

DAIRY HERD HEALTH PROGRAMMES IN SWEDEN - INDICATORS OF SUBCLINICAL
DISEASES AND PREDISPOSING FACTORS

ANDERSSON, L & FUNKE, H*

The Swedish milk recording and AI and breeding associations were amalgamated around 1960 to the Swedish Association for Livestock Breeding and Production. From 1970 a Mastitis Control Programme has been included in the activities. This programme has successively been developed into a Dairy Herd Health Programme in order to control both clinical and subclinical diseases, mainly those of managerial origin. The development of disease indicators in milk, a so called milk profile test, has proceeded for several years, as milk samples taken for analysis of fat and protein can be used. In 1984 a national animal disease recording system was introduced including all clinical diseases diagnosed by all veterinary practitioners.

The farmers receive monthly reports concerning production, fertility, cell counts and clinical diseases. Summarizing reports are produced on an annual basis. In the future it will be possible to include other systematic analyses of milk, such as progesterone, acetone, urea and virus antibodies. Those disease indicators are today used on special occasions.

MILK PROFILE TEST

Bulk milk cell count has been used as a herd measurement of the udder health since the early seventies. It has thus been possible to select problem herds for the mastitis control programme. However, when the udder health successively has improved, it has become necessary to develop a more accurate mastitis indicator on individual level. Therefore, in the late seventies individual cell count was included in the milk recording system. Today milk from about three fourths of Swedish cows are analysed for cell counts monthly. It is shown that the probability of infectious mastitis increases with increasing cell count. Infection is the main source of variation of cell count. However, it also varies with milk yield, parity, lactation stage and breed (Brolund, 1985). Consequently the cell count is adjusted for these factors when reported back to the farmers. This procedure makes the cell count into an accurate indicator of the individual udder health.

Clinical investigation of uterus and ovaries at reproductive disorders is traditionally one part of the Swedish sexual health control. It is, however, often too rough a method for exact diagnostic purposes. Milk progesterone is found to be an efficient diagnostic tool for systematic use (Larsson et al, 1984), especially in three situations, namely for i) testing cows for reproductive regularity after calving, ii) following up treatment of ovarian cysts and

*Swedish Association for Livestock Breeding and Production, S-631 84 Eskilstuna, Sweden

iii) early negative pregnancy test. Milk progesterone is a suitable indicator, since the main part of fertility problems in Sweden is caused by environmental factors, suboptimal feeding and poor heat detection.

There are several subclinical metabolic states caused by suboptimal feeding. Early indication is often advantageous since it can help the farmers to change the feeding before diseases break out. Milk acetone is a suitable metabolite for monitoring energy under-nourishment during the first weeks of lactation (Andersson, 1988). Controlling the energy feeding in early lactation is crucial not only for health reasons but also for maintaining optimal milk production later in the lactation. Routine analyses can indicate individual hyperketonaemic cows as well as herds suitable for feeding advisory activities. They can also be a base for breeding evaluation of sires for ketosis.

Milk urea is reported to monitor the ratio between dietary energy and protein (Oltner et al, 1983). There are however other sources of variation, which can make the interpretation of single values difficult. These can be exemplified by type of feedstuffs, stage of lactation, body weight and parity. It is also shown that fertility is negatively correlated to milk urea.

Some virus infections have a subclinical course with diffuse effects on the animals. An example is bovine virus diarrhoea (BVD). Rather few animals fall acutely ill, but effects on fertility are reported (Alenius et al, 1988). A prerequisite for a control programme is an easily performed indicator of infection. Milk antibodies against BVD can for this purpose be determined in routinely taken milk samples.

HERD ACTIVITIES AND PREDISPOSING FACTORS

The milk profile test or parts of it is useful in combination with production and fertility data from the milk recording scheme. They are the base for the health and production advisory programme in dairy herds. However, it is also necessary to take into account the information that only can be available in the herds themselves. Therefore, there is a field organization responsible for the preventive animal health service, which is included in the regional associations responsible for among other things milk recording and artificial insemination. The staff includes for example veterinarians, feeding specialists and technicians with different specialities.

One task for the animal health staff is to help the farmers to interpret the milk recording data from a health point of view. However, the most important tasks involve examination of the herd as regards environment, feeding management and so on. Based on all data, useful advice can be given. Concerning causes of mastitis, factors such as poor stable climate, housing conditions, stall hygiene, milking technique, milking machines, feed and water hygiene and grazing conditions are important. They have to be evaluated in combination with for example information on bacteriological status of the udder quarters (Funke, 1988).

The energy feeding in early lactation is crucial for the metabolic balance and good reproductive performance. Herd examinations directed to feeding should include factors such as energy content of the roughage and total feeds, the change from dry period to lactation feeding and feeding regimes including for example number of concentrate meals and food consuming time (Andersson, 1988).

Reproductive problems are often caused by suboptimal feeding, poor environmental conditions and poor heat detection. Many farmers need assistance for working out a functional heat detection routine. The role of consequencey and thourough recording is important to point out.

In conclusion, the dairy herd health programme is based on routine recording and herd examination. These two parts most often lead to efficient advice. The service is continuously developed with for example several disease indicators constituting a milk profile test.

REFERENCES

Alenius, S., et al: Personal communication.

Andersson, L.: Subclinical ketosis in dairy cows. *Vet. Clin. of N America: Farm Anim. Pract.* 1988, 4, 233 - 251.

Brolund, L.: Cell counts in bovine milk. Causes of variation and applicability for diagnosis of subclinical mastitis. *Acta Vet. scand.* 1985, suppl. 80.

Funke, H: Mastitis prevention in Sweden. *Proc. VI Congress Int, Soc. Anim. Hyg., Skara*, 1988, p. 209.

Larsson, K.; Ahlin, K.-Å.; Garcia, M. & Edqvist, L.-E.: Relationship between clinical ovarian findings and progesterone levels in postpartum dairy cows. *10th Int. Congress on Animal Reproduction and Artificial Insemination, 1984. Proceedings*, p 400.

Oltner, R. & Wiktorsson, H.: Urea concentrations in milk and blood as influenced by feeding varying amounts of protein and energy to dairy cows. *Livest. Prod. Sci.*, 10, 1983, 457 - 467.