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2020 Newsletter Number 3

Dear Red Breed Enthusiasts,

Twenty/Twenty vision is a term which describes perfect vision in both our eyes, but I wonder if the year 2020 has improved our ability to see how we might breed better red cows? In 2020 we have much more data to help our decisions than previously, but are we using all of the information we have available? In the past breeding rankings contained milk production, temperament and milking speed; then over time we have gained conformation, disease resistance, fertility, longevity and lameness. Now feed efficiency and heat tolerance are making their tentative appearances on bull proofs. The final ranking scores were once based almost entirely on milk production, whereas today milk frequently comprises less than 50% of the composite. Fertility now claims a large portion of the composite, followed by other health traits and longevity, then minor components whose weighting can vary greatly between philosophies' of the organisations which generate the proofs.

Lactation persistence is one of those minor traits, in fact it is not usually included in the composite and is only available from countries with large red populations. Anecdotally, the expression of lactation persistence in individual cows has varied greatly in the past, but I suspect economics and selection in recent decades have narrowed the deviation range. However, even now bulls displayed on one website vary between 86 and 115, where the high number represents strong persistence.

Lactation persistence has nothing to do with production volume, it simply describes the production pattern through the lactation. A cow who only peaks at 10 litres per day and completes her lactation at 10 litres per day would have an excellent persistence ranking, but in most herds she would not pay for her forage consumption. Conversely if she peaked at 33 litres and finished at 33 litres she would complete the lactation with ease and finish with roughly 10,000 litres, given a suitable feeding regime. These examples are simplified as they do not account for changing milk components through the lactation, but the principle can be appreciated.

Mention of the feeding regime raises another aspect to this discussion. In pasture grazing systems, calving is timed to match the herd's peak forage demand to the farm's expected ability to provide adequate forage. But rarely can grazing farms maintain quantity and quality forage production for 300 days every year. Very often the last 100 days of lactation are depressed because forage production in this part of lactation is usually least predictable and forage decline will limit late lactation milk. The most important factor for these systems is for the cow to calve correctly every year and capture peak pasture growth. Supplementary feeding in periods of low forage production does overcome the forage quantity deficit, but the change of feed base requires the cow's rumen to transition to new circumstances which hastens her late lactation production decline. If the cow ration is consistent for 300 days this exaggerated decline does not occur.

In the weeks prior to calving, the cow begins to require greater attention. Firstly there is the pre-calving diet and monitoring for unusual prepartum signs. There is calving itself, which is still a high input time and twins make things worse. The first 50 days of lactation is a critical time for body condition score management and potential metabolic disorders, until she is at the point of requiring heat detection and insemination. By the time the cow is confirmed pregnant her management requirement is declining a great deal.

If Red cows could maintain all of their positive early lactation abilities and build higher production totals by increasing late lactation milk, they would become much more profitable. Late lactation milk is not free, as a cow always requires appropriate forage to sustain her daily output, but the effort required from the cow and the manager to produce late lactation milk is very much lower. With cows of extreme early lactation production it might be advantageous to transfer some peak milk to late lactation and average her work load over a greater number of days. This could maintain or even improve end of lactation totals, while enabling the cow to do her work more comfortably and last longer in the herd.

We all desire easy management cows which produce profitable quantities of milk from appropriate forage rations and who repeat this performance year after year. Cow nutritionists aim to peak cow production 6 to 12 weeks after calving, followed by a predicted decline of 7% per month. Different farming systems have varying degrees of success achieving this goal, but improving genetic lactation persistence will help. Increased late lactation production must not remove the ability to achieve ideal body condition scores at dry off, or the gains made in one lactation will be lost in the next. Our skills as cow breeders and managers must be constantly improving to meet these challenges.

To provide an idea of the value of late lactation milk, consider a cow producing 8,000 litres per year at 50 cents per litre and falling pregnant at 80 days. During the last two hundred days she would usually average about 23 litres per day. If her rate of decline was reduced and she produced an extra 2.0 litres per day for the last 200 days, she would increase her lactation total by 400 litres or \$200 at 50 cents per litre. A worthy gain which would not increase her workload during those all-important first twelve weeks of lactation and no extra work for the farmer.

For Red cows to thrive they must generate more profit with less effort than our competitor breeds. Our Reds may have lower maintenance costs, but they must deliver a complete performance package to be the breed of first choice. To attain and hold that position, Reds must have a greater rate of improvement than competing breeds. We could just rely on geneticists and genetic supply companies to achieve the necessary gains, but the problem with that strategy is that their work is rarely bred specific. Thus new technology is usually adopted by the most popular breeds first, which does not help Reds outpace the competition. A current example of what can be achieved is the phenomenal fertility improvement now enjoyed by the Holstein Breed, which was achieved through the implementation of flushing technologies and focussing on their former weakness.

The challenge of improving performance and demand for Red dairy cows rests with us. Targeted marketing is very necessary, but the performance of the genetics we sell must back up the marketing claims, or the first sale will be the last sale.

Composite scores are generated using published information and we should be studying all of the minor traits to build new strengths in our cows. These traits do not replace composite scores like NTM or BW or BPI, but they are an excellent way to refine first cut selections into final breeding choices. We must continue to know all the attributes of our cows and ensure that **every mating is the best mating** for every cow, even if she should be mated to beef. Mating programmes and breeding advisors provide useful advice, but they can only be as good as the information we provide. It is profitable for breeders to assess every cow and to memorise her three best and three worst traits, then use all the available information to decide the best mating choice. This habit becomes more difficult in large herds, but it is a very necessary practice to cultivate.

The cow photographed below is from the herd of Mark Nicholls, Hilltown Ayrshires South Molton, Devon, United Kingdom. (Mobile: +447801822797). Mark has kindly provided an insight into his family's breeding philosophy, which is sure to create some discussion. When I was introduced to the herd I was told that the Nicholls' are never afraid to experiment or break convention to create a new opportunity. This is Hilltown Snowball 570 EX94 (6E), the daughter of a Herd Sire at Hilltown and the Dam of Hilltown Trailblazer. Mark tells me she exhibits good type and a willingness to milk and has great longevity through her pedigree.



We at Hilltown Ayrshires milk in the region of 220 full pedigree Ayrshires calving on an all year-round basis. The herd averages 7200kgs at 4.3%bf and 3.55%ptn, cell count 110. Achieved in a high rainfall (1300mm+ a year average) area on the edge of the Exmoor National Park.

To fully utilise the natural attributes of the Ayrshire cow and the grass growing ability of the area we need to breed a cow that is capable of walking reasonable distances to grazing, converting large amounts of forage into milk and can then walk back into the parlour with a full udder of milk.

*We breed each animal individually looking at strengthening their weaknesses and maintaining their strengths. This is done by using linear and production figures from both the Dam and the Sire and trying to best suit the two together. As with all pedigree breeders we are trying to breed the perfect cow for our conditions. While we watch the genomic revolution with great interest, we find that it is selecting the wrong type of cow for our needs and therefore we do our own thing. We have over 90 different full Pedigree Ayrshire bulls in our flasks ranging from modern day high PLI bulls back to top proven bulls from the 1950's and 1960's. This allows us to go **Back to the Future** and put these old bloodlines with out of date production figures but who were genetic giants of their day onto modern established cow families in our herd with a track record for breeding EX and high yielding animals. For example, our Snowball family has over 1000 descendants from the first Ayrshire heifer we bought called Snowball in 1955. We have found that this has worked extremely well with the old type genetics giving a hybrid vigour style reaction and these animals out producing and out lasting the modern genetics. By using this approach, we have been able to breed a more robust medium size cow that fits our system and is adaptable to other systems when sold into other people's herds. The herd is one of the highest classified herds on type in the UK. We have been breeding everything to Ayrshire but this year we have started to use Sexed Beef semen on the lower end of the herd a mixture of Aberdeen Angus, Limousin and Belgian Blue to meet our Arla Milk Contract regulations and allow us to move them off farm quicker. We run one of our young bulls bred as described above and unrelated to any of the bulling heifers he is with. This year Hilltown Freddie and Poldark have been used and are breeding some outstanding cattle which are being admired by other breeders. Hilltown Winner and Avenger will be put to work this winter. These amalgamate some of the best genetics from both sides of the North Atlantic. Every farm has their own goals for what type of cow that they require, we think that the greater the genetic pool there is the more viable the breed will be. Over use of genomics and indices and taking away a breeder's own ability to breed quality animals will only be of detriment to the Dairy industry of the future. These are own views probably not shared by the A.I companies but hopefully they may help someone to try something different and not necessarily follow fashion. Our Door is always open to Visitors.*

Happy breeding and if you have feedback or comments about the ideas in this newsletter please email me your thoughts, it is probable they will provide inspiration for future discussions.

Graeme Hamilton