

Health status, production and reproduction performance in cattle herds as influenced by management

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Introduction The overall trend of the reproduction performance is a reduction since at least 20 years. In Belgium, the pregnancy rate at artificial insemination decreases about 1% per year (Opsomer *et al*, 2006). To obtain good reproduction performance, many requisite factors are necessary. Health status, nutritional status or production level are some well-known examples. Many studies review these factors and their impact on the reproduction performance. The aim of this work was to describe the impact of health status, production and management on the reproduction performance in Walloon farms.

Material and methods An inquiry was carried on in 2005 in Wallonia at the "Association Wallonne de l'Elevage". There were about 70 veterinarians, grouped in 18 units involved in the artificial insemination network who monitored the reproduction. The insemination network, spread in the entire Wallonia covered about 9000 dairy and/or beef farms. Within this network, 224 dairy herds and 51 beef herds were also supported by the technical and economy team of the association. One veterinarian from each unit was questioned during a full working day in order to provide reproduction data which were included in a data base along with the economy parameters.

Results The major problems accountable for partial failure in the reproduction performance for dairy or beef breed were nutrition and heat detection in both dairy herds and beef herds (about 30% for each problem). Then, in dairy herds, cysts accounted for 12% of the problems but they can be related also to nutrition. In beef herds, the third problem was metritis (12.6%). The major requests for veterinarians involved in the monitoring of the reproduction are summarized in Figure 1. In the beef herds, the age at first calving (AFC), the calving interval (CI) and the fertility index were negatively correlated to the herd size, ($r = -0.183$, $r = -0.267$, $r = -0.324$ respectively, $P < 0.05$). For the dairy farms, the CI only was correlated to the size ($r = -0.152$, $P < 0.05$). Table 1 shows the reproduction performance according to the production performance in the dairy and beef herds. The AFC was smaller when the annual milk yield increased (31.2 months for production < 5000 kg milk vs 28.0 months for production > 8000 kg milk). For CI an average production of about 6000-7000 kg seemed to be the best for cow fecundity (397 days). In the beef farms, the heifer and the cow fecundities seemed to be improved with the increase of production expressed as total live weight gain/ha, as indicated by the AFC which was 35.4 vs 30.5 months and by the CI was 469 vs 420 days for a production < 350 kg and > 650 kg of live weight/ha respectively. The dairy farmers seemed to invest more in reproduction than the beef farmers (> 70 € vs 40 € maximum).

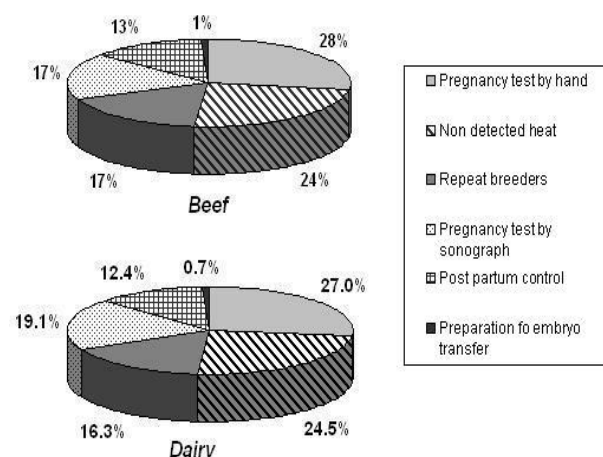


Figure 1 Distribution of major acts required by farmers in the inseminator network

Conclusion According to this study it appeared that quite good reproduction performance could be achieved, even if the size of the herd and the production level were increased. The management of nutrition, the heat detection quality and the control of the reproduction cycle seemed to be some of the major key factors to improve reproduction performance. Furthermore, even if these critical points were not well under control, progresses are on their way.

References Opsomer, G., Leroy, J.L.M.R., Vanholder, T., Bossaert, P. and de Kruif, A. 2006. Vlaam..Diergeneesk. Tijdschr., 75, 113-119.

Table 1 Reproduction performance according to the production performance in the cattle herds

Production	Number	AFC (month)	CI (days)
Kg Milk Dairy herds			
>8000	29 (9%)	28.0 ±2.2	404 ±81
7000-8000	91 (28%)	29.1 ±4.8	426 ±29
6000-7000	99 (31%)	29.9 ±4.6	397 ±113
5000-6000	46 (14%)	30.4 ±3.3	405 ±112
<5000	59 (18%)	31.2 ±6.0	401 ±119
Kg weight/ha Beef herds			
>650	2	30.5 ±2.1	420 ±5
550-650	8	31.9 ±3.5	440 ±38
450-550	12	33.1 ±2.6	425 ±36
350-450	22	34.0 ±4.8	445 ±66
<350	7	35.4 ±4.7	469 ±43