Plan To Relieve Heat Stress On Cows

UNIVERSITY PARK (Centre Co.) — Dairy farmers shouldn't let the cool spring fool them — summer heat will be here soon.

They should plan now, according to an expert in Penn State's College of Agricultural Sciences, to provide their cows with relief from heat stress.

The highest-producing cows are the ones most vulnerable to the damaging effects of heat stress, warns Dennis Buffington, professor of agricultural and biological engineering.

Milk production decreases as heat stress increases. He points out that even greater economic loss results from the reduction in cows' conception rates as heat stress rises.

"First and foremost, the cows need to be protected from direct solar radiation," he says. "The shading system must be designed so that the animals have full access to quality feed and water while in the shade.

Sufficient floor space needs to be provided under the shade structure so that the animals do not crowd together to stay in the shade.

"The underside of the roof needs to include insulation material to reduce the thermal radiation load on the cows. Finally the shade structure needs to be high enough and include a ridge opening so that natural ventilation will be enhanced."

Evaporative cooling systems to reduce heat stress levels on cows are common in the southern United States, but few are used by Pennsylvania dairy farmers, according to Buffington.

He anticipates that evaporative cooling systems will become more popular in Pennsylvania as production levels of cows increase and as producers search for effective ways to reduce heat stress.

The evaporation of just one gallon of water per hour at 85 degrees provides nearly the same cooling effect as a ¾ ton air conditioner unit.

"This amount of cooling can handle the heat produced by, on average, two lactating cows," he says. "The actual amount of water that can be evaporated depends on the humidity level of the air."

Different approaches to providing evaporative cooling for dairy cows have been used over the past several decades. Buffington believes the use of a sprinkler or misting system in conjunction with forced ventilation is most effective.

"It is not sufficient simply to cool the air with evaporative cooling and hope to significantly reduce the damaging heat stress effects on the cows," he says.

"It is essential to wet the cows and to provide forced ventilation to speed up the rate of evaporation," he adds.

"The direct wetting of the cows cools them only a limited amount — it is the rapid evaporation of the water that really does the cooling. The need for rapid evaporation is why it is essential to use fans in conjunction with sprinklers or misters.

"Natural ventilation is not sufficient, at least in the climates of the Northeast, to provide the quick evaporation."

During heat stressing conditions, cows must be wetted intermittently so that the water can evaporate from the surface of the cows. Effective evaporative cooling systems generally provide a spray of water for about a minute every three or four minutes with the fans running continuously.

An evaporative cooling system should be developed with enough flexibility so that the wetting durations and intervals can be easily modified in the field.

The water spray should be directed onto the back and sides of each cow, Buffington explains. "Ideally, all the water should evaporate on the back and sides of a cow so that none of the sprinkler water comes down to the udder because of the danger of contaminating the teat openings with bacteria from the hide," he says.

"It also is important to keep the floor surfaces and bedding materials dry."

Buffington contends that investments in effective systems to relieve heat stress for dairy cows will pay dividends in increased cow comfort, milk production and conception efficiency.

"As the production levels of dairy cows increase, they become more vulnerable to heat stress," he says. "Therefore, it behooves dairy farmers to utilize evaporative cooling systems to reduce the effects of heat stress on their animals."

USDA Appoints Milk Promoters

Appointees Are From Calif., Neb., Ohio, Tenn., and Texas

WASHINGTON, D.C. - USDA Secretary Ann M. Veneman recently announced the appointment of six incumbents and one new member to the National Fluid Milk Processor Promotion Board.

Reappointed to serve a second term are James W. Turner, Memphis, Tenn. (Region 9); Richard Walrack, City of Industry, Calif. (Region 15); and Robert E. Baker, Omaha, Neb. (at-large public).

Appointed to serve their first full term after filling a vacancy lasting less than 18 months are: Michael F. Nosewicz, Cincinnati, Ohio (Region 3); William R. McCabe, Orrville, Ohio (Region 6); and Lawrence V. Jackson, Pleasanton, Calif. (Region 12).

Newly appointed to serve her first term is Susan D. Meadows, Dallas, Texas (At-Large Processor).

The appointments expire June 30, 2006.

The National Fluid Milk Processor Promotion Board is composed of 15 fluid milk processors from 15 geographic regions, and five at-large members. At least three at-large members must be fluid milk processors and at least one must be from the general public. The board was established by the Fluid Milk Promotion Act of 1990 to develop and administer a coordinated program of advertising and promotion to increase the demand for fluid milk products.

The national fluid milk program is financed by a mandatory 20-cent per hundredweight assessment on all fluid milk processed and marketed commercially in consumer-type packages in the contiguous 48 states and the District of Columbia. Processors who commercially process and market 3,000,000 pounds or less per month, excluding those fluid milk products delivered to the consumer residences, are exempt from the assessment.

USDA's Agricultural Marketing Service monitors the operations of the board. More information is at http://www.ams.usda.gov/dairy/dairyrp.htm.

Penn State Study Links Land Use, Property Values

UNIVERSITY PARK (State College) — Agriculture and other land uses that provide open space increase the value of houses located within a quarter-mile radius, while landfills and large-scale animal operations lower the value of nearby houses, according to a new study by researchers in Penn State's College of Agricultural Sciences.

The study, summarized in the report "The Impact of Open Space and Potential Local Disamenities on Residential Property Values in Berks County, Pennsylvania," was authored by Richard Ready, assistant professor of agricultural and environmental economics, and Charles Abdalla, associate professor of agricultural and environmental economics.

The researchers collected sales prices and other information on more than 8,000 Berks County homes sold between 1998 and 2002, along with information on nearby land uses. A geographic information system and statistical tools were used to analyze the data.

"This kind of information can be used by local officials to evaluate the consequences of planning and zoning decisions and efforts to preserve open space in their communities," says Ready.

"Undoubtedly, there will be interest in applying the Berks County results elsewhere," Abdalla says. "But until more research is conducted in areas with conditions that differ from Berks County, care should be used in trying to generalize these results."

The study found that open space — including forested acreage and grass, pasture and crop land — located within a quarter-mile of a house had the largest positive effect on the value of that house.

Large-lot, single-family residential land had a positive effect almost as large. Commercial, small-lot single-family residential, multi-unit residential, and industrial land uses were less favorable for nearby property values.

Ready says these results can be used to predict the effect of land-use change on nearby residential property values.

"For instance, if a 10-acre farm is replaced by a shopping center, we would expect property values of homes located within one-quarter mile to decrease by 1.3 percent," he explains.

"Construction of a high-density or multi-unit residential development on that farmland would have an even greater negative impact — about two percent. But construction of large-lot, single family houses would have essentially no impact on nearby home values."

For land uses farther than a quarter-mile but less than a mile away, commercial land had the greatest positive impact on a home's value, followed closely by large-lot, single-family residential.

The researchers found that landfills and large-scale animal operations have negative influences on nearby house prices.

The study did not find a property value impact for sewage treatment plants.

Reports are available on the Web at http://www.landuse.aers.psu.edu/.

Making No-Till Work With Dairy Manure Systems

ROBESONIA (Berks Co.) — A field meeting to show the compatibility of dairy manure and no-till systems is set for June 18 at 10:30 a.m. to noon.

The meeting will take place at Hiddenview Holsteins, Robesonia.

Dr. Sjoerd Duiker, Department of Crop and Soils, Penn State University, and Mr. Joel Myers, NRCS, will be on hand for the field walk.

Directions to Hiddenview Holsteins:

From Rt. 422, go north on the Bernville-Robesonia Road. Turn right onto Brownsville Road. Go tow miles. Sign for Hiddenview Holsteins in on the right side. Mailbox is 1700 Brownsville Road.

For more information, contact Berks County Cooperative Extension at (610) 378-1327.

PFB Applauds Over-Order Premium Decision

CAMP HILL — (Cumberland Co.) — Guy Donaldson, Pennsylvania Farm Bureau (PFB) president,praised the Pennsylvania Milk Marketing Board's (PMMB's) recent decision to raise the over-order premium for Class I (fluid) milk for the remainder of the year to $1.65 per hundred pounds of milk.

"The long-term economic viability of the Pennsylvania dairy industry continues to be challenged by this prolonged period of low milk prices," said Donaldson"Pennsylvania Farm Bureau appreciates the board taking this positive action to help increase prices paid to dairy farmers in an effort to stabilize the dwindling milk supply within the state that threatens the industry,"

PFB's dairy specialist Joel Rotz said the PMMB decision was "the right decision considering the needs of producers, who have been experiencing extremely low prices for too long."

Web-Based Marketing Program Upcoming

KUTZTOWN (Berks Co.) — A twilight program on developing farm marketing using the World Wide Web will take place June 18 from 6:30 to 8:30 p.m. at the Rodale Institute, Kutztown.

The Rodale Institute has been working with a number of organic farmers to develop Web based marketing and the program will be shared as part of the "Organic Agriculture in Southeast Pa." series, organized through Penn State Cooperative Extension. Also, field trials will be viewed. The trials include work with cover crops, compost tea treatments for disease suppression and developing a no-till organic cropping system.

Participants are asked to meet in the parking lot. The program will take place rain or shine. There is no charge and no registration required. Directions to the Rodale Institute can be found at http://www.rodaleinstitute.org.

Future meetings in the series will be conducted on an organic vegetable farm and a circle discussion about new markets and new crops. For more information, call (610) 378-1327.