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DRY COWS NEED COOLING TOO

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Dry cows may be more sensitive to moderate heat stress than milking cows. The dry period gives the udder time to rest and regenerate, allows for rapid growth of the unborn calf and starts the beginning of a new lactation. This is also when the cows' ovaries develop new eggs for the following reproductive cycle. Work from the University of Arizona suggests the main advantage to cooling dry cows may be fewer cows culled because they are open after milking ten months.

Prepartum heat stress may reduce concentrations of thyroid hormones and placental estrogen, while increasing blood nonesterified fatty acid (NEFA) levels. These affect growth of the udder, placenta, or unborn calf. In turn, these factors influence the udder's productivity in the next lactation and uterine involution.

Shade and cooling for heat stress relief during the t three months of pregnancy can increase calf birth ights as much as 10%, plus improve colostrum quality. erature reports summer calves nurse their dams less orously and may not absorb protective antibodies due heat stress. Increased health problems and death rates calves born during the summer and early fall result from combined effects of decreased colostrum quality, sing vigor and antibody absorption.

Research reports of milk production response to cooling dry cows have been variable. The results range from no significant differences to an increase of 9.4 percent in 150-day milk production.

Reducing heat stress before calving affects performance in a variety of ways (table 1). Consistent responses of decreased rectal temperature and respiration rate, and increased calf birth weight due to prepartum cooling are achieved. Economic benefits of greater milk production resulting from dry period cooling aren't realized immediately. Over the long haul cows may produce more milk and become pregnant sooner during the following lactation if they are cooled before calving.

Table 1: Summary of changes which occur as a result of heat stress.

Measure	Responses
Calf birth weight	8% increase
Colostrum yield	No effect
Colostrum quality	Increased immunoglobulins, fat, protein
150 day milk yield	0 to 9.4% increase