

Research Paper Summary

The economic impact of purulent vaginal discharge in dairy herds within a single lactation

Short title: the cost of uterine disease

Key words: dairy cattle; economics; uterine disease

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Practical point

Cows diagnosed with purulent vaginal discharge (PVD) had reduced milk production and fertility, as well as increased cull rate by 305-d. This led to a decrease in income and increased expenses, with PVD causing an average loss of \$202 (USD) (approx. £156 GBP).

Background

Uterine disease is associated with a reduction in overall productive and reproductive performance of dairy cattle, leading to large economic losses. The current prevalence of purulent (pus) vaginal discharge (PVD) is suggested to be ~20% among lactating dairy cows. PVD is associated with reduced fertility, including delayed cycling, reduced AI success, increased calving interval and increased pregnancy loss. PVD is also negatively associated with production losses, with both reduced fertility and reduced yields leading to increased cull rates.

This study aimed to understand the cost of PVD in dairy cattle across a single 305-d lactation, using data from American dairy herds.

Work undertaken

Animals were enrolled onto the trial from 16 farms across the United States. Farms were visited 1-2 times weekly, cows enrolled at calving and monitored to 305-DIM, or until they were removed from the herd (death or sale). Animal data including (date, lactation number, calving issues) were

recorded, alongside health information (mastitis incidence, displaced abomasum, PVD), and production data (milk yields) were collected.

Animals were diagnosed as having PVD based on vaginal discharge at approximately 28-DIM. Discharge was scored on a scale, where “0 = no discharge, 1 = clear discharge; 2 = bits of purulent material in otherwise clear mucus; 3 = mucopurulent but <50% purulent material; 4 = mucopurulent with >50% purulent material; and 5 = mucopurulent with >50% purulent material and smelly discharge”.

Income and expenses were calculated for each cow, using average prices for income from milk sales and cow sales, and feed, reproductive management and replacement costs.

Results

This study showed that the average prevalence of PVD was 25.5%, with infection more common in primiparous than multiparous cows. Cows with PVD had reduced total milk yields (241kg less by 305-d) resulting in a decrease in milk income of \$117. However, cows with PVD had lower estimated DMI intakes than cows without PVD, leading to an estimated reduction in feed cost of \$31.

PVD was associated with reduced pregnancy rate by 305-d. Due to this reduced reproductive performance, cows with PVD had greater reproductive management costs than cows without. Cows with PVD therefore had an increased risk of culling and a \$113 greater cost associated with replacement.

Conclusions

This study showed that PVD negatively affects the economic return of high producing dairy cattle, by impacting negatively on milk production, reproductive efficiency and cull rate. Across herds studied, PVD in dairy cows was associated with a reduction in gross profit per cow of \$202 USD.

Reference

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