Preliminary Evaluation of a Phytogenic Dry-Off Tablet on Dairy Cow Transition Health and Performance

Delhez P.[1], Hamard H.[1], Rao A.-S.[1], Ackaert G.[2], Theron L.[1]
[1]RumeXperts, Faimes, BE; [2]AHV International B.V., Zwolle, NL

Background

Dry-off is a critical period for dairy cow health and productivity. This study evaluates a novel allium-based dry-off tablet (StopLac®) to support metabolic adaptation during the transition period.

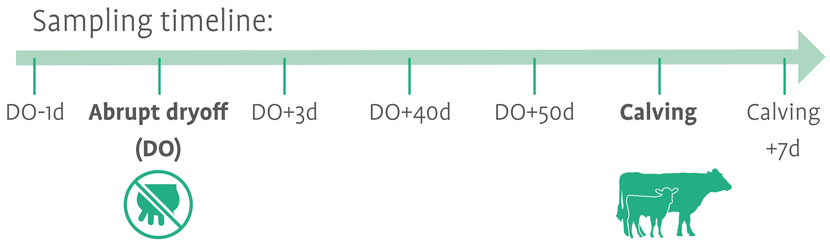
Materials and Methods

Animals

- **20** multiparous Holstein cows at dry-off and early lactation
- 1 commercial farm
- 2024

Experimental design

- Treatments:
  1. Negative control: antibiotic + sealant (N = 10 cows)
  2. Treatment: antibiotic + sealant + StopLac® (allium-based tablet, 4 administered at dry-off) (N = 10 cows)
- Sampling timeline:



Measurements

40 blood biomarkers:

- Nutrition-related biomarkers (e.g., albumin, urea, NEFA, vit. B12)
- Mineral profile (Ca, P, MG)
- Liver health biomarkers (e.g., AST, GGT, GLDH)
- Complete Blood Count (e.g., hemoglobin, leukocytes)
- Inflammation biomarkers (haptoglobin, LPS-binding protein (LBP))

12 milk biomarkers:

- Metabolic biomarkers (e.g., fat, TP, urea, lactose, lactalbumin)
- Udder health (somatic cell count, LBP, cathelicidin)
- Daily milk production (up to 60 days post calving)

Clinical data:

- Udder health
- Pathologies (e.g., acetonemia, placental retention, diarrhea, hypocalcemia)
- Body condition score

Statistics

- **Descriptive statistics** (boxplots, barplots)
- **Cohen's d :** measure of the effect size between the treatment groups at different study time points.

$$d = \frac{\bar{X}_1 - \bar{X}_2}{S_{pooled}}$$

$\bar{X}_1$ Mean of the StopLac® group

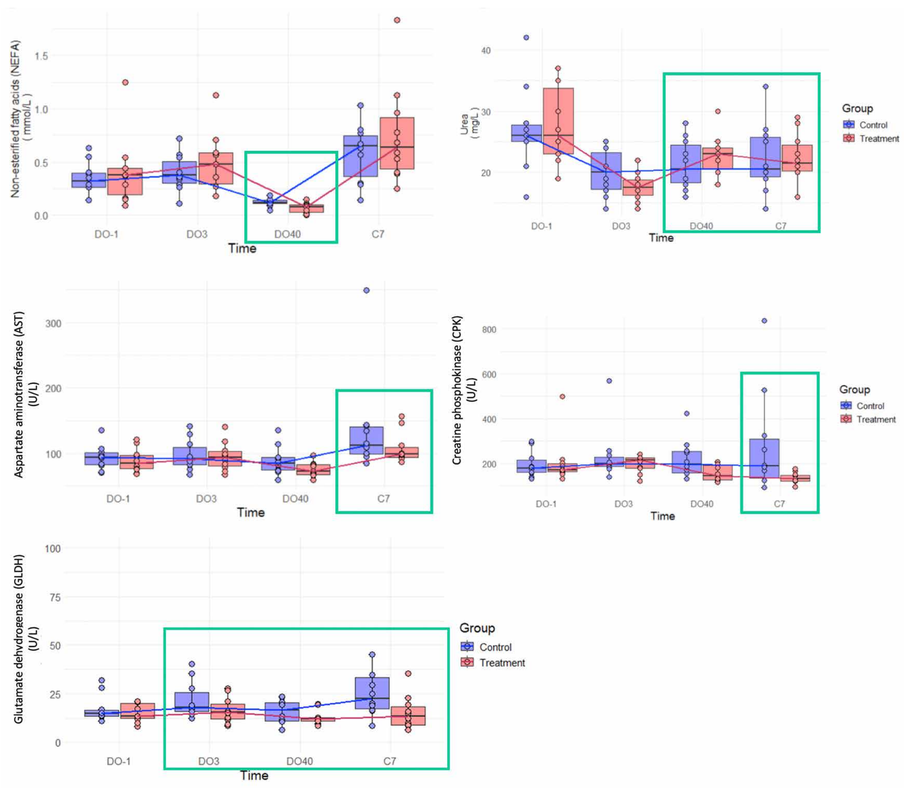
$\bar{X}_2$ Mean of the control group

S_{pooled} Pooled standard deviation of both groups

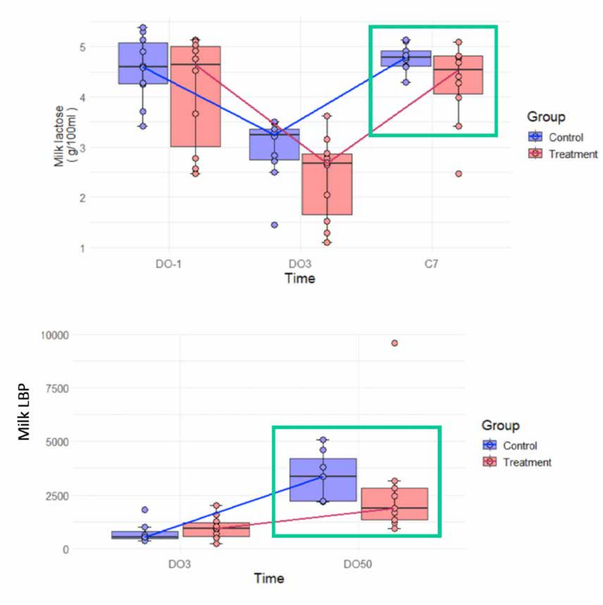
Results

Blood biomarkers

Reduced fat mobilization prepartum, better amino acid utilization, lower hepatic stress, better metabolic preparation



Milk metabolic biomarkers & Udder health



Reduced lactose postpartum

Lower mammary inflammation before and after calving

No significant difference in somatic cell count

Conclusion

- StopLac® showed beneficial effects during dry-off and early postpartum
- Improved protein-energy metabolism (NEFA, urea), liver function (AST, GLDH), and overall clinical status
- Reduced metabolic stress during the transition period, supporting udder health regeneration and enhancing resilience to metabolic and infectious challenges at lactation onset
- Further trials with larger herds are underway

info@rumexperts.vet
www.rumexperts.vet