

MSU researcher determining healthier way to raise COWS

by Kit Almy

On Thursday evening, Feb. 10, I followed Pat Mitchell, a recent MSU grad with a bachelor's degree in animal science, as he walked through the cold freestall barn, checking on the activities of 62 cows. My visit was brief, but for Mitchell and MSU animal science Professor Dr. Andy Skidmore, the night was still young; observations were repeated every 20 minutes until the following afternoon.

This was the third of four 24-hour watches in research on the practice of restraining cows in self-locking headgates. Skidmore and Mitchell, his assistant, hope to determine what effect such restraint is to cows in terms of their well-being and productivity.

I was a little nervous because the large animals seemed apt to suddenly breathe on me, lick me, or possibly step on me, but Mitchell and a volunteer from the Hastings Extension office he was training to assist with the watch moved through the herd with ease. They quickly recorded each cow's number and the code letters for her current activity, posture, and location (i.e. lying sternally on her right side near the water fountain).

Although this training round took the full 20 minutes, Mitchell said, "Once you get the hang of it, you can really fly." Given the temperature and the monotony of the task, speed is definitely a plus. He said he can check on all the cows in about eight minutes—leaving 12



Mitchell (l) and Skidmore look over results of the latest lockup.

minutes to rest inside and warm up before the next round.

The month-long experiment originated after Skidmore began observing aggressive bovine behavior on farms around the country where farmers locked their cows in headgates for a few hours each day. He was concerned to see cows pushing each other and fighting for access to water. "They just go crazy, and it puts tremendous pressure on the whole physical facility," he said.

He also wondered about any unobserved effects on the animals' health and well-being. After finding that no one had any answers, he decided to study the practice himself to find out.

According to the research proposal for the study, which is being conducted jointly with Purdue University, Skidmore and his associates already had some ideas about what the effects might be: "Headlocks may limit feed and water intake, resting time, milk yield, and increase metabolic problems when cows are restrained for extended periods.

Michigan State and Purdue Universities will conduct studies at their respective dairy research centers to determine the effect of an extended duration of restraint period with regard to production, disease incidence, feed intake, stress, behavior and well-being."

Many dairy farmers, especially on larger farms, use headgates to manage their herds. Headgates keep cows standing and in one place for milking, breeding and medical care. Some farmers keep cows standing after milking in order to reduce the risk of mastitis because the teats are still open and more infection-prone. Skidmore also wonders if use of the recently introduced growth hormone BST (bovine somatotropin) will lengthen lockup times at dairies.

In most cases cows are regularly locked up for about an hour, but in some cases, such as for periodic vet visits, cows may be forced to stand for several hours at a time. Mitchell noted that on one California farm cows were locked up twice daily for three hours at a stretch. Skidmore said most Michigan herds are smaller, so longer lockup times are not as common here.

The study consisted of four weeks (Jan. 22 through Feb. 18) of monitoring cows as they experienced two different daily schedules. For the first and third weeks of the experiment, the cows were allowed to roam at will in the freestall barn, the normal routine for Kellogg Dairy. On the second and final weeks, they were put in headgates after the 7 a.m. milking and restrained until the 11 a.m. release.

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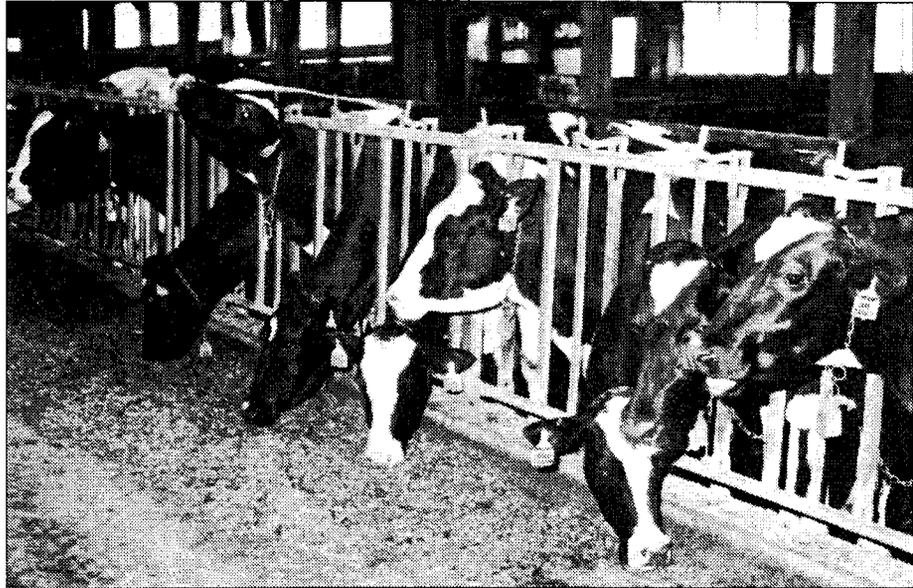
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Weekly milk samples were taken from each cow and the researchers also conducted one 24-hour watch each week to see the animals' reactions. Weekly blood samples were taken to measure the levels of the hormone cortisol to gauge stress levels in each cow.

Skidmore says the 24-hour watches help show how the lockup affects the cows' behavior. "Cows are very habitual, so you catch all their behaviors at different times of day," he said. He added that the presence of researchers in the barn every 20 minutes didn't really effect the cows. "For the most part they just ignore you."

After the blood samples have been processed at Purdue and the data has been analyzed, researchers can make recommendations for using headgates as a management tool. "At least we'll have some hard data," Skidmore said, even if there are no hard answers for farmers who want to know if they need to change their practices.

Kellogg Dairy Manager Rob Ashley has been closely involved with the study and noted certain changes in individual cows following lock-in periods. Ashley said it



"We've had enough!" bellows the third cow from the left during a recent lockup study. To the contrary, the majority of the cows continue to feed peacefully.

seemed that the cows lay down for longer periods of time after being locked up than they normally would. Also, standing for four hours augmented lameness in cows that were already lame, and "some of the very high producers seemed to take a hit in production," he said.

"I presume that the premise is that it's a bad idea to lock the cows up for a long period of time, which seems logical to me," he said. From

what he observed during the experiment, Ashley said his opinions have only been confirmed. "I would be real concerned about doing it in summer," he added, because competition for water would be even greater.

The project is being conducted in cooperation with a North Central Regional Research Project entitled *Dairy Cattle Management Strategies for Improved Decision Making and Profitability*.



1993 Michigan trumpeter swan production rates quadruple

Michigan's wild trumpeter swan population increased greatly in 1993, when (as of Sept. 1) eight pairs fledged 15 cygnets. The happy couples chose nesting sites from as far south as Cass County to as far north as the Seney National Wildlife Refuge in the upper peninsula's Schoolcraft County.

This brings the current known trumpeter total to 98 birds, including three yearlings from the 1992 nesting season.

The four pairs at Seney hatched 16 cygnets, but only four survived, due to unknown reasons. Biologists suspect predators and black flies as the culprits.

The first restoration program participants to successfully nest, fledged two cygnets this year, joining their one-year old sibling and parents on a Cass County marsh.

Locally, a couple nested and fledged one cygnet at the Fort Custer Recreational area in eastern Kalamazoo County. Five of the six trumpeters released at Fort Custer in 1990 are known to have survived four years in the wild, although three were missing during half that period.

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