ he comments. ‘If anything, the other number I write, though certainly not as often as 5 and 6, is 1. A lot of bulls these days are more sharp than round, but most are more tall and open than dairy. Quite a few of the more heavily used bulls carry 2 and 4. Planet and his sons will put more 1 into the breed again.’ With the powerful influence of Shottle 243 and Goldwyn 234, the breed has moved in that direction. However, O-Man 435 has provided some 5, the “smooth” kind that maintains good body condition. ‘The population should be self regulating, explainable by aAa. When the population is getting too narrow, the wide bulls in AI will have a better chance for a good ranking. It’s not only the best bulls, but the bulls that complement the breed best at that time that get the highest ranking,’ explains Marcel. ‘Once there is a move in one direction, there will be a need for bulls to balance that in the next generation.’ Many of the breed “greats” are the product of balanced matings, including Ivanhoe, Astronaut, Chief and Bootmaker. ‘From a commercial point of view, I’m surprised that AI companies don’t actively search for more balanced aAa pedigrees,’ continues Marcel. ‘If you look at the major bulls, Shottle is an Mtoto 423 from an Aerostar 651, Goldwyn is a James 243 from a Storm 156, and even Sunny Boy is a Crusader 351 out of a Sheik 624. Although aAa was not used, each of those



A cow only needs to be analyzed once in her lifetime. Maiden heifers and calves are also analyzed, but will be reviewed after calving.

bulls was a product of a balanced pedigree that carried all the numbers in the first two generations.’

SMOOTH

So what does 5 provide? ‘5 Smooth gives you more width in an animal from nose to tail,’ Marcel explains. ‘When a cow is wide enough, she will stand even and square on her feet, and she will have even pressure on the inner and outer hoof. The inner and outer hoof will be the same size and she will be able to keep her feet healthy. Smooth also gives the animal more capacity to eat, preventing her from going into the deep negative energy balance, with all the metabolic problems that are associated with that. The extra width will give a wider udder, but also a longer fore-udder with more distance between front and rear teats. That width creates more volume preventing the udder from becoming too deep.’

STYLE

‘6 Style gives more bone in the rear-end from the thurls back. The whole rear leg is made of bigger, more durable bone,’ he continues. ‘A cow needs enough substance of bone, muscles, tendons and blood-vessels in the pastern to keep her feet healthy. When the thurl to pin bone is more developed, the rump will be longer and the thurls will be more in the centre between the hips and the pins. With lack of Style, the thurls will be back under the pins, pushing the pins up. That results in a lot of extra pressure on the loins, causing problems in walking, getting up, and calving. For some reason we don’t see a lot of bulls that add 5 and 6. If a farmer just picks a bull without looking at the aAa he has about an 80 or 90% chance that he’s picked a bull without 5 or 6 in the first 3 numbers.’

AVAILABILITY

It would be reasonable to speculate that changes in the formula for the total merit indexes over time should have some impact on how prevalent certain codes are among the top ranks. After all, the most powerful tool in shaping the

breed and determining which bulls get used is the total merit ranking. The drop in emphasis on production and the increase in emphasis on health traits over the past decade should at least be adding some 5 – especially the O-Man influence – to the higher ranking bulls. As a test case we can look at the TPI top-50 proven bulls. To use a 5 bull, you do have a number of choices; there are in fact three bulls in the top-20 that have 5 as their first number – Ladys-Manor Shamrock 534, B-Hiddenhills Plan 534, and Vatland Mauser 531 – with another one at Nr.30, Pine-Tree Oman ABC 531. There are also a further twelve bulls in the top-50 that have 5 as either the second or third number. Now when it comes to 6, it’s quite a different story. There are only 2 appearances of 6 in the top 50 bulls, both with 6 as their third number – MS Possibility Performer 246 at Nr.28 TPI, and Macomber Oman Bogart 216 at Nr.49! If you want to use a 6 bull, you have to go a lot further down the rankings to find them. Livestock breeding is very much about striking the right balance, and often involves making compromises, taking one step back in order to take two steps forward. Using a 6 bull will require compromise. ●