Cows And 'Eggs' Open Gates Of Research At Beltsville ARS

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BELTSVILLE, Md. — Like many cows here at the 7,000-acre USDA Agricultural Research Service (ARS) dairy research program, a cow like number 9654 may have to wear what scientists affectionately call "the egg."

Simply put, the egg is a low-frequency radio transmitter worn around the cow's neck that is synchronized with a locking mechanism on a head gate. The egg allows only that particular gate to open and close.

The scientists here aren't testing cow feeding behavior — at least not yet. The egg is one way to examine, however, how a cow reaches for feed and why it would prefer one gate locking area to another.

By the way — cow 9654, a Holstein, milks 140 pounds a day and is the herd's high producer, according to Duane Taylor, herdsman/supervisor at the USDA research farm in Beltsville.

Members of the Solanco Young Farmers toured the dairy Tuesday this week to learn more about agricultural research under way at the ARS site, home to more than 400 buildings and research into environmental conservation, human nutrition, experiments in plant and animal genetics, and other applied research.

According to Taylor, there are 135 cows on test from a herd that is half grade and half registered Holstein, with about the same number of replacements. On Provo DHIA, milk herd average is 22,000 pounds.

The dairy, which markets its milk to Land O'Lakes through a cooperative agreement with the University of Maryland, makes use of a single-mix TMR consisting of corn silage, alfalfa silage, orchardgrass, cottonseed, alfalfa hay, and concentrate with bypass protein. Cows average 70 pounds of milk per day.

The cows are housed in two curtain-sided structures, first designed in 1979 and completed in 1993. One structure is insulated and another noninsulated. The cows are situated on mattresses with a polypropylene cloth cover that uses ground rubber material as padding. The mattresses are covered with sawdust.

There are 10 employees working two shifts. Milking is at 6 a.m. and 6 p.m.

An interesting area is how feed is testing on the animals.

There are seventy tubes that can hold from 65-70 kilograms (about 120-130 pounds) of feed material. In studies, cows are fed either orchardgrass or alfalfa, or any combination of feeds. With the new electronic feed systems, feed will be matched to individual cow requirements.

An interesting note, according to Taylor, is that orchardgrass is less expensive than alfalfa to grow. The dairy's orchardgrass tested 22 percent for crude protein on a dry matter basis.

An alley scraper at the ends of the cement-floor freestall unit pushes the manure to a holding area at the end of the barn, where it flows to a main receptor pit. From there, a separator takes the liquids out, which go to a biogas digester.

Interestingly, none of the methane from the digester is stored or converted to energy. It is simply allowed to dissipate. The solids are sent to a windrow composting operation nearby.

The dairy is just one of the research areas seen by the tour group Tuesday. The site also is home to beef cattle, including Herefords, Angus, and Charolais as part of on-site test programs.

The Beltsville ARS site has an annual budget of $229 million.

In addition, some of the other areas of research at Beltsville

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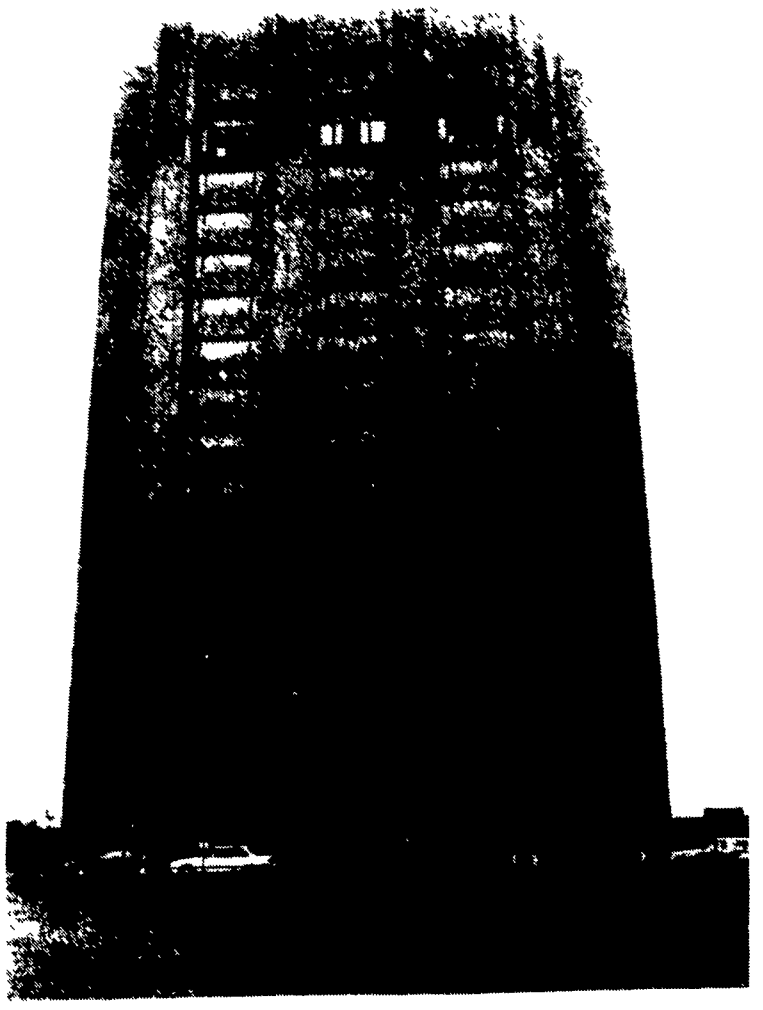
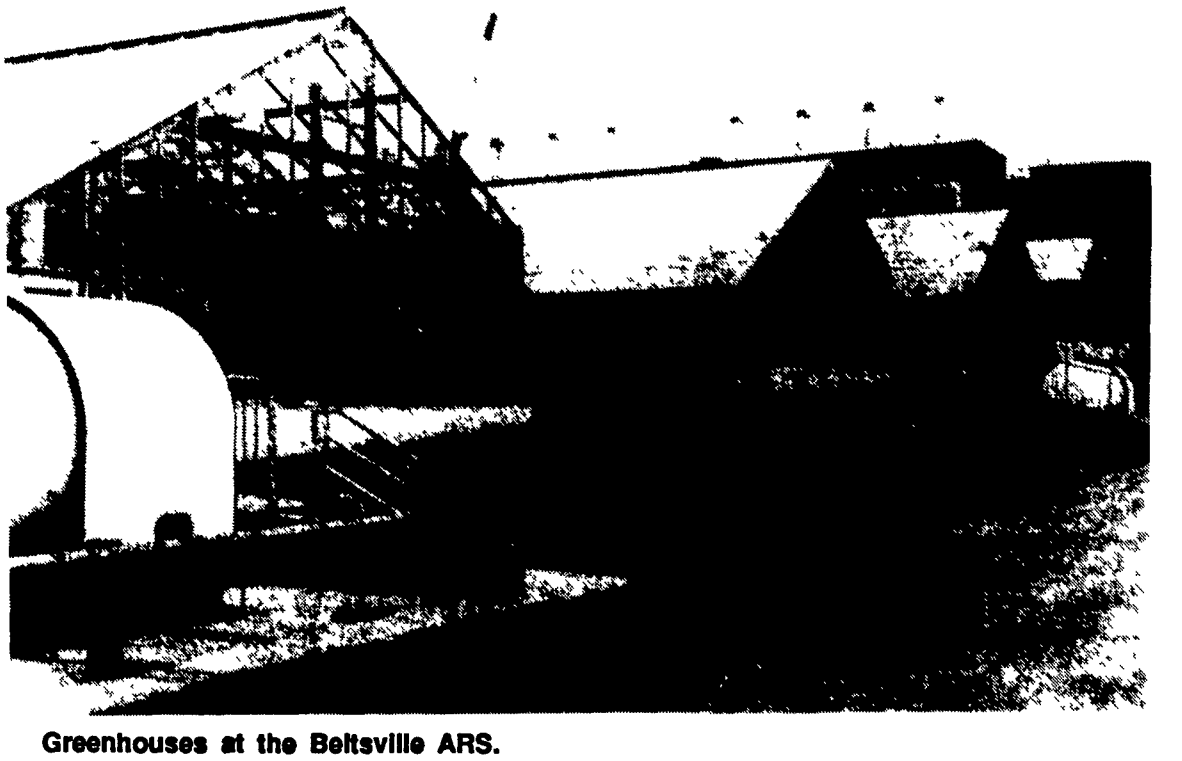
The Beltsville dairy farm is home to about 135 cows on test.

Turfgrass studies, along with alfalfa and soybean research, are under way. Here, the tour group examines the flats in the greenhouses.

The Beltsville ARS dairy barn is home to about 135 registered and grade Holstein. The cows are comfortable on rubber mattresses and sawdust bedding.



Beltsville Agricultural Research Center (or BARC) is the home of the National Agricultural Library, housed in a 15-story building. The library contains a 2-million-volume collection of printed materials on agriculture and related sciences. Anybody with access to the Internet can make a request for information to the library about any agricultural subject and receive a response via email.



Greenhouses at the Beltsville ARS.