



Penn State Cooperative Extension Capitol Region Dairy Team

**REDUCING HEAT
STRESS IN
DAIRY CATTLE
— PART TWO**
Glenn A. Shirk
Extension Dairy Agent
Lancaster

Earlier articles focused on how heat stress affects cattle, and the use of shade and exhaust fans to help protect cows from heat stress. This article focuses on the use of circulation fans evaporative cooling and some other ideas for protecting cattle from heat stress.

Circulation fans can be installed over bunk areas and over rows of stalls. This method does not exchange air as effectively as exhaust fans, but it does take advantage of some natural ventilation, and the barn is still ventilated if the fans should fail.

How many fans are needed? One fan will "service" a distance of about 10 times its diameter. In other words, four feet. Fans should be spaced about 40 feet apart (about 10 stalls) and angled downward toward the stalls.

Evaporative cooling can help lower air temperatures when the humidity is low enough for evaporation to occur. Otherwise, it can raise humidity levels and cause animal discomfort. The idea is to introduce a very fine mist into the air stream, or to draw air through an evaporation pad or a radiator-like heat exchanger to cool the incoming air.

Another method is to wet the cow and use fans to evaporate moisture from her body (the same effect you feel when get out of the water and stand in a breeze). Cows can be sprinkled at

the feed bunk, with a low-pressure nozzle that delivers about 0.5 gallons of water per minute as coarse droplets for 3-5 minutes at about 15-minute intervals. The idea is to soak cows to the hide while they are at the bunk and cool them off in the breeze of the fans when they return to the stall area to rest.

Other helpful ideas include:

- Minimize the time cows stand in holding areas.
- Do not crowd cows. Give them plenty of bunk space and watering space.
- Minimize their exertion and excitement. Don't make them walk great distances to feed and water, and keep them quiet before and after breeding and at calving time.

Feeds dry out faster with increased air movement and spoil more quickly when temperatures rise. These problems can be minimized by mixing feeds more frequently to help keep them fresher, by feeding more frequently, by keeping mangers and watering devices clean, and by increasing the moisture content of the ration.

Feed cows a more nutrient-dense ration, while also being sure to meet their fiber requirements. Increase mineral intakes to replenish what cows lost because of increased sweating, slobbering, and urination. Feeding more buffers, niacin, and products such as *aspergillus oryzae* may also be helpful. In all these matters, observe cows closely and work closely with your nutritionist and veterinarian.

Report To Guide Childhood Ag Injury Prevention Efforts

MARSHFIELD, Wis. — Would you take your child to work at a mine or construction site?

Of course not. Yet children routinely are exposed to dangerous situations in production agriculture, where the line between home and worksite has traditionally been blurred.

A report designed to guide national childhood agricultural injury prevention efforts has been published by the National Children's Center for Rural and Agricultural Health and Safety.

"We hope this report inspires and motivates people to meet the challenge of protecting the nearly two million children who live, visit and work on our nation's farms and ranches," said Barbara Lee, Ph.D., director of the National Children's Center, Marshfield Clinic, Marshfield, Wis.

The report is an outgrowth of the 2001 Summit on Childhood Agricultural Injury Prevention, a federally-funded initiative that brought together nearly 100 farmers, growers, professors, physicians, adolescents, and safety professionals, along with representatives of agricultural organizations and federal agencies. These attendees used consensus development to generate injury prevention strategies and priori-

ties for the future.

The need for the summit report is underscored by the more than 100 deaths and about 33,000 restricted-activity injuries that occur to youth on farms each year, Lee said.

Goals and recommendations include:

- Adults will ensure that young children and nonworking youth can grow, play, learn, and rest in protective environments that are free of agricultural hazards.
- Young workers will receive agricultural safety training, guidance, personal protective equipment, and adult supervision based on child development principals.

• A strong public/private infrastructure will be maintained to ensure the vision, leadership, and national commitment necessary to prevent childhood agricultural injuries.

The summit report can be viewed and downloaded in .pdf format by going to <http://research.marshfieldclinic.org/children>.

Printed copies are available by contacting the National Children's Center for Rural and Agricultural Health and Safety at (888) 924-7233 or (715) 389-4999, or by e-mailing nccrahs@mfldclinic.edu.

The Dairy Farm Business Summary: What Is It And What Can It Do For You?

Sarah Roth
Penn State Dairy Alliance
UNIVERSITY PARK (Centre Co) — What is the Dairy Farm Business Summary?

The Dairy Farm Business Summary (DFBS) is an analytical program designed to allow producers to improve accounting and financial analysis techniques, develop managerial skills, and solve business and financial management problems.

This is accomplished through gathering the information necessary to complete the analysis and then comparing their farm's performance with top performing businesses in Pennsylvania and the Northeast. The information required to complete the DFBS includes: Cash receipts and expenses, accounts payable and receivable, beginning and year-end balance sheets, land resources and use, depreciation information, feed and supply inventory, livestock inventory, and machinery and equipment inventory.

How can the DFBS help you?

The Dairy Farm Business Summary provides an excellent opportunity to work with a computer-based program that will assist in better data utilization and interpretation, increasing the soundness of management decisions. After completing the re-

quired input information, a comprehensive report is generated which includes: profitability, liquidity, solvency, labor and capital efficiency, and dairy and cropping enterprise analyses.

From the report, producers can answer the following questions: What are the effects of key expenses, production levels, and price risk on the profitability of the farm business? Is production being maximized while controlling expenses? Does the business generate adequate returns to the resources allocated to it? Are accounts payable and debt payments creating a cash flow burden?

The greatest benefit is having the ability to see what actual business and production costs are, thus allowing for tighter cost control and better management decisions, and achieving greater control over the finances of the dairy business.

In addition, producers have access to standardized benchmarks for dairy businesses throughout Pennsylvania and the Northeast. By participating in the DFBS programs, producers' data will be entered into the Top Dairies database. This allows the producer to benchmark their farm's performance against the performance of dairy businesses across the country.

Top Dairies also allows the producer to specify the types and sizes of farms he or she would like to benchmark against, making the information all the more valuable to the producer.

Dairy advisors and extension agents also benefit from the program. Special reports can be generated for a group of clients, county(s), or regions — provided that data for the minimum number of farms are available.

Completing the DFBS can be an educational experience and provides a launch pad for discussion within groups of producers who meet regularly or those who wish to form a group. Without sharing sensitive information, important issues such as efficiency and specialization and their effect on profitability can be discussed.

How can you participate?

Becoming involved with the Dairy Farm Business Summary is simple. Producers and extension agents can contact Sarah Roth at Penn State University. The phone number is (814) 863-8645 or email at sarahroth@psu.edu. To learn more about the program visit Penn State's Farm Management website at <http://farmmanagement.aers.psu.edu> and click on the "Dairy Farm Business Summary" link.

Soggy Fields May Promote Diseases

WOOSTER, Ohio — Excessive wet weather throughout Ohio the past several weeks may cause problems with disease development in the state's wheat crop.

Pat Lipps, an Ohio State University Extension plant pathologist with the Ohio Agricultural Research and Development Center, said that growers should be scouting their fields for such diseases as powdery mildew, *Stagonospora* leaf blotch and head scab.

"*Stagonospora* leaf blotch is being favored by frequent rain showers. We are not seeing too much of it yet because its been a bit too cool, but we are setting the stage for some major problems with continued rain," said Lipps. "The other disease is head scab and the rains have provided saturated conditions for this fungus to produce spores on old corn residue. Whenever there are high levels of the fungus in the field, there is always the possibility of having head scab in the wheat if it's in close proximity to the corn residue."

Lipps said powdery mildew, which was noticed earlier in the season, is beginning to advance in some fields and a return to

warmer weather will favor its continued spread.

"Scouting is probably the first thing growers should do right now. Over the next week, we'll probably start seeing some *Stagonospora* develop on the upper leaves of the plant," said Lipps. "About two weeks after heading, growers should check their fields again because that's when head scab will probably be seen."

Wheat growth has been variable throughout the state. The crop in southern counties is in full bloom. Throughout central Ohio, wheat heads are beginning to emerge and in northern Ohio, the crop is currently at the boot stage with head emergence likely to begin at any time. The crop throughout the extreme northwest corner of the state is the least developed, ranging anywhere from flag leaf emergence to the boot stage.

"The crop normally goes into head in Ohio right before Memorial Day weekend. This year we are a little bit ahead of that schedule," said Lipps. "What we'd like to see is the wheat head out as soon as possible and then have a cool period through the flowering and grain filling time.

This would provide us with extra days of grain filling which we can take advantage of, and is essential to adding more bushels to the yield."

In addition to disease development, Lipps said saturated soils have produced some nitrogen deficiency in the crop. "We are starting to see some yellow areas in the fields," he said. "Wheat rapidly takes up nitrogen between jointing and head emergence and this is the period when we were getting all the rain."

Unseasonably cool temperatures are also hitting the wheat crop. Those plants with newly emerged heads are most vulnerable to freezing injury when temperatures drop below 30 degrees Fahrenheit.

Lipps said signs of freezing injury — damaged florets and shriveled tissue — can be seen several days after damage has occurred. "Yield loss will be minimal if only the top florets of the head are injured. Otherwise, if entire heads are affected, the loss may be proportional to the number of heads killed," he said.

Lipps added that a forecasted rise in temperatures should rapidly advance wheat growth throughout the state.

How big is big?

Wal-Mart becomes the largest company, according to Forbes Magazine. With about \$220 billion in sales, this should place them above the country of Austria on the economic ladder. They are already the largest retailer of food in the U.S., and growing, having recently invested a significant sum in Japan. The question remains: who will determine our food sources and their availability in the future?

It has been predicted that within 3-5 years, just four companies will control 50 percent of all the food retailed in the world: one in North America, two in Europe, and one in Asia. How's that for market clout? What will your role as a producer be?

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