

compared to oral calcium.

The study, discussed in a recent *California Dairy Newsletter*, was conducted to better determine which route of administration had the most positive effect in preventing postpartum subclinical hypocalcemia. Cows were given anionic salts in close-up diets and were assigned to control (receiving no calcium), IV calcium (Ca-IV; 500 ml of 23 percent Ca gluconate) or oral calcium (Ca-Oral; two Ca boluses 12 hours apart) groups.

Blood calcium levels in cows given IV treat-



ments spiked immediately after treatment for the quickest short-term improvement in blood calcium. However, blood calcium levels were considerably lower in IV-treated cows 20 hours postadministration than oral and control cows. Lactating animals in those two groups held more consistent blood calcium levels through the 48 hours postpartum.

ADJUST WEANING AGE WITH AUTOMATED FEEDERS

As calves begin their transition from milk to grain diets, weaning age and method can impact body weight gain. Evidence has shown that higher body weights at the time of weaning can correlate to elevated first-lactation milk yields. Three weaning strategies were examined in a recent University of British Columbia study, published in the *Journal of Dairy Science* in May, to see if using automated calf feeders to wean 56 Holstein heifer calves affected weight gain and appetite.

Calves were separated into three categories: early-weaned calves (6 to 8 weeks), late-weaned calves (12 to 13 weeks), and calves weaned by starter intake.

The study found that calves weaned by the amount of starter they ate went off milk on average 13 days sooner than the late-weaning group and had comparable weight gains through weaning. Meanwhile, early-weaned calves displayed the smallest body weight gains and were most likely to exhibit behaviors indicative of hunger.

This study showed reducing weaning age by using starter intake indicators offered economic benefits if the cost of feeding milk exceeded the price of feeding starter. Researchers suggested automated calf feeders' ability to wean by starter intake means farmers may more easily tailor feeding programs to each individual calf.

GETTING THE MOST OUT OF YOUR TUNNEL VENTILATION SYSTEM

Inlet size can have a much larger impact on tunnel ventilation success than some may think. Designed correctly, tunnel ventilation systems can help keep cows comfortable during both hot and cold weather.

Correct inlet size determines air exchange rate, operating static pressure, and the air speed within tunnel ventilation systems. Proper placement contributes to the distribution of fresh air in the animal space. Incorrect size and placement can result in short circuiting of air, dead spots, higher energy consumption, and inadequate air exchange.

Penn State's Dan McFarland recommends end

wall inlets have 2 square feet of inlet area per 1,000 cubic feet per minute (cfm) of fan capacity.

Sidewall inlets are a different story as they send incoming air toward the middle of the animal space, which can create dead spots. Approximately 3.5 square feet per 1,000 cfm — divided by both sides — is recommended for sidewall inlets. If uniform inlets across the width of the barn are not feasible, the openings should be aligned with the stall rows and feed alleys.

McFarland says producers should avoid smaller inlets that force fans to work harder, consuming more energy and eating into profits.

needs, even at these current prices

—Rick Kment, DTN Dairy Analyst

THE WEATHER BEFORE SILK EMERGENCE MATTERS

Harvest timing is the most important factor to analyze when discussing corn silage quality. Harvesting at the proper moisture range (32 percent to 35 percent DM) helps optimize energy content and whole-plant digestibility as well as packing density, which affects fermentation and dry matter losses.

Wet weather before silk emergence can result in higher yield but at the cost of fiber digestibility. Dry weather before silk emergence, on the contrary, typically results in improved fiber digestibility but lower overall yield.

A study conducted in Michigan concluded that the same hybrid grown in the same location could vary in digestibility by up to 6.5 percentage points depending on yearly rainfall differences. The growing environment, such as soil and weather conditions, typically has a greater impact on corn silage quality than hybrid selection.

METHIONINE MAY IMPROVE EMBRYO SURVIVAL RATE

Research conducted at the University of Illinois showed that adding methionine to the diets of Holstein cows improved the survival rate of preimplantation embryos. Cattle were given methionine, an essential amino acid, during the prepartum and postpartum periods. Half of the embryos collected from cattle fed methionine exhibited a higher concentration of lipid droplets. University of Illinois' Phil Cardoso believes this may provide the embryos with more energy stores and improve survival rates.

In another study performed at the University of Wisconsin, embryos from cows fed methionine had less cases of embryonic death. Data concluded that embryonic death dropped from 19 percent to 6 percent in cattle fed methionine.