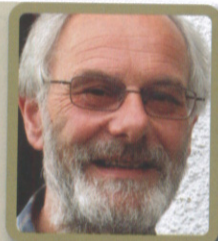
Large herds: managing the challenges

THE 7th Large Herd Seminar, held in Gloucestershire at the end of June, had the sub-title of *Finding solutions* and the ambition to "arm you with a financial framework that will facilitate better decision making while presenting the very latest science to update the whole farm team".

Richard Vecqueray of Evidence Based Veterinary Consultancy Ltd, welcomed the 233 delegates, including many veterinary surgeons. The content was challenging, the speakers on top form and at the leading edge of their discipline.

RICHARD GARD reports from the 7th Large Herd Seminar which concentrated on finding solutions to the many challenges facing the dairy industry internationally



Professor Randy Shaver from the University of Wisconsin opened and closed the two-day seminar with the latest information on starch and the next steps in dairy cattle feeding.

If shredlage is an unfamiliar term, then you may wish to get up to speed with longer length corn silage. Harvesters have been developed to provide a lengthier chop, with improved starch digestion and more milk production.

The longer the silage remains in the silo, the more the ammonia concentration goes up and the greater the digestibility. However, predicting digestibility is an important development as too high a digestibility may have health issues and trials are continuing to clarify answers to the many questions.

One of the challenges to milk production in the US is how to feed more forage with the rise in the price of grain. Reduced starch diets can mean that the cows eat more but yield less and enzyme additives increase ruminal fermentation at a price.

Ruminal digestibility and total digestibility differ with barley, corn and wheat and the length of the growing season influences breakdown in the gut. The structure of the grains alters while in storage and the kernels increasingly crumble in the hand. Further information on current developments is available at www.uwex.edu/ces/dairynutrition/.

Richard Vecqueray.

Rapid growth of heifers during the first two months of life leads to more milk production in the first lactation. Feeding and management of today's dairy replacements will influence the performance and economic returns of dairy herds in two years time and beyond.

Emphasising the value of on-farm data, Dr Alex Bach, of the Department of Ruminant Production at IRTA in Barcelona, enthused about the importance of heifer rearing.

He indicated that there is no point in gathering and accumulating unreliable data. Use of a tape to estimate body-weight is unacceptable; electronic scales to monitor growth are recommended. Daily feed intake should be recorded as well as health incidences, veterinary treatments and vaccinations.

Prof. Randy Shaver.

Records of the milk and reproductive performance of the heifers as dairy cows will provide confidence in the heifer-rearing programme and enable growth rate targets to be set at different ages to achieve long-term performance.

Body-weight at calving has more effect than age, provided the age at calving is over 22 months. For every 70kg of body-weight at calving, an increase of 1,000kg of milk yield during the first lactation can be expected. Providing better feed to

heifers, with more cost, leads to better growth and an earlier month of calving with a higher financial gain.

Respiratory problems can have profound consequences on calf performance and potential lifetime productivity. Trials have demonstrated that if younger calves are mixed in with calves that are poor doers, the older calves improve feed consumption and weight gain. Sick animals are not included at any stage when pens are mixed.


Dr Alex Bach.

A second presentation by Alex emphasised effective nutrition for rearing heifers. The target is a body-weight of above 650kg before calving and to achieve first calving before 23-24 months of age.

The importance of high quality colostrum (more than 50g IgG per litre) fed within the first 3-4 hours after birth (3 litres) and again 12 hours later was emphasised to provide 105g of IgG, due to relatively poor absorption. Bacterial counts in the colostrum should be below 50,000 bacteria per ml. After receiving colostrum, the calf is moved to an individual hutch with effective hygiene to minimise diarrhoea.

Calves need to consume 4 to 6 litres of water in addition to milk replacer for every kilogram of starter feed. Calves placed in groups of eight before weaning have better growth rates and fewer respiratory episodes. Milk is then fed in troughs, not through nipples. Air quality and dry bedding are important.

Frequent checks

An average growth rate of 900g per day is targeted from 63 to 400 days of life. Frequent checks on body-weight gain are required and nutrient density should be adjusted for actual feed uptake. The message for large herds is, "don't be afraid to grow faster". During pregnancy, heifers receive a similar ration to dry cows, high forage, low energy.

Veterinary surgeons who discuss the cull rate of a herd as an aid to management would become embroiled in a strong argument with Dr Steve Eicker from New York, a veterinary surgeon, software designer and strong advocate of clear thinking.

It is his view that even talking about culling rates is a huge mistake and that recording culling reasons should be actively discouraged. Every cow in the herd gets replaced; replacing a cow prematurely is expensive and waiting too long is expensive. There is no ideal cull rate, the decision to cull must be made for each cow. If reproduction within the herd increases, the cull rate goes up and longevity decreases. If more sexed semen is used, the cull rate goes up.


Dr Steve Eicker.

Cows are culled for welfare reasons and to prevent antibiotics entering the food chain. Knowing the cull rate does not help to manage a herd. Cull rate is not a function of disease and cull rate is a very poor monitor of disease.

The higher the milk production from a herd, the better the herd management. The farmer assesses whether replacing a cow would be more profitable and if she is sick whether to treat or replace. In order to have fewer broken cows, disease monitoring and treatment protocols are implemented.

To make money from a dairy farm, marginal thinking is important. The average feed cost per cow is not helpful in making decisions; what is needed is the cost of the feed it takes for an existing cow to make more milk.

Maintenance feed costs remain the same but average feed cost includes maintenance, whereas the actual cost of the extra marginal feed to produce extra milk should be the decision-making figure. Using averages alone can prevent dairies from making changes.

Marginal terms

Veterinary surgeons are comfortable in thinking in marginal terms, since each therapeutic decision in an individual cow is a marginal decision in economic terms, but the next marginal decision should not be based on an overall historic average performance.

Tom Clarke of Synergy Farm Health highlighted the value of detecting and treating cases of mastitis around calving and in early lactation. The impact on fertility of an extra 11 days to first service with early lactation mastitis is just one of the hidden costs.

Recognising the high-risk cows includes those with a history of mastitis but also animals that had problems during the dry period or during transition, cows with a negative energy balance or concurrent disease (dystocia, metritis, milk fever). Individual awareness and attention by everyone on the milking team is combined with cell counts. Fresh calving cows to be strip milked every day and the California Milk Test carried out after calving. Milk samples are taken routinely from clinical cases and frozen for later identification as necessary.

Treatments are used specifically with the aim of reducing the overall use of antibiotics and specific procedures taught to administer products cleanly. Recording cases in order to monitor rates of mastitis are valuable visual ways of maintaining enthusiasm, not to take short cuts, together with reviews of treatment success or failure.

Difficulties overcome

An example of a herd that has overcome difficulties was presented by James Yeatman of Grange Farm. Previously there was an increase in mastitis cases in the 300-cow herd on Mondays and Tuesday, after the weekend. Attention to milking details and consistent management have led to a low cell count, good clinical mastitis rate and a 65-70% cure rate following therapy.

However, mastitis in maiden heifers linked to calving difficulties, teat end damage, heat stress due to inadequate ventilation and the prevention of overstocking in the cubicles are ongoing items for particular attention. Overall, the use of early lactation therapy forms an important part of the mastitis control plan combined with attention to detail and good stockmanship.

An illuminating session involved a four farmer discussion panel interrogated by Jonathan Davies of NMR. It was interesting to hear that farmers with large herds should be leading quality and welfare standards, rather than the milk buyers. Cow comfort and mobility are important from the day of birth and movement of animals does not involve chasing cows around.

Supermarkets are seeking out larger herds with higher standards. Milk volume sold is the overall criteria for management. Conception rate is not too significant with pregnancies per month as the fertility criteria.

Many of the issues discussed during the seminar came down to attitudes and stockmanship. Professor Paul Rapnicki, of the University of Minnesota College of Veterinary Medicine, described the interactions between people and cows.

Learning from individuals with stockmanship skills, the university has become committed to successfully implementing dairy stockmanship on commercial dairy operations.


Prof. Paul Rapnicki.


Tom Clarke (left) and James Yeatman.

Early learning came from Bud Williams (www.stockmanmship.com) and a video of moving herds of reindeer by force and then by mild application of awareness brought home the skills that are applied.

Recognition was given of the work of Dr Temple Grandin with beef and the concept of flight zones and human encroachment on the personal space of the animal. Film of cows in collecting yards and cubicles showed how a stockman, with his hands in his pockets and adopting a penguin-like movement, can encourage cattle to move in a particular direction.

The response by a particular animal to human pressure will be influenced by previous interactions. It is unacceptable to hit animals with a stick and as cattle have sensitive hearing, shouting is considered bad practice.

From an early age, calves are introduced to human interaction and cows in a race will move against the direction of the stockman. Standing behind, shouting and waving a stick may be a common activity but it is nowhere near as effective as a gently, gently encroachment approach for groups, herds and individual animals.

Observing responses

Each time cattle are worked properly, they learn and become easier to work the next time. Good stockpeople have learned to very closely observe the behaviour responses of the cows.

Work is ongoing to measure stress responses in order to define low stress handling.

The ability to measure cortisol metabolites in the faeces is an important additional tool that complements behaviour analysis studies of dairy cattle.

On-farm training programmes are being developed to put stockmanship skills into practice. The normal behaviour of dairy cows is to interact with people and one measure is the number of poops per minute in the milking parlour. The lower the frequency of defaecation, the lower the stress levels of the cows.

■ The 2013 seminar will be on 25th and 26th June in South Gloucestershire. To be put on the e-mail list, contact enquiries @largeherds.com.