

THE CHANGING PATTERN OF HEALTH PROBLEMS SINCE THE INTRODUCTION OF MILK QUOTAS

J. M. Kelly, D. A. Whitaker and E. J. Smith, Department of Veterinary Clinical Studies, Royal (Dick) School of Veterinary Studies, University of Edinburgh, Veterinary Field Station, Easter Bush, Roslin, Midlothian, EH25 9RG, Scotland.

INTRODUCTION

During the past 30 years the UK dairy industry has undergone many changes. Among the more dramatic has been the marked increase in milk production from individual cows, whereas the number of dairy herds in the country has decreased significantly and the size of the herds has increased accordingly. As a result before the introduction of milk quotas in 1984 there were nearly the same number of cows producing more milk on a smaller number of more intensively farmed units.

Milk quotas have resulted on marked changes in the husbandry practices in many farms. Herd numbers are continuing to drop but cow numbers are also falling. The Dairy Herd Health and Productivity Service (DHHPS) (5) which over the past 15 years has involved some 300 veterinary practices and over 1000 dairy farms throughout the UK has provided regular information on disease occurrence and on the adequacy of nutrition and management in relation to health and productivity.

MATERIALS AND METHODS

The DHHPS depends on close cooperation between farmer, his veterinary practitioner, nutritional adviser and laboratory based veterinary consultant.(5) As part of this programme a data sheet relating to health, fertility and general herd assessment is completed each month. A copy is left on the farm and further copies are sent to the nutritional adviser and to the DHHPS unit in Edinburgh where data is entered into a mini computer with a floppy disc storage system. The monthly information is used to generate a quarterly and annual report which summarises and compares culling rates, disease incidence and fertility efficiency.

Blood samples are taken from representative cows at pre-planned stages throughout the year. Samples are analysed for B-hydroxybutyrate, plasma glucose, albumen, urea, globulin, magnesium and inorganic phosphate using standard methods.(6) Biochemical results are printed on a report form alongside theoretical nutritional inputs and requirements and the cow data considered essential for meaningful interpretation.

RESULTS AND DISCUSSION

Cull Rates

	1983	1984	1985	1986	1987	1989	1990
Age	2.0	2.1	2.4	2.1	2.8	2.3	2.6
Yield	2.6	4.5	3.7	3.1	3.9	2.7	2.9
Infertility	6.3	8.2	6.8	6.6	7.1	6.4	6.2
Mastitis	3.1	4.4	2.6	2.4	3.1	2.7	2.6
Lameness	1.6	2.3	1.4	1.2	1.8	1.1	1.1
Other	4.0	5.6	5.3	5.3	7.8	7.1	6.3
Total	19.6	27.1	22.2	20.6	26.5	22.3	21.7

The number of cows culled from the herds which are DHHPs members was around 20 per cent until the introduction of quotas in 1984 when it rose to around 27 per cent. The cull numbers fell back to pre quota level until 1987 when the introduction of "super levy" again stimulated a rise in cull rate. There are a variety of reasons for which dairy cows are culled, not least of which may be the cull cow price! Some cows will be disposed of for more than one reason but our findings are broadly similar to other surveys from Europe and the US. Low milk production, age, poor reproductive performance, udder problems and lameness are the major reasons for disposal in all reports. There is some indication that the marked increase in milk yield as a result of improved genetic selection has resulted in a parallel increase in health problems. (4)

The present situation with regard to milk production in the developed countries suggests that some measures, such as a further cut in quota, will be necessary in the coming years. This may result in further reductions in cow numbers, especially if the beef price does not improve.

Treatment rate/100 cows/year

	1983	1984	1985	1986	1987	1989	1990
Infertility	28.4	25.8	26.6	28.6	28.2	28.5	32.0
Mastitis	37.5	30.4	29.5	30.2	30.9	29.1	27.3
Lameness	28.3	22.2	29.6	26.7	25.2	25.9	27.0
Digestive Disorders	1.3	1.3	1.1	1.1	0.9	1.2	1.1
Ketosis	1.2	1.2	1.3	1.3	1.6	1.1	1.2
Hypomagnesaemia	0.7	0.9	1.1	0.9	0.8	0.8	0.5
Hypocalcaemia	5.4	5.2	8.1	7.6	9.1	7.3	5.6
Others	10.7	6.9	6.5	6.2	7.2	4.6	4.3
Total	113.6	93.9	103.8	102.6	103.9	98.4	99.0

Treatment rates re-emphasise that the main problem areas are infertility, mastitis and lameness, but in addition identify metabolic disorders to be important causes of disease on many farms. These diseases can be difficult to control because they are usually

all multifactorial in origin. In many cases the disease syndromes are inter-related and can all be classified as production diseases occurring most commonly in early lactation. These conditions all cause serious financial loss and yet, with few exceptions, when a case is considered in isolation they are not particularly spectacular and may frequently not be considered worthy of veterinary attention or advice. Unless regular monitoring is taking place the majority of farmers will be unaware of the disease level within a herd and will express disbelief when confronted with such figures

Infertility

On average seven per cent of cows are culled because of reproductive problems. Every 100 cows will have around 30 treatments for infertility. Several studies have highlighted infertility as the predominant reason for culling in modern dairy herds. (1), (3), (8) The virtual eradication of tuberculosis and brucellosis has apparently had little overall effect in reducing cull rates due to infertility. Culling for infertility reaches its peak relative importance in the third lactation after which it declines.

The inter-relationship between the production diseases is further supported by (2) who demonstrated the close association between lameness and infertility.

Mastitis

In common with other surveys (7) DHHPS members have recorded fewer treatments for mastitis since the introduction of quotas. More cows were culled for mastitis in the first quota year 1984 and many farmers appear to have taken the opportunity of disposing of chronic carriers. In our service the treatment rate has stabilised at around 30 cows per 100 cows per year and there is no doubt a danger that mastitis may no longer be considered as a major factor in loss of milk yields and quality. Cows recumbent with hypocalcaemia or suffering from ketosis are much more likely to be subsequently affected with mastitis.

Lameness

The incidence of lameness is still high in many herds. Lameness is most common in early lactation and either directly or indirectly influences productivity and fertility. The incidence fell in the first year post quota but remains at around 25-30 cows per 100 cows. Similar levels of lameness are reported in other surveys which identify both farmer and veterinary treatments. Lameness must be considered to be a major welfare problem on some units. We have recorded on several farms a significant decline in the incidence of lameness where a preventive programme of regular foot dressing combined with foot bathing has been introduced.

Metabolic Disease

Hypomagnesaemia and hypocalcaemia

In several regions of the UK the number of clinical cases of hypomagnesaemia rose sharply in the summer following the introduction of quotas. This may have been attributable in part to a marked reduction in the level of concentrate feeding at grass. The incidence of clinical hypomagnesaemia fluctuates according to season but despite a great deal of publicity on the topic many farmers find it extremely difficult to sustain a regular intake of magnesium to dairy cows especially when concentrate feeding is minimal or absent, eg dry cows. During the grazing season we regularly record around 20 per cent of dry cows with low blood magnesium concentrations and this appears to relate to the significant increase in the incidence of hypocalcaemia at calving especially in animals at grass. Hypomagnesaemia may interfere with the release of PTH, the hydroxylation of vitamin D in the liver, the mobilisation of calcium from bones and the absorption of calcium from the gut.

Good dry cow management with the provision of adequate long fibre and magnesium in the diet will frequently produce a spectacular reduction in the incidence of both diseases.

Digestive Disease and Ketosis

Many farms report fewer digestive upsets such as acidosis and this may be a reflection on less concentrate being fed with a lower concentrate:forage ratio. Reduction in cow numbers has resulted in more cows having adequate access to cubicle or resting space with improved 'cow comfort' and optimal rumen function.

The incidence of ketosis has remained similar to that found before the introduction of quotas. Although many cows are not being fed to achieve maximum yields we continue to find that some 35 per cent of early lactation cows are energy deficient as determined by biochemical analysis.

The main reasons identified for shortfall in energy intake are:

- *Reduced appetite in early lactation due to over-fat condition at calving.
- *Feeding low energy concentrate, especially at grass. Many cows in the UK now calve in summer months to benefit from higher milk price at that time.
- *Over-estimation of contribution from wet autumn grass.
- *Over-estimation of forage quality.
- *Over-estimation of forage intake frequently due to poor accessibility.

Quotas have created problems in terms of reduced potential productivity. Changes in management and nutrition have resulted in the necessity to monitor health and production rigorously if optimum profitability is to be achieved. The necessity for the successful herd to achieve quota targets gives the progressive veterinary practitioner the opportunity to play an indispensable part in the management of the modern dairy unit.

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SUMMARY

The introduction of milk quotas to the United Kingdom in 1984 has resulted in changes in the management and feeding practice of many herds. The Dairy Herd Health and Productivity Service, which has over the past 15 years involved some 200 veterinary practices and some 1000 dairy farms throughout the United Kingdom and Northern Ireland, has provided regular information on disease occurrence and on the adequacy of nutrition and management in relation to health and productivity. Poor reproductive performance, mastitis and lameness are the major health reasons for disposal. Metabolic disorders are also important reasons for lost production. The necessity to achieve quota targets has provided the veterinary practitioner with the opportunity to become involved in the health and nutrition management on progressive dairy farms.

RESUMÉ

L'Introduction des quotas laitiers dans le Royaume Uni en 1984 a entraîné un remodelage de l'administration et de l'alimentation de certains troupeaux.

Le Service de santé et de reproductivité de l'élevage laitier qui a mis en jeu ces quinze dernières années environ 200 cliniques vétérinaires et 1000 élevages laitiers à travers la Grande Bretagne et l'Irlande du Nord, a fourni une information régulière sur les maladies rencontrées et la façon d'adapter administration et alimentation à santé et productivité.

Les faibles performances de productivité, le mamites les boiteries et les problèmes d'ordre métabolique sont les principales raisons d'une baisse de production. La nécessité d'atteindre les quotas imposés a fourni au praticien la possibilité de s'impliquer dans la conduite sanitaire de l'élevage laitier.

RESUMEN

La introducción de las cuotas de leche en el Reino Unido en 1984 ha provocado el cambio en el manejo y en las prácticas alimentarias de muchas ganaderías. Los Servicios Sanitarios y de Producción del vacuno de leche, que han involucrado en los últimos quince años, unas 200 unidades veterinarias y unas 1000 granjas de producción láctea en el Reino Unido y Norte de Irlanda, han dado información regular de la incidencia de enfermedades, de la nutrición y del manejo, todo ello en relación con la salud y la producción. Las principales causas de la pérdida de animales son una baja reproductividad, mastitis y cojeras. Los desórdenes metabólicos son también importantes en las pérdidas de la producción. La necesidad de alcanzar una determinada cuota, ha dado al veterinario la oportunidad de influir directamente en la salud, manejo y nutrición de un número progresivo de granjas de producción láctea.