

GENÉTICA Y MEJORAMIENTO

GM 01. STUDY OF SOME FERTILITY INDICES OF DAIRY HERDS MONITORED BY COMPUTERIZED INFORMATION SYSTEMS

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Resumo

Estudo de alguns índices de fertilidade em rebanhos leiteiros monitorados por sistema computacional de informação

Os sistemas computadorizados de informação constituem um valioso instrumento no auxílio da administração da propriedade leiteira, entretanto, no Brasil, poucos fazendeiros se utilizam dessa tecnologia. A Estação Experimental de Zootecnia de Ribeirão Preto, SP/IZ/SAA, através do projeto de gerenciamento da propriedade leiteira usando sistema computadorizado de informação (DAISY - The Dairy Information Systems), monitorou cinco rebanhos mestiços leiteiros no período de 1992 a 1995 com objetivo de avaliar a tendência de alguns índices de fertilidade. Este trabalho mostrou que é muito difícil afirmar se houve ou não melhora do desempenho dos rebanhos estudados. Os resultados sugerem que vários fatores estão envolvidos na avaliação de índices de fertilidade, especialmente em países em desenvolvimento onde a política leiteira nem sempre motiva os produtores de leite a tomar medidas restritas de manejo para com suas vacas. Observou-se que os fazendeiros aprenderam com o projeto de monitoramento, no decorrer dos anos, a importância de uma anotação zootécnica mais fidedigna e completa. Isto resultou que alguns rebanhos apresentaram índices zootécnicos que pareciam não ter apresentado melhora no seu desempenho, entretanto, esses índices são mais realistas do que os índices observados no início do projeto. Programas educacionais deveriam ser implementados com o objetivo de divulgar a importância da informação na tomada das decisões de manejo.

Palavras-chave: Índices de fertilidade, sistemas computadorizados de informação, rebanhos leiteiros e produtor de leite.

Key words: Fertility indices, computerized information systems, dairy herds and dairy farmer.

Introduction

In developed countries the use of computerized information systems has contributed significantly to the increase in milk production (Keown, 1988) and also to decrease calving interval (Peters *et al.*, 1994). This is important because it is often associated with greater profitability (Stallings *et al.* 1992). Computerized information systems have been a useful tool for management decisions (Chase, 1993; Nelson, 1993; Spahr, 1993; Tomaszewski, 1993) but in Brazil just a few farmers have adopted this technology. Since 1989 the “Estação Experimental de Zootecnia de Ribeirão Preto, SP” has been developing a program of monitoring dairy herds through computerized information systems aiming to help dairy farmers to make more appropriate decisions in farm management (Details are described in Freitas and Zambianchi, 1996). The objective of this work is to verify the tendency of some fertility indices of monitored dairy herds from 1992 to 1995.

Material and Methods

Data from a program of monitoring dairy farms developed by the “Estação Experimental de Zootecnia de Ribeirão Preto, IZ/SAA, SP, Brasil” were studied from 1992 to 1995. Five crossbreed herds that have been enrolled in the program over the years and they are under similar management conditions (Details described in Zambianchi, 1996). Data for descriptive analysis was collected from DAISY (The Dairy Information System) herd status report (P1). The fertility indices used to assess the performance are described below based on Esslemont (1993):

Calving interval to conception (days). Is the average interval from calving to conception;

Days open. Is an average of days from calving to conception for the cows conceiving and days from calving to culling for those that did not conceived;

Percentage of cows that re-calved. Is the number of cows calving in the twelve month period which are

diagnosed pregnant not less than 42 days after an effective service, expressed as a percentage of the number of cows calved

Number of services per conception. Is the total number of services given to cows, divided by the number of services which result in a diagnosed pregnancy not less than 42 days after service.

Results and discussion

There was a tendency for the calving interval to conception to decrease over the years (Figure 1). This indice is a good parameter to assess herd efficiency. It reflects improvements of the herds in cow fertility, heat detection efficiency and artificial insemination. However, this indice does not take into account cows that are bred and culled or those which did not cycle. This can overestimate reproductive performance particularly if a large proportion of cows fails to conceive or are culled. Therefore, days open was the other indice used to assess herd performance. The days open take into account all cows that did not yet conceive within 12 month period, hence it shows the poorest cows in the herd. The days open also decreased over the years. This is maybe due to a great culling rate range, for instance, in 1993, herds 31 e 43 showed culling rate 53 % e 9 %, respectively).

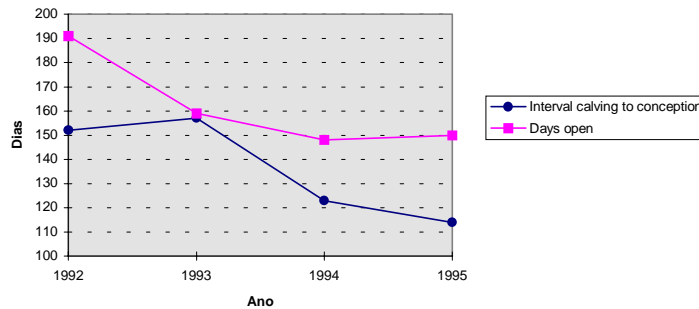


Figure 1: Interval calving to conception and days open of crossbreed dairy herds from 1992 to 1995.

Surprisingly, the percentage of cows that re-calved tended to decrease over the years. The possible reasons are: i) because, in 1995, herd 43 served only 62 % of its cows; ii) herds 16 and 24 showed very low pregnancy rate (30 and 38%, respectively).

Figure 2 shows that number of services per conception was stable until 1994 and then it increased in 1995.

Care must be exercised in interpreting these data because of the variation in recording procedures. Some dairy farmers are more accurate in recording and others have learnt over the years how and what to record.

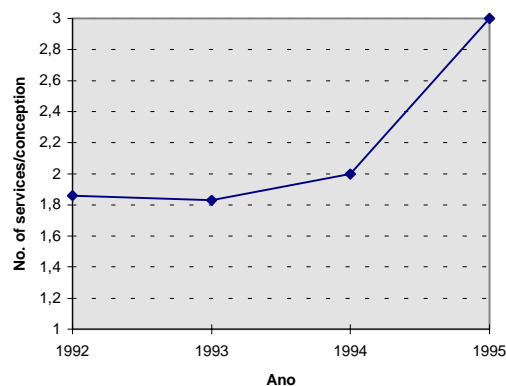


Figure 2: Number of services per conception of crossbreed dairy herds from 1992 to 1995

Conclusion

This work showed that it is difficult to state if the herd performance has improved or not based only in the studied indices. The results suggested that many factors are involved when assessing dairy herd fertility indices, specially in developing countries where milk policy does not always motivate the dairy farmer to have a tight

policy with his cows. It is also important to understand that over the years farmers have learnt 'what' and 'how' to record, as a consequence, some fertility indices seemed to be worse but they were more realistic than previous figures. Educational programmes for dairy farmers on the information needs and use for farm management should be supported and implemented.

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