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“Working to improve durability of milk cows” - researcher Willem van Laarhoven:

“Durability breeding is a false cry”

“Bulls that breed durability don’t exit”

Commissioned by the Productschap Zuivel (Dutch governmental agency monitoring efficiency of dairy production systems) independent researcher Willem van Laarhoven, together with Arjan van der Kolk from Feed Innovation Services, studied the durability of the Dutch national dairy herd with a focus on how it can be improved. An important out come was that there are many possibilities, but breeding gets to much attention, and there is insufficient accounting for differences in management and circumstances. With this realization, van Laarhoven advocates more attention be given to the possibilities of the aAa system.

Behavioral Change

Willem van Laarhoven has a broad view of many things. After the HAS (higher agriculture studies) Willem studied biology at the state University at Utrecht. “However, when I am speaking with stockbreeders I tell them that besides my degrees I also have a diploma in hand milking,” laughs van Laarhoven.

In his degree study of Biology van Laarhoven chose the direction of Ecology where he concentrated on the plant world specifically in relation to the agricultural sector. After completing his studies the young academic worked for a short time as a free lancer, before he came in 1983 in the service of the Center for Agriculture and Environment (CLM). Van Laarhoven says, “My first responsibility were integrated crop protection and corn silage production, until the environmental problems occurred caused by the excessive use of manure from the pork production. I specialized in pork production, although my heart has always been in the dairy cattle industry.” In 1990 van Laarhoven left his position with the CLM to go to Cahave (at that time the largest mixed feed company of Western Europe) where he worked on projects related to live-stock production and environment. He was the first person to come from the environment movement into the business world. He became manager of the department of environment and housing and among his numerous responsibilities he was also responsible for the development of the environmental-friendly "Green Label" barns. He also occupied himself with Minas (the mineral declaration system) and is considered to be one of the promoters of the “mineral management system” that was developed in his CLM-time to help farmers the reduce the losses of nutrients to the environment. However, five years ago van Laarhoven decided together with Tom van Oosterhout to start the independent research and advise company, Sirmed. Nowadays he operates mainly from his own research and advise company, Valacon. He also teaches students at the Carthesius Institute – a cooperation of the technical universities – in Leeuwarden,

where he addresses an international class of students on the factors affecting the willingness to change, for example when it concerns dairy farmers desiring to improve the durability of dairy cattle. Behavioral change is the most important factor for improvement and innovations.

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Raising Young Stock

Last year the report “Working on the Improvement of Durability of Milk Cows” was released, which was an investigative research commissioned by the Productschap Zuivel and to be carried out by Willem van Laarhoven of Sirmed and Arjan van Kolk of Feed Innovation Services. The reason for the research was the relative short productive life of the Dutch dairy cow, which amounts to only slightly more than three lactations. In the beginning the research workers were only looking for solutions in the raising of young stock, but soon they discovered the problems were more extensive and much bigger. Van Laarhoven said, “In the first place we looked at the influence on durability and the cost of raising the young stock, which varies from 2.5 to 6 euro cents per kilogram milk. This indicates much profit can be obtained in this area. However, gradually during the research we discovered that there also are other important reasons why cows leave herds. They too have a great influence on durability and can not be seen apart from the young stock raising. So we decided to broaden the basis of the study.” In spite of his versatile all round experience it became apparent during this interview van Laarhoven’s specific knowledge of dairy cattle breeding was quite extensive. “I worked ten years at Cehave and in that period gained vast practical knowledge and exposure in the dairy cattle industry. In 2004 I investigated the possibilities to extend the organic dairy farming for which I visited the US and Canada. There is always the discussion about the influence of breeding programs on durability. So I do know what I am talking about.” concludes the researcher. “In my work I always maintain a perspective combining agriculture in harmony with the environment. That’s because I have a soft spot for farmers so in all the reports I make I always give consideration for their reflections. They are the ones that have to do the work and have to change their behavior”

Triangle

“We can define durability as the measure of the efforts of a farmer, to raise the productive life span in an economically sound manner,” states van Laarhoven. “The productive life span at present amounts to 3.3 lactations and that is not much. Increasing the life span is economically advantageous because, you need less young stock to replace the cows and you can produce the same amount of milk with less cows. Also the milk production of older cows is higher, so the production per cow automatically goes up. In the case of milk quota you need less cows and again less young stock. And of course the potential damage to the image of the dairy industry goes down, when the life span increases”. The research worker astonished himself concerning the fact that the life span

has not increased, in spite of the fact that at the breeding organizations for some time have emphasized durability in their breeding programs. “The last 10 to 20 years has seen the life span vigorously decrease. Since we introduced the Holsteins in the early 80’s we have lost two lactations,” van Laarhoven dares to say. An explanation for the flaw in life span hides in the fact that there is too little effort to fine tune the combined affects of breeding, management, and circumstances. “There is too much attention given to breeding alone. You must always start from the triangle of animal, management, and – circumstances. An animal has certain needs and properties and when it cannot function optimally, then for example production goes down. And when a farmer continues focusing on high production bulls, the difference between what the cow wants and what she gets becomes greater, resulting in a more vulnerable, less durable cow as a consequence.

Tackling Causes

Van Laarhoven states that durability can indeed be improved through breeding, but durability figures in themselves say nothing. The breeding goal can never be durability, because durability is dependent on too many factors. A far better objective would be to reduce the factors which limit durability. A cow on a specific farm must be able to produce under specific circumstances and management regimes. The type and character of a cow determines the possibilities to survive under that circumstances “Bulls that breed durability don’t exit”, it is obvious to van Laarhoven. In the report this theory is illustrated with an example. “The bull Delta Compact has a durability figure of 105, while he scores below average for udder health, fertility, calving ease, udder and feet & legs. And when those are the problems of a specific farm then this bull can not improve durability in that herd. It will even likely achieve the opposite effect.” A more known example that the researcher quotes, is that of the popular bull Lucky Mike. He has a durability figure of 107, while he scores below average for udder health, fertility and calving ease. Van Laarhoven says, “The current use of indexes does not reflect the reality of what is really occurring. It is even sometimes misleading, the consequence being that only the symptom is worked on without tackling the cause of the problems.” Thus the researcher proves to be intrigued with the aAa system, the breeding method which traces certain causes of problems. “During the herd visits that I did, I found that the aAa users were mostly what I would describe as breeders. Obviously aAa has a particular surplus value, a certain appreciation. I also found that these farmers look differently at cows and bulls and spend more time in their herd than others do. It expresses once more that the farmer with his behavior is the most important factor for improving durability. When he is willing to change his management and strategy he will succeed”

CR Delta vs. aAa

“We should do something with aAa in the cattle industry, although it is a challenge to precisely quantify the effects of using aAa. “But the aAa Analyzers find this is not a concern. The satisfied users is sufficient proof that the breeding method is getting results.” Van Laarhoven says on the basis of his report, he advised CR Delta during discussions at their Arnhem offices to begin working with aAa. CR Delta however does not want this. “They say that aAa does not work and base that opinion on investigations

conducted by themselves. However, they cannot prove that it does not work, nor that it does work. You must define research groups and there are no typical aAa groups and no non-typical aAa groups, according to the researcher. “The modern breeding philosophy has created an enormous genetic potential in the livestock population, unfortunately the expression of that potential falls far short. CR Delta should apply the aAa system to optimally utilize the genetic potential, instead of seeing only the commercial threats. More over I think that the aAa system can be incorporated very well in the bull recommendation program SAP”, according to van Laarhoven. “I believe it is not correct to call aAa only a mating system, because that does not recognize the full extent of its capability”, says the researcher, “it is my feeling that it is more than breeding alone, as it addresses the combination of breeding and management. Converting the results of the application of the aAa-system in breeding values is the wrong way because the aAa system focuses on different aspect that are not expressed by breeding values but do contribute to durability”

Working Together

The breeding can be seen, according to van Laarhoven, as never separate from management and the circumstances. “The importance attached to breeding in my opinion is sometimes much too large. For example when you have problems in your herd with udder health you can choose a bull positive for mastitis resistance, but you are probably better off to focus on your management,” states van Laarhoven. “Also make an analysis of your farm circumstances. What is the current turnover rate? Try first to uncover the underlying causes of problems.” As a result of his report he is asked many time to speak at meetings for groups of farmers. “Recently I was in west Brabant and was ask the question if the durability could be doubled in ten years time. I said that it is not possible for me, but they have to do it themselves. If they are willing to face their own shortcomings and change their management and breeding goals and strategy, I can collaborate with them in their study club to find out how. There is knowledge enough available, only it is not applied sufficiently. Meanwhile van Laarhoven continues working with study clubs in Oost Brabant and Friesland where the same question was asked. “People don’t realize that there is knowledge available everywhere. Maintain good contacts with specialists around you, the nutritionist, veterinarian and the breeding organizations. Work closely with them to create strong support relationships.”

Fine Tuning

There are a lot of areas where profit can be gained, states van Laarhoven with some striking examples. “The percentage of pregnant cows after one insemination is only 70 percent, a sow breeder on the other hand is very dissatisfied if the percentage is under 95 percent. Also a good example is the average age which heifers calve the first time. By good young stock raising, with especially good feeding it is possible to calve heifers at 22 months of age. However, the real average amounts to more than 26 months. That means that on some farms the heifers calve at 2.5 years of age.” The most important attention point to raising the productive life span, suggests van Laarhoven is however the transition period and the stable. “The feeding in the transition period has a large effect on the fertility and the performances in the next lactation. With farmers who are not ready to

invest in new circumstances also make less improvement. Regarding adequate flight alleys, feed alleys and comfortable stalls many times these are insufficient or of improper design. Van Laarhoven denounces symptom suppression methods such as supplying propylene glycol. “If you have a need for propylene glycol, then you have shot through to far in production under your specific circumstances. Look once at your stable. Do you have to few places to eat, then supply no propylene glycol, but change the circumstances. Van Laarhoven sees that here to focus on still higher production is possibly foolish. “With high production you frequently do not see the longest life span. Not that production must be lower but raising the life span can be very attractive on these farms. The economic results of farmers that realize high production are relatively good but far below what could be achieved. After all, with each added lactation the raising and maintenance costs are decreased.” “Generally we all know how it works. It now becomes all about fine tuning to get more profit. And not being afraid to change. Inseminating a persistent production cow later resulting in a longer calving interval is not a problem. After all it is possible for farmers to decrease costs with over ten thousands euro a year by improving durability with only 25%. The approach as described opens up new perspectives!