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AGR 101



THIRD CLASS  
BULK RATE

## Research in progress

### More Milkings, More Milk

Milking cows three times a day (3X) instead of twice (2X) may increase milk and fat production.

Research by University of California scientists C.L. Pelissier, L.J. Koong, and L.F. Bennett showed that 3X milking increased milk and fat production by 16.6 percent, from an average of 62.8 pounds a day for 2X animals to 73.2 pounds a day for 3X animals with similar previous production records. The daily fat production average went up 0.36 pounds (to 2.53 pounds). The research also showed that milk and fat production response to 3X milking increased with the month of lactation.

Because of certain built-in biases, the results are not conclusive, but the work may be helpful in the design of further research, according to the researchers.

### Rose Diseases

Studying the control of rose diseases with virus or virus-like symptoms, U.C. Davis plant pathologist G. Nyland discovered a new rose disease formerly called rose X-disease, and named it rose ring pattern. The cause of the infectious disease remains a mystery in spite of major studies on its symptoms, incidence, distribution, and host range. The only known means of transmission is by grafting.

The cause of rose leaf curl—a disease similar to rose wilt—is also still unknown. However, Nyland was able to supplement

known information with studies on the occurrence, distribution, and anatomy of the rose disease.

Nyland is studying still another virus-like rose disease of unknown cause—rose spring dwarf—with the use of electron microscopy, extraction and characterization of nucleic acids, reaction to antibiotics, and transmission characteristics.

A quick reliable assay method using gel electrophoresis shows promise of reliably distinguishing between healthy roses and those affected by the above diseases and rose mosaic.

Nyland has found that control of rose virus and virus-like diseases can be accomplished by a clean stock program, unidirectional flow and maintenance of stock identity.

### Hawks Reject Hot Dogs

Hawks don't like hot dogs, even when the hot dogs are covered with feathers. A study at the Raptor Research Center at the University of California at Davis found that fur or feathers are important signals for food recognition and acceptability to Red-tail hawks, but it's what's inside that really counts.

Adult Red-tail hawks, accustomed to eating day-old chick carcasses, were offered chicken hot dogs for a period of seven days but exhibited no curiosity toward or acceptance of this food. When the hot dogs were disguised by being covered with chick skins, the hawks reacted positively, but upon

touching or tearing off the skins, rejected the meat.

When breast chicken meat was offered to the hawks, they did not immediately accept it; however, after seven days all of them except one ate the chicken.

The hawks readily accepted mice, but, as measured by food intake, preferred day-old chick.

Research on the birds of prey is conducted because of the hawks' importance to agriculture as biological control agents for rats, mice, and birds such as starlings.

### Calf Removal Hastens Estrus

Removing calves from their mothers for a brief time at the beginning of the breeding season shortens the interval between calving and first postpartum estrus and raises the percentage of cows coming into estrus.

Research by University of California reproductive physiologist John Lesmeister and staff research associate Dan Drake showed that removing calves from their mothers for 48 hours immediately before a 21-day breeding period doubled the percentage of cows showing estrus 11 days into the breeding period. More of the cows that had their calves removed also came into estrus during the breeding period: 87.5 percent, compared with 77.4 percent for cows that did not have their calves removed.

Potential significance: more early pregnancies, a shorter calving season, older and heavier calves at weaning, and greater productivity from the cow herd.