



THE EFFECTS OF AHV STOPLAC® ON THE FOLLOWING LACTATION OF DAIRY COWS WITH REGARD TO PRODUCTION LEVEL

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Introduction - Dry-off Management

For most dairy farmers, the dry-off period of their cows is a challenging phase to manage. How to regulate production and the increasing pressure on the udder is a much-asked question. Problems such as milk leakage, increased somatic cell count, discomfort, and stress are commonly observed during this period. As management decisions before and during dry-off strongly influence health and production during the next lactation, dry-off is far more than simply stopping milk production. It is a critical moment in the cow's production cycle, determining the degree of recovery, internal preparation for calving, and performance in the following lactation.

Traditional dry-off strategies aim to reduce milk yield gradually by mainly changing rations and lowering milking frequency. Stress, a disturbance in the cows' energy balance, and increasing risks of udder infections due to milk leakage are often side effects. In response to these challenges, AHV International has developed AHV StopLac®. AHV StopLac® is a feed-based intervention designed to support abrupt dry-off strategy. AHV states; an abrupt dry-off approach is more advantageous on various aspects regarding cow performance compared to gradual methods. Results of former research by AHV International shows improved cow performance in the following lactation. The ingredients in the AHV StopLac® tablets modify the microbial population in the rumen temporarily, leading to a change in volatile fatty acids that reduce the activity of the rumen immediately. This will limit the nutrient availability for milk synthesis, leading to a rapid reduction in milk yield.

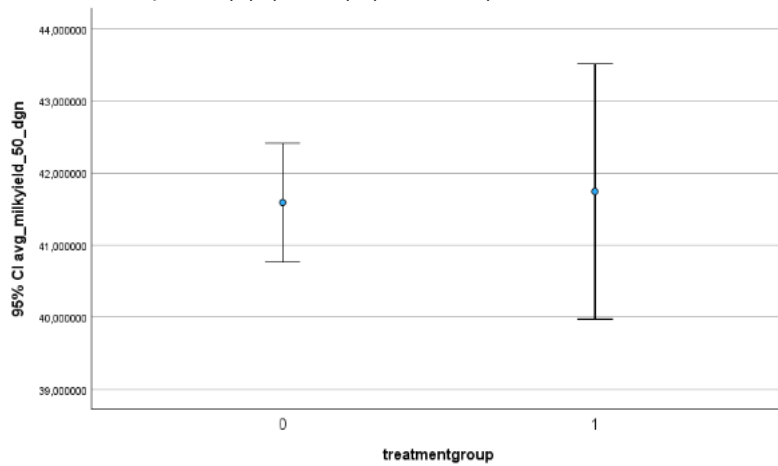
The objective of this research was to gain insight into the effect of dry-off with AHV StopLac® on the production performance of dairy cows in the following lactation. Following the central research question: What is the impact of AHV StopLac® treatment on milk production in the following lactation? The study focusses on the average milk production during the first 50 and 100 days after calving. Thereby, observing potential differences in primiparous and pluriparous dairy cows. This quantitative study is based on data collected at 27 dairy farms, located in the Netherlands and Belgium. The AHV StopLac® group included 174 dairy cows from 21 farms that received at least four AHV StopLac® boluses at dry-off. Mean milk yield was 41.30 kg/day during the first 50 days and 43.32 kg/day during the first 100 days, with a mean lactation number of 3.33. The control group consisted of 3,965 dairy cows from 27 farms that did not receive AHV StopLac®. Mean milk yield was 42.57 kg/day in the first 50 days and 44.27 kg/day in the first 100 days, with a mean lactation number of 2.58.

Results and research insights

The results indicate that AHV StopLac® treatment is associated with higher milk production during the early phase of the subsequent lactation. Cows that received AHV StopLac® produced significantly more milk during the first 50 days of lactation compared to untreated cows ($P=0.029$). See figure 1. This difference was observed only during early lactation, as no significant difference in milk production was found between treated and untreated cows when milk yield was evaluated over the first 100 days of lactation.



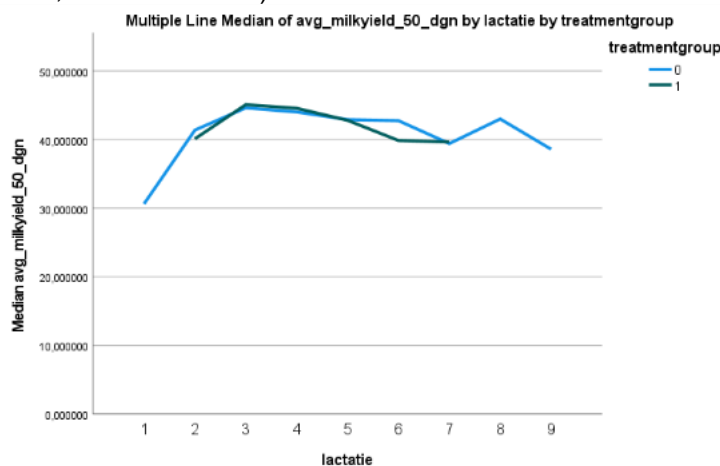
Figure 1. Average milk yield during the first 50 days in lactation cow treated (1) and cows not treated (0) with AHV StopLac® (1)n= 94,(0) n= 1203).



Milk production during the first 50 days also varied over parities. Second-lactation cows produced more milk than first-lactation cows, while third-lactation cows showed a slightly higher milk yield than second-lactation cows. No significant difference in early milk production was observed between cows in their third and fourth lactation.

When examining the interaction between treatment and lactation number (figure 2), differences in milk production between lactation were significant among cows that did not receive AHV StopLac® (p=0.001). In contrast, milk yield during the first 50 days did not differ significantly between lactations in cows treated with AHV StopLac®(p=0.358). Within individual lactation, no significant differences in milk production were observed between treated and untreated cows (p= 0.39)

Figure 2. Interaction plot milk yield 50 days of lactation, parity number and treatment groups (0= untreated cows, 1= treated cows).





PRACTICAL IMPLICATIONS for dairy farmers

A potential follow-up on this research could include external impacting factors on production performance, and a larger sample size. As this research suggests that AHV StopLac® is associated with increased milk production during the early phase of the following lactation, it may be worth considering the potential of abrupt dry-off strategies for your cows. Monitoring and evaluation of the production performance of the cows and related impacting factors, including management decisions, could be a first approach in gaining insight into the possibilities for optimization of dry-off management.

RETURN ON INVESTMENT (ROI)

Costs:

Product cost: €38 per cow (4 STOPLAC boluses)

= €38 / cow

Benefits:

More milk before abrupt dry-off: **€52**

Avoiding feed restriction during the last 10 days of lactation: additional 105 kg of milk per cow, whereas gradual drying-off typically causes a 34% daily production loss (Tucker et al., 2009). (based on €0.50/L, 30kg/day/cow).

More milk after calving: **€96**

+1.93 kg/cow/day over the first 100 days in milk

= **€110 / cow**

Total ROI: Benefit – Costs / benefits = (148)-38/(148) = 3.89

RECOMMENDATIONS (AHV protocol)

AHV recommends administering 4 StopLac® boluses within 2 hours after the last milking on the day of drying-off.

HAVE A QUESTION?

Visit www.ahvint.com to schedule an appointment with an AHV Farm Advisor.