

Southeast Dairy Producer's Check-Off Program Research Summary

Minimizing inflammation in the early dry period under heat stress condition

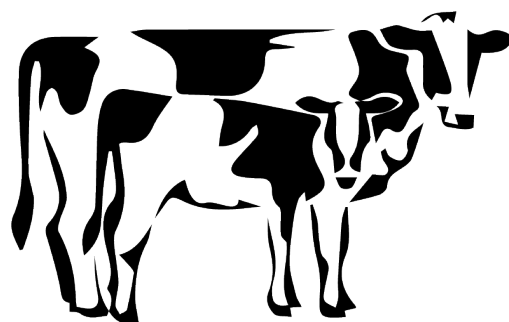
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Funding Year: 2022

Amount Awarded: \$21,336

Implications

Because this study is still working in progress, no definite conclusion and implication can be made. But preliminary data suggest that the schedule of dry cow vaccination can affect the function of circulating immune cells.



Methods

This study was conducted in a commercial dairy farm in Georgia. All lactating cows were milked 3 times a day. Farm standard operating procedure (SOP) included vaccination at 2 d before dry-off (Enviracor J-5, Scourguard 4KC, Somubac, and Ultrabac 7, Zoetis). Following vaccination, cows were raised on pasture, fed only hay and milked once a day until dry-off. Dry cows were raised on pasture and moved to a close-up barn 3 weeks before calving. Multiparous cows were assigned to 2 groups based on the last number (even/odd) of her name tag: 1. Vaccination at 2 d before dry-off (SOP, n = 164); 2. Vaccination at 11 d before DO (EV, n = 139). Milk yield was recorded daily, and mastitis recorded during lactation. Blood was drawn at 3 d after dry-off to isolate circulating mononuclear immune cells. Cells were stimulated by concanavalin A and lipopolysaccharide to assess proliferation and cytokine production in vitro.

Results

Giving vaccines earlier reduced milk yield before dry-off. Immune cells collected from SOP cows tended to have greater proliferation to concanavalin A than EV. When stimulated by concanavalin A, immune cells collected from SOP cows had greater production of inflammatory cytokines than EV. When stimulated by LPS, Immune cells from SOP cows also had greater production of inflammatory cytokines than EV.

***This project is unfinished and we are still collecting data and analyze the data and samples.
More information to come.***



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