

## *Lingering Effects of Heat Stress*

Heat and humidity negatively affect cows. During heat stress, most dairies experience a precipitous drop in milk production, a decline in milk fat test and a decrease in reproductive performance. However, after several bouts of heat stress during the summer, once the weather cools off, we don't see the cows bounce right back. Why is this?

Once a cow in late lactation drops in milk, they typically don't recover. Until those cows are dried off and replaced with fresh cows, milk production will be lower. There are other problems associated with heat stressed cows. In addition to milk yield, heat stress has a profound effect on reproductive performance and health.

Feed intake is reduced during heat stress. This results in body weight losses that need to be regained when intakes are restored. In addition, more energy is directed toward maintenance during heat stress. Depending on weight loss, it could take several months to gain it back. A decline in feed intake and intake fluctuations can lead to subclinical acidosis. In addition, a warm moist environment increases the risk of foot disorders (abscesses, foot rot, and laminitis). These symptoms often appear long after the heat has subsided. In addition, excessive feed intake decline at calving as well as immune suppression caused by heat stress can lead to more metabolic disorders, mastitis, and higher somatic cell counts. All of these problems impact subsequent productivity.

Heat stress dramatically lowers conception rates. Two major causes for this are reduced heat detection because of less physical activity and success of insemination. A Florida study showed pregnancy rates in warm weather could be less than a third of what is achieved in cool months. In addition, heat stress can cause early embryonic death, cystic ovaries, and retained placentas. Effects of heat stress on reproduction of dairy cattle are broad and particularly devastating. Recovery from these problems is long term.

So let's add up the consequences of heat stress:

- Excessive weight loss
- Increase in foot disorders
- Increased fresh cow disorders
- Decline in pregnancy rates
- Embryo mortality in pregnant cows
- Non-response of late lactation cows once heat stress subsides

Add to this all the feed changes that take place this time of year and I think we can understand why it takes until the first of the year for herds to begin milking well again. What's the solution? Heat abatement through housing modification, supplemental cooling, plus feeding and management practices that help minimize internal heat production.

