



Dairy research update

by *Paula Mohr*

A tale of two coolers

Two evaporative cooling systems were evaluated by University of Arizona researchers. Korral Kool, with fixed overhead coolers and variable-speed fans, and pressurized water injected into the air, was compared with an oscillating fan and spray cooling system. The study took place on the university dairy with 40 cows in each group.

Water use was higher and electrical use lower with the oscillating fan system. Average cow surface temperature and respiration were lower with the fixed system. Milk yield did not differ between the two groups even though the Korral Kool system improved cow comfort. Initial investment for the systems: \$250/cow for the oscillating fan; \$398/cow for Korral Kool.

Intensive cooling pays

An Israeli study shows that intensive cooling significantly reduces seasonal variation in production and reproduction performance.

Scientists observed about 4,200 cows on 14 dairy farms for four years. In the summer, cows were in one of three groups: intensively cooled in holding and feeding areas 10X/day for 45 minutes each; moderately cooled in the holding area 6X/day for 45 minutes each; and minimally cooled, with wetting periods only 3X/day, prior to milking.

The intensively cooled cattle in summer produced as much as or more milk than in the winter. Plus, conception rates in summer among intensively cooled cows were doubled compared to the minimally cooled group. Investment and operating costs for the intensive cooling system totaled \$30/cow, which was repaid within two years.

Dry period revisited

University of Wisconsin research shows that cows with shortened or eliminated dry periods have earlier postpartum ovulation and possibly improved reproduction.

Scientists divided 58 cows into three groups: traditional dry period for 56 days with low then moderate energy diets, shortened dry period of 28 days with moderate energy diet, and zero days dry on high energy diet.

Cows with no dry period ovulated two weeks before cows in the traditional dry group and a week sooner than cows with the shortened dry period. Days to first AI were shorter for the cows with no dry period and first service conception rate was greater. Days open in pregnant cows were fewer, too.

Cows in the traditional and shortened dry cow groups ended up with similar milk yield—91 lb. to 93 lb./day. But cows freshening with no dry period gave about 12 lb./day less compared to these two groups. Non-esterified fatty acid levels in the traditional and shortened dry period groups were similar postpartum and higher than in the no dry period group.

Not PG costs \$800 million annually

After running a computer simulation to estimate the economic loss with long calving intervals, scientists at Oregon State University and Virginia Tech learned that previous reports have underestimated the cost. The annual loss exceeds \$800 million when the calving interval is long.

Using a 10-year average milk price of \$13.23/cwt., researchers figured the income loss for a typical herd for each day open beyond 85 days in milk. Cows at 100 and 115 days open lose 42¢/day. At 130 days open, per-cow loss jumps to \$1.14. Cows open 145 days lose nearly \$2/day. And cows open 175 days lose nearly \$5/day. Reduced income was based on lower milk revenue and increased replacement expense.