Texas Dairy Matters

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DON'T FORGET TO COOL THE DRY COWS

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The dry period provides dairy cows a time for rest and rejuvenation between lactations, but that doesn't mean she should be forgotten. Both the rumen and the udder undergo changes in preparation for the next lactation while the cow is dry. In addition, the most rapid growth of the calf occurs during this same time. Finally, it is hypothesized that the cows' ovaries develop the follicles that grow into the eggs released during the early postpartum period.

Early work on heat stress during the dry period compared the effect of just providing shade to dry cows. Heat stress reduced the concentration of thyroid hormones, as well as estrogen production, from the fetus and placenta. In addition, calves averaged seven pounds lighter when their dams didn't have shade. Research at the University of Arizona suggests fewer cows are culled because they are open after milking ten months when dry cows are cooled as well.

Recent work at the University of Florida, compared cows that were either heat stressed or cooled. All cows were housed in the same barn throughout the dry period; however cooled cows had sprinklers and fans in addition to the shade from the roof. The heat stressed cows had higher

rectal temperatures in the morning and afternoon, greater respiration rates and decreased dry matter intake compared to the cows that were cooled with fans and sprinklers.

Heat stress decreased mammary gland development based on cell proliferation rate. To quantify the impact of the changed cell proliferation, milk production was monitored for 280 days after calving. During this period the cooled cows produced 74.6 pounds of milk per day, while the heat stressed cows averaged just 63.6 pounds of milk per day. Milk protein was lower in the cooled cows and somatic cell score tended to be lower as well.

Shade and cooling for heat stress relief throughout the dry period increases calf birth weights by as much as 10%, plus improves colostrum quality. In addition, summer calves nurse their dams less vigorously and may not absorb protective antibodies due to the heat stress. Increased health problems and death rates of calves born during the summer and early fall result from the combined effects of decreased colostrum quality, nursing vigor and antibody absorption.

Reduce heat stress before calving by cooling cows with fans and sprinklers in addition to shade. The economic benefit from cooling dry cows results from the eleven pound per day increase in milk production, as well as healthier calves and improved reproduction.

For further information, visit our website at: http://texasdairymatters.org/.

Reference

Tao, S., and G.E. Dahl. 2013. Invited review: Heat stress effects during late gestation on dry cows and their calves. J. Dairy Sci. 96:4079-4093.