

Total control in real time with intuitive herd management system

by **Milkline Srl, via Mattei 4, Loc. Gariga, 29027 Podenzano, Italy.**

Milkline's DataFlow II is a new herd management system able to provide real time monitoring and control over the milking process and the reproductive, health and nutritional status of each individual cow.

It provides farmers with all the necessary data for enabling the best decision-making process (summary tables, graphs, indexes, historical data of every cow, etc).

All the information is collected from sensors placed on the collars attached to the animals. The data is then automatically transferred from each device to DataFlow II through a dedicated network. The system also controls other components such as milking points, feed station, scale and the sorting gate.

Milking

By controlling and monitoring the process and efficiency of milking in real-time, DataFlow II provides the necessary information for maximising milk production and herd productivity. The system enables a global overview of milking by monitoring each milking point.

It indicates the milking status of each individual cow and a range of additional useful information, such as the cow number, milk production and whether the cow needs to be monitored. Possible problems related to the cows – low production or health issues (for example, significant differences in milk conductivity, blood in milk, or kicking), or other conditions such as heat – are immediately signalled during milking.

Health

Rumination is an earlier and more reliable indicator of a cow's well-being and health: a drop in rumination is a first warning sign of disease; milk production will usually return to normal following effective veterinary treatment.

DataFlow II, with its connected devices, is able to monitor cows 24 hours a day and record rumination minutes. It is through the real-time monitoring of rumination that possible health problems can be detected and cured early on, thereby avoiding a negative impact on the level of milk production. The system provides constant control and monitoring of the health status of individual cows and the herd as a whole, and if appropriate, reports health issues to allow for early intervention.

The software is able to interact seamlessly with the MilproP4C system, a control unit connected to the milking parlour that is able to work separately on individual udder quarters and to prevent the risks of overmilking by discontinuing milking at the right time. With DataFlow II, possible mastitis cases spotted by the MilproP4c unit can be monitored in real time, detected and cured. Moreover, cows with mastitis can be monitored to prevent the disease from spreading within the rest of the herd.

Feeding

Nutrition affects the health, fertility and production of the cow. It has been demonstrated that an incorrect daily feeding programme, especially before and after calving, is a key factor of infertility in dairy cows. Lower milk yields may also be determined by an insufficient intake of certain nutrients or an inadequate diet. Nutritionists have long since considered the mastication of the bolus as a key aspect for the health monitoring of dairy cows; drops in rumination time can be caused by the incorrect administration of the feed ratio.

Managing cow feeding is therefore, despite being a difficult task, one that is crucial for all
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Reproduction – activity peak with a drop in the rumination.



Health monitoring – metritis and retained placenta.



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farmers. The DataFlow II system provides valuable support in determining the most suitable feeding strategy for your herd. It provides all the necessary information for determining a feeding ratio that is able to maximise milk yield, ensure the animal's well being and reduce feed and labour costs.

Reproduction

Most of the heats occur during evening/night hours and only last for a short time. Visual heat-detection observation of cows is not entirely reliable, because it is based on individual ability and experience. It is also incomplete, because it is impossible to conduct an observation for 24 hours. This is one of the major factors for the need to reduce heat detection rate (HDR) in dairy farms.

Automatic heat detection reduces the daily time dedicated to heat detection, improves conception rate, reduces insemination costs and improves intercalving interval. It is also possible to reduce the number of days open, increase the herd and improve the genetics of the herd, thereby increasing milk production during the dairy cow's production cycle.

Monitoring cows' activity and rumination may provide further insight into heat detection.

Since studies have demonstrated that all cows show a drop in rumination when in heat, a cow's heat may be further confirmed through individual rumination monitoring.

DataFlow II is extremely accurate in terms of indicating the optimal time for insemination and simplifies the individual cow detection activity. This increases conception rates, reduces insemination costs and the interval between one calving and the next. By reducing the calving-conception interval, farms are able to optimise milk production and maximise yield.

Difficult calving

Predicting calving difficulty is fundamental not only for the health of the newborn calves and their mothers, but also to safeguard lactation and to prevent the loss of the productive potential of a future dairy cow.

DataFlow II is able to provide notifications for difficult calving through real-time monitoring of rumination. As stated in some studies, it is in the period near calving that a significant drop of rumination occurs.

The system also provides pro-active management of the herd. The system provides notifications for possible cow related health problems (ketosis, metritis, mastitis, abomasal dislocation, etc) before they become pathologies.

Early detection allows for timely intervention, shortening the recovery period and limiting any negative impact on productivity performance.

Veterinary check

DataFlow II allows for the use of a portal dedicated to veterinary service with specific graphs and tables (insemination, fertility summary, conception rate, heat-detection rate, pregnancy rate, suspected abortion, etc). The portal can be customised to create a veterinary check packet; the veterinarian can insert the routine weekly or monthly checks to be carried out within the herd. The system automatically detects the group of animals matching the set parameters and sends notifications concerning these animals.

The veterinarian can also create specific reports for each intervention, to be referred to when needed. DataFlow II renders diagnosis/veterinary check activities easier and provides an updated representation of each animal's health and of treatments carried out. The system reduces the veterinary technician's time/labour, thereby reducing the costs invested in veterinary service. ■

*References are available
from the author on request*