Michigan Dairy Farmers Consider Water Quality Regulations, Total Maximum Daily Loads

Lorie Srivastava
and Sandra S. Batie
Dept. of Agricultural Economics

New federal water quality regulations could have significant effects on Michigan dairy farms. In the Clean Water Act of 1972, Congress specified the total maximum daily load (TMDL) process which limits pollutants entering lakes, rivers, and streams in the U.S. The TMDL process requires states to do a number of things: 1) set the maximum amount of pollution that a water body can receive without violating state-designated water quality standards (including a margin of safety to account for technical uncertainties); 2) develop a quantitative assessment of water quality problems, pollution sources, and required pollutant reductions; and 3) address all pollution sources – both point sources such as factories and municipal plants, and nonpoint sources such as runoff from agricultural lands, forests, and roads.

Water quality standards have been set by the Michigan Department of Environmental Quality (MDEQ) to protect surface waters based upon intended uses, that is, recreational, public water supply, agricultural, or industrial uses.

Although TMDLs have existed since 1972, they have only recently been implemented. Although EPA is not requiring the TMDL process to come into effect until October 2001, MDEQ already has developed Michigan’s TMDL implementation schedule (beginning in 2000, ending in 2011), and a pilot program is underway in Lake Macatawa in Ottawa County. The MDEQ has been delegated authority from EPA to implement TMDLs in Michigan.

There is much that we do not know about how the TMDL process may affect farms in Michigan. Examples of unanswered questions are: Will runoff be...
traced back to individual farms? How will reductions be divided between point and nonpoint sources? We undertook research to answer questions like these, but perhaps more importantly, because the program is still being developed, this is an opportunity to find out how dairy farmers feel about this new water quality regulation so that they can have input into its design. To this end, we conducted roundtable discussions with Michigan dairy farmers in September, 2000 to hear their views about the TMDL process and related water quality issues. We shall disseminate the results to state regulatory agencies so that they can be informed about dairy farmers’ perspectives before TMDLs are implemented in Michigan.

This article has two objectives: 1) to summarize the findings from the roundtable discussion groups and inform Michigan dairy farmers, government agencies, and others of the results; and, 2) ensure that Michigan dairy farmers are aware that although the details of the TMDL process are unknown, because it is required by federal law, it will be implemented in some fashion in Michigan.

_roundtable discussions
Six roundtable discussions were held, one in each of the six top milk producing counties in Michigan: Clinton, Sanilac, Huron, Allegan, Ottawa, and Ionia. The participants were identified with the assistance of Extension Dairy Agents. In total, 47 dairy farmers participated in these roundtable discussions, which ranged in size from 5 to 12 dairy farmers. The average number of milking cows owned by the participating farmers was 163; the smallest herd was 15 head and the largest was 1550. Each roundtable discussion began with an explanation of what TMDLs are, then focused on questions related to water quality issues, including third-party lawsuits. Participants also were asked to complete a short written survey, independently, after the discussion.

Roundtable participants expressed numerous concerns with regard to the implementation of TMDL. These concerns ranged from how these water quality regulations will affect their farm practices and profits, to how these rules will be implemented, as well as whether these efforts actually will result in improved water quality. Despite the wide range of concerns that were expressed across the roundtable discussions, two common themes emerged relating to 1) fairness, and 2) uncertainty. Both themes can be further divided into sub-themes, shown in Table 1. It should be understood that this is just a summary of the comments made. Not all participants even necessarily agreed with these comments, and some even disagreed.

Theme One: Fairness - "You want to see [the rules] be fair to everybody"
As seen in Table 1, within the fairness theme, the participating dairy farmers mentioned three issues. They felt that: 1) the Michigan dairy industry suffers from a few bad actors; 2) water quality regulations should not be arbitrary, in rule making, monitoring, nor enforcement; and, 3) agriculture alone should not bear the burden of having to ensure clean water from nonpoint sources in Michigan.

1. _The Dairy Industry Suffers from Few Bad Actors_
A common feeling expressed by the participants was that most dairy farmers are making honest and effective efforts to minimize water quality problems that may originate from their farms. But, farmers believe that there are a few bad actors in the dairy industry, including some larger dairies, whose problems are appearing in newspapers. This unwanted attention means that all dairy farmers have to deal with a tarnished image.

2. _Regulations, Monitoring, Enforcement Shouldn’t be Arbitrary_

The farmers at the roundtable discussions believed that the regulations, monitoring efforts by the regulators, and enforcement of the water quality rules should not be arbitrary. One suggestion was to use good science in the regulatory process, to help minimize politics from biasing the rule-making process. For instance, some participants were worried that the political agenda of citizens’ groups might take precedence over scientific studies in the TMDL process, and may hurt those not responsible for water quality problems.

Also, if a farm is found to be in violation of the TMDL, many of those interviewed advocated that the farmer should be told what the problem is, told how he or she can fix it, be provided with adequate technical assistance to tailor a solution to his or her farm, and be given an adequate amount of time to

<table>
<thead>
<tr>
<th>Table 1. Roundtable discussion sub-themes.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Fairness</strong></td>
</tr>
<tr>
<td>1. Problems with &quot;bad actors.&quot;</td>
</tr>
<tr>
<td>2. Arbitrariness in rule-making, monitoring efforts, and enforcement.</td>
</tr>
<tr>
<td>3. How much responsibility for nonpoint clean-up would be assigned to agriculture?</td>
</tr>
<tr>
<td><strong>2. Uncertainty</strong></td>
</tr>
<tr>
<td>1. Regulatory uncertainty.</td>
</tr>
<tr>
<td>2. Lawsuit/fine uncertainty.</td>
</tr>
</tbody>
</table>
fix the problem. Otherwise, it would be unfair to penalize the farmer.

Also, many interviewed farmers felt that whoever provides technical information, whether it be a government agency or a private consultant, should take on some legal liability responsibility, because they have advised farmers how to come into compliance.

Even if compliance is required by law, participants felt that they should receive financial assistance. One farmer said that there are a number of things he would love to do, but if Michigan wants farmers to comply, he said “[Michigan must] give us the [financial] assistance to do it.”

Participants stressed that monitoring of lakes and streams by state regulators should be fair and should reflect reality. It was suggested that water samples should not be taken during extreme storm events, and samples of every lake or stream should be taken at several places, and at different times of the year. By using this method, it is less likely that a farmer using effective manure management practices will be accused wrongly of discharging.

The interviewed farmers wanted any TMDL regulators to be knowledgeable about the agricultural industry. For these reasons, virtually all the farmers prefer that the Michigan Department of Agriculture (MDA) be the lead agency in enforcing TMDLs, because MDA is perceived as knowing agriculture, and was thought to be more likely to be respectful of farmers.

3. Others Should Share the Burden with Agriculture

The participants recognized that the dairy industry does contribute to water degradation in Michigan, but the vast majority felt it did so only to a small extent when compared with municipalities, factories, and home owners.

The participants ranked the worst contributors to surface water quality in their respective counties (Table 2). The higher the index value, the worse the entity was ranked as a polluter. Only 2 out of the 36 responding farmers felt that small (100 milking cows or less) and medium (101 – 300 milking cows) dairies should be on this list (not shown).

Sewer overflow, waste water treatment facilities, industry, and urban residents were perceived to be much larger contributors to pollution than were agricultural sources. For this reason, participants believe these contributors should help clean up Michigan’s waterways, and perhaps their share should be more than agriculture’s.

Theme Two: Uncertainty – “Nobody knows what we’re supposed to do...that’s the biggest unknown”

Table 1 shows that two sub-themes emerged from the roundtable discussions with regard to uncertainty: 1) regulatory uncertainty; and, 2) uncertainty relating to lawsuits and government fines.

1. Regulatory Uncertainty

Participating farmers wanted to know What will compliance with TMDL mean for my farm? As of now, the answer is not known because the TMDL process is just beginning in Michigan. The participants mentioned aspects of the regulatory process that they believe must be included for it to be credible. These criteria are shown in Table 3, and include such things as clear guidelines, as well as safeguards against future regulatory changes.

The Generally Accepted Agricultural and Management Practices (GAAMPs) specified under the Michigan Right-to-Farm Act could reduce some uncertainty for farmers because they specify approved manure management practices. Nevertheless, few participating farmers mentioned the GAAMPs as an existing set of voluntary guidelines that can help fix existing problems, and (or) reduce regulatory uncertainty by reducing the possibility of pollution runoff.

2. Lawsuit/Fine Uncertainty

In light of the recent lawsuit notices given by the Sierra Club against five Michigan dairies – all of whom had discharges as recorded by Michigan public agencies – it is not surprising that farmers are anxious to avoid third-party lawsuits. Most interviewed farmers were more worried about lawsuits than government fines because they believed a lawsuit could drag on and potentially put them out of business, whereas government fines typically will not. Additionally, most participants felt that the state government is more willing to work with farmers, unlike third-parties such as neighbors and citizens’ groups. Although concerned about lawsuits, few participating farmers had investigated purchasing insurance for environmental liability or clean up costs.

Paradoxically, the interviewed farmers expressed a strong desire for certainty, but wanted flexibility in the regulations. On the one hand, they wanted clear guidelines for what they must do to be in compliance and be protected.

<table>
<thead>
<tr>
<th>Source of Pollution</th>
<th>Index Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sewer overflow from urban areas into surface water bodies during storms.</td>
<td>72</td>
</tr>
<tr>
<td>2. Waste water treatment facilities.</td>
<td>42</td>
</tr>
<tr>
<td>3. Industry or manufacturing facilities.</td>
<td>40</td>
</tr>
<tr>
<td>4. Urban residents (e.g., lawn maintenance, golf courses).</td>
<td>38</td>
</tr>
<tr>
<td>5. Large dairies (301 or more milking cows).</td>
<td>16</td>
</tr>
</tbody>
</table>

*aThe higher the index value, the worse the entity was ranked as a polluter.
against lawsuits, but on the other hand, they did not want these guidelines to be mandatory (Table 3, point 3). Some participants felt that discharge permits may help, mainly with protection from lawsuits and fines, providing more certainty. In a written survey, which the participants completed at the end of the roundtable discussion, farmers were asked: “Do you think the state should issue discharge permits to dairy farms in Michigan?” Of the 30 farmers who answered, nine said yes, nine said no, and 12 were unsure. At least two farmers believed permits should be issued, but did not want them to be called “permits”.

Research and Policy

The TMDL process potentially could meet many farmers’ concerns as expressed in these roundtable discussions. Ideally, the TMDL process will focus on water quality in watersheds as well as on the multiple pollution sources (e.g. municipal, industrial, homeowners, farms). The flexibility is given by EPA to the state to design a “clean-up” strategy – one that includes credit for voluntary approaches – which could therefore be tailored to the needs of the identified source, and to the physical, cultural, and economic situation of the states’ sub-regions.

Clearly if the TMDL process is to achieve its objective, there is considerable research that needs to be undertaken to investigate existing water quality and contributions from various pollution sources. For example, are large dairies the main contributors from agriculture, as some of the roundtable participants believed? Or, do medium and small dairies have significant contributions in some watersheds? Once municipalities finish separating their street and storm water runoff pipes from sewage collection pipes, will pollution from municipalities significantly decline? If so, what will that decline mean for dairy farms and any pollution that they may generate? Is enough information available to target enforcement on the major sources of pollution, including farms, and tailor solutions to their needs?

Presumably, these research gaps will slowly be filled. Nevertheless, the farmers’ desire for fairness and certainty clearly are important criteria by which to judge TMDL state policy design, implementation, and enforcement.

Table 3: Perceived necessary criteria to reduce regulatory uncertainty.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Regulators must clearly tell farmers what is expected of them.</td>
</tr>
<tr>
<td>2.</td>
<td>Clear guidelines should be given to farmers about what they can do to comply with the TMDL process.</td>
</tr>
<tr>
<td>3.</td>
<td>These guidelines should be comprised of common sense practices, they should be affordable, and they should not be mandatory.</td>
</tr>
<tr>
<td>4.</td>
<td>Farmers want to know the penalties for a violation of the TMDL process.</td>
</tr>
<tr>
<td>5.</td>
<td>Farmers want assurance if they are in compliance with a TMDL, they will be safeguarded against future regulatory changes and local zoning requirements.</td>
</tr>
<tr>
<td>6.</td>
<td>If they have to make any necessary investments both in terms of time and money, farmers want assurance the water quality regulations will result in improved water quality outcomes.</td>
</tr>
<tr>
<td>7.</td>
<td>Farmers must not be punished for past environmental investments they have made in good faith.</td>
</tr>
<tr>
<td>8.</td>
<td>Ideally, the regulations would allow farmers to self-monitor their performance so they can clearly see the results of their management practices and make necessary changes in a timely manner.</td>
</tr>
</tbody>
</table>

References


A Final Thought on What Dairy Farmers Can Do Now - Michigan Agricultural Environmental Assurance Program

Despite the current ambiguity in the resolution of environmental management regulations, there are options available that can help farmers begin to reduce environmental risks. The newly announced voluntary Michigan Agricultural Environmental Assurance Program (MAEAP) for livestock farms can help you be proactive in reducing your potential environmental liability by helping you to fine tune your manure management practices in a self-paced, voluntary manner, with technical and financial assistance. For further information on MAEAP, call any of the following people.

1. Ray Wagester, MAEAP Program Director: 517-353-1758.
Labor Management

Making Your Dairy Farm an Appealing Place to Work

Bernie Erven
Dept. of Agricultural, Environmental, and Development Economics
Ohio State University

In tight labor markets, dairy farm employers must compete aggressively with other employers for quality employees. These quality employees are essential to the accomplishment of dairy production, financial and growth goals. The lack of quality employees can jeopardize the very future of the business.

Your challenge is to provide jobs that are attractive to people who have employment alternatives in the nonfarm labor market; i.e., do better than simply drawing from the ranks of the unemployed. Depending primarily on people looking for something temporary until a better job comes along guarantees a never-ending shortage of labor. The need is apparent to build a reputation of being an excellent place to work. Actually building that reputation is a long-term challenge that you must face with creativity, imagination and confidence.

This article outlines a variety of suggestions designed to help make dairy farms highly desirable places of employment (see Table 1). Job design, team building and employer reputation are the key ingredients. Managers are the builders. Their focus should be employees. Why should employees be pleased to work for a dairy farmer if the dairy farmer is not proud of what he or she has to offer?

Design Employee-Friendly Jobs

Capitalize on employees’ interests and the advantages they see in farm work when designing jobs. People who love animals are motivated by the opportunity to work with animals. Jobs emphasizing animals attract such people. Some people like machinery much more than animals. Some enjoy repairing machinery more than operating it. Some people like office work; others want to be outdoors.

Managers have the primary responsibility for designing jobs. They first need to take into consideration the tasks that must be accomplished for the farm to succeed. They also can take into consideration what individuals want in their jobs. Sometimes minor changes in job design can improve a job dramatically in the employee’s view; e.g., changing a calf feeder’s job to include, or not include an explanation of calf care to farm visitors. Another example is asking the employee to work closely with the veterinarian to improve calf health.

Job design cannot overcome the fact that no job is perfect. Dairy farm jobs have some disadvantages managers need to address when designing jobs. Each of the following job characteristics responds to often stated disadvantages of dairy farm work: reasonable number of work hours per day and per week, proper equipment in good repair, well lighted and ventilated work areas, training, some flexibility in scheduling work hours, and regular communication with the supervisor.

Anticipating what will help motivate employees is important in job

<table>
<thead>
<tr>
<th>Method</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop pride</td>
<td>Public shows of appreciation through newspaper ads, “employee of the month” awards, and labeled apparel show that you have pride in your business.</td>
</tr>
<tr>
<td>Communicate clearly and often</td>
<td>Staff meetings, message boards, two-way radios, performance appraisals, and annual planning help facilitate communication.</td>
</tr>
<tr>
<td>Use written job descriptions</td>
<td>Employees need to know what they have been hired to do. They also appreciate knowing what their manager and coworkers do.</td>
</tr>
<tr>
<td>Provide training</td>
<td>By willingly investing in employees, employers demonstrate their commitment to employees and a job well done.</td>
</tr>
<tr>
<td>Make the business family friendly</td>
<td>Even committed employees have family situations that can make job performance difficult -anticipate these situations and help employees manage around them.</td>
</tr>
<tr>
<td>Compensate fairly</td>
<td>Ensure that wages offered are comparable to other local businesses.</td>
</tr>
<tr>
<td>Provide exceptional non-wage benefits</td>
<td>Health insurance, paid vacation, sick leave, retirement, housing, and uniforms contribute a lot to a farm's reputation as a quality employer.</td>
</tr>
<tr>
<td>Provide extraordinary informal benefits</td>
<td>Be creative: birthday cards to employee's children, attend employee weddings, learn Spanish, ask employees to help guide non-farm visitor.</td>
</tr>
</tbody>
</table>
Emphasize team building. Teams are built through four stages: forming, storming, norming and performing. In the forming stage, farm team members break the ice with each other, become oriented to farm goals and begin to exchange ideas. The forming stage is particularly important when integrating new employees with established employees, and family members with nonfamily members. Storming is the stage of conflict, open disagreement and the surfacing of conflicting ideas. Managers face the challenge of getting disagreements out in the open for discussion and resolution. Hidden disagreements constrain trust and growth of the team.

Norming follows from resolving conflicts. Team harmony and unity arise. By this stage, the leader is clearly identified and team members’ roles are clear. By the performing stage, the team is functioning well. The team solves the farm’s problems for the good of the farm business. The team is involved in decision making.

Turnover among team members forces the team to retreat to a previous stage of development followed by rebuilding. Sometimes the retreat is all the way back to the forming stage. Clearly, a continuous rebuilding of the team negatively affects longer term employees. Thus, employee satisfaction and employee turnover are closely related. Too often, the impact of turnover on co-workers is ignored. Employees do care what happens to their valued co-workers.

Employers can improve commitment to team building by rewarding employees for their contributions to team efforts. Rewarding only individual efforts sends a strong signal to employees that the business is a collection of individuals rather than a team. Competing with co-workers replaces cooperation. An employer should not say, “We are a team” and then encourage employees to look out first for their own interests. Start by asking how the milking team is doing or how the crops team is doing. Then ask how individuals within these teams are doing.

Meshing family and nonfamily team members challenges many dairy farm managers. Building an effective team in a family business setting requires careful attention to the goals, interests and fears of people inside and outside the owners’ families. The forming, storming, norming and performing steps of team building must engage family members. Those members wanting special considerations just because they are family seriously hamper team building. Nonfamily members unwilling to accept the reality of family members’ closeness and commitment to each other, for example, also hamper team building.

Reputation Is Important

One’s reputation is highly personal. The good news is that each employer “owns” his or her reputation in the community. Being known as a good place to work immediately gives new employees pride in having been hired. The new employees speak with enthusiasm with friends about their place of employment. They start with a more positive frame of mind about their job, coworkers, supervisor and responsibilities. How can an individual dairy farmer build a positive reputation (Table 1)? The closely related question is how can an...
individual dairy farmer build a positive reputation if farms in
general in the community have the reputation as a poor place
to work?

Following is a list of guidelines from which to pick and chose
strategies, policies and practices for building a positive repu-
tation. Some guidelines for building a reputation as an em-
ployer overlap with job design and team building already dis-
cussed. The interrelationships are apparent.

Appreciate Employees
An employer and employee have an interpersonal relation-
ship. The attitude toward employees the employer brings to
the relationship can have a great impact.

Employees easily sense the extent to which their employer
likes, enjoys and appreciates them. An employer with a poor
attitude toward employees needs to examine the attitude’s
impact on his or her reputation as a place to work. Negative
attitudes can be changed over time. Both the employer and
employees will benefit.

A few bad experiences with just one or two employees can
sour one’s attitude. Step back and put the bad experiences in
the context of all employees over the last few months and years.
Think about the two or three employees you value most and
the contributions they are making to the business. Work hard
to prevent a single employee or a few employee incidents from
poisoning your attitude.

Use Written Job Descriptions
Employees like to know what they have been hired to do. As
responsibilities change, they like to have an explicit under-
standing with their supervisor. Employees also appreciate
knowing what managers do and what their coworkers do. Job
descriptions provide an excellent foundation for performance
evaluations and discussion of training needs.

Provide training for employees so that they can do well what
they have been hired to do. Few people enjoy doing what they
cannot do well. Mediocre performance because of lack of train-
ing and a supervisor’s criticism for the mediocre performance
frustrate even the most enthusiastic employee. An employer’s
willingness to make this investment in employees helps build
a positive image among employees, customers and others in
the community.

Show Trust
Show trust in employees by delegating authority and respon-
sibility to them. The delegation helps satisfy employees’ es-
teem needs. It also improves their sense of being part of a
team. A bonus from showing trust is the gain in time the man-
ager has for working on his or her most important tasks.

Catch People Doing Things Right
Catch people doing things right and say thank you. Perform-
ance appraisals that emphasize the positive help build the
reputation of the employer. Focusing on the negative by catch-
ing people doing things wrong and then correcting them causes
employees to fear or at least dread performance appraisals.
Emphasizing the negative creates an air of assumed guilt rather
than the desired air of competence and confidence.

Develop Pride
Building widespread pride in the organization is a long-term
effort. Recognition of the organization’s successes by visitors
and feature stories in the local media can help. Employee rec-
ognition outside the organization and public show of appreci-
ation also help. Attractive hats with the farm name and jack-
ets with employee names worn proudly in the community send
a message that employees are glad to be part of the farm team.

Celebrate Successes
Celebrate the farm’s successes. Teams are expected to work
together to accomplish the farm’s goals. They also should cel-
brate together when the goals are accomplished. Celebrations
express the employer’s appreciation.

Communicate Clearly and Often
Communicate clearly and often with employees. Staff meet-
ings, a daily break period including supervisors and employ-
ees, a message board, two-way radios, clear instructions, op-
portunities to ask questions, regular performance appraisals
and planning together for the coming year are just a few ex-
amples of how employers can facilitate communication.

Compensate Fairly
Fairness of compensation matters more than level of comp-
ensation in building a positive reputation as an employer.
The fairness of compensation depends on both external eq-
ity and internal equity. Dairy farm employers and their em-
ployees measure external equity by comparing on farm pay
with what employees could be earning elsewhere in the com-

munity given their abilities and experience. The comparisons
should include other dairy farm jobs plus jobs outside agri-
culture. Internal equity measures how one employee’s com-

pensation compares to that of others within the farm who are
doing work with similar value to the organization. Paying only
on the basis of how long a person has worked on the farm can
cause the most valuable employees to earn less than a long-
term average worker. See article by Dr. Barbara Dartt on page
1 of the October, 2000 issue of Michigan Dairy Review for
more information on fair compensation and benefits.

Provide Exceptional Benefits
Total compensation includes both cash wages and non-wage
benefits such as health insurance, paid vacation, paid sick leave,
retirement programs, housing and utilities, uniforms, overtime
pay and pay differentials, e.g., holidays, third shift and week-
ends. A dairy farm’s reputation as a place to work can be en-
hanced considerably by offering benefits that current and po-
tential employees consider exceptional.
Provide Informal Benefits

Dairy farm employers also can boost their reputations as employers by offering creative informal benefits and rewards. Informal rewards either have no out-of-pocket dollar cost or are low cost in terms of the employee’s total compensation. Some examples are: birthday cards sent to employees’ children; employer attending all weddings, baptisms and birthday parties to which they have been invited by an employee; taking a course in the language spoken by your non-English speaking employees; hiring a photographer to take pictures of employees’ families; personally greeting each employee each day; seeking out an employee just to say thank you; offering an employee of the year award with the recipient chosen by other employees; hiring a photographer to take pictures of employees’ families; personally greeting each employee each day; seeking out an employee just to say thank you; offering an employee of the year award with the recipient chosen by other employees; asking employees to explain to farm visitors what they do and why it is important; and giving an especially deserving employee tickets to a sold out major sporting event or concert. Only the employer’s creativity limits the potential.

One caution - pay careful attention to what employees appreciate.

Promote from Within

Promoting from within recognizes an employee’s past contribution and shows the employer’s confidence in the employee. It also sends a signal to other employees that they have career advancement opportunities without changing employers.

Make the Business Family-Friendly

Both parents employed, single parents employed, child rearing responsibilities, finding reliable child care, and emergencies caused by illness are examples of family factors causing dairy farm employee frustrations. These same factors can cause tardiness and absenteeism. The farm’s best employee does not necessarily escape family influences on performance and reliability.

Making the business family-friendly means anticipating these family-caused frustrations and pressures. More important, it means helping employees deal with their family responsibilities. Some ideas to consider: providing child care on the farm, offering emergency child care, providing a list of child care providers in the community, allowing flexible hours, job sharing, health insurance with family coverage, gifts for a newborn, preschool scholarships and scholarships for high school graduates who have been employed on the farm. Family-friendly measures increase the cost of labor. They also help attract and keep qualified employees.

Be Proud of Employees

Be proud when outstanding employees advance their careers by changing employers. Losing an outstanding employee is often disappointing. Turning the loss to an advantage is a challenge.

Summary

Each dairy farm needs quality workers who develop a commitment to the success of the farm. Farm success goes hand in hand with employee success. Losing an outstanding employee is often disappointing. Turning the loss to an advantage is a challenge.

Dr. Erven can be contacted at: erven.1@osu.edu; 614-292-6387; FAX 614-292-0078; 2120 Fyffe Road, Columbus, OH 43210.

Herd Management

Standardized Investigation of Herd Problems

Phil Durst
Extension Dairy Agent
Northeast Lower Michigan

As you look at your herd on a day-to-day basis, one of the most difficult decisions that you need to make is whether a problem is an individual cow problem, or whether it is an indication of a herd level problem. Just about anything can happen to an individual cow. And with an individual cow, you can either treat her or cull her and go on. The trick is to recognize that the cow problem you see may be an early sign of a more widespread problem - a herd level problem rather than an individual cow problem. That is a critical distinction!

When a herd level problem exists, and you keep treating individual animals, you will be in an endless cycle of treating problems that should be prevented. While you will sooner or later recognize herd problems, the sooner you make the determination, the less it likely will cost you.

Determine by Comparison

One way to determine when a problem exists is to compare a situation to something else. While a favorite comparison may be to your neighbor or everybody else the feed consultant serves (as in, “Don’t worry about it, everybody else is down on production, too!”), there are some comparisons that are worth making.
1) **Compare to “normal”**. We know when a cow is sick because we know when a cow is “normal”. That is a valid comparison. It is worth the employer’s time to teach employees what characterizes a healthy cow (how she holds her head, her eyes, her coat) and to look for animals that deviate from that. They may not know what is wrong, but they will recognize that something is wrong. For example, this also is the basis for monitoring protocols involved in taking daily body temperatures of fresh cows or newborn calves.

2) **Compare to another point in time**. Milk production is running at 75 lb per cow per day; is that good? It depends on where production has been. You may make a short-term comparison, such as milk production per cow per day after adding a new feed. Or, you may be comparing present production to production awhile ago. In the latter case, rather than comparing actual milk production, it is better to compare the 150-day standardized milk so cows are put on the same basis of days in milk.

3) **Compare to a standard**. Maybe you have had several cases of ketosis lately, but is the incidence rate high enough to warrant an investigation into your dry cow program? How many cases do you have to have before you consider it a herd problem? In the 2000 winter dairy program, *Investigating Disease on the Dairy Farm*, we used an “Action Level Guidelines” table as a standard to determine when a problem was a herd problem. Refer to Table 1 at the end of this article. It is important to have set action levels for your herd, but it is more important to know what the level of problems is in your herd. There are record forms in the *Investigating Disease* Notebook that can help you develop your own record system.

**Standardizing Your Investigation**

Herd level problems need herd level strategies, but first you need to determine the cause of the problem. To do that, you need to obtain information. Whereas we often think of treatment regimens as being standardized, consider having standard operating procedures (SOPs) for investigation. Standard operating procedures are just routines that you plan to follow when certain criteria are met (see the article on page 11 of the October, 2000 issue of Michigan Dairy Review). Here are a few ways that you can put in place SOPs to provide the information upon which to make decisions about herd problems.

**Example SOPs for Investigation**

- Determine what is responsible for mastitis in your herd. Draw a milk sample from every cow with clinical mastitis before treating her and freeze the sample. There are two courses of action you might take: either have cultures done when you accumulate 10 samples or only culture those from cows in which mastitis recurred. Either way, having the sample provides a jump-start on investigating what you may determine later is a problem.
  - Automatically do a California Mastitis Test (CMT) at the seventh milking after freshening. Then culture milk from any quarter that shows a significant CMT reaction. This will provide information about the udder health of cows at freshening. That information will be the basis for determining the need for changes at freshening time, or in dry cow treatment, in order to achieve different results.
  - Automatically re-culture any cow that was positive for *Staph. aureus* and that you have treated. Set a date, such as 1 month later for a re-culture. If she is dried-off soon after diagnosis, plan to culture her by a certain day, such as day 10, of her next lactation. This will provide you information to make a decision to re-treat, cull or take some other action.
  - Have a plan for monitoring the blood mineral (calcium and magnesium) concentrations of fresh cows if hypocalcemia is a concern. You may want to have blood drawn on a group of fresh cows and analyzed for fatty acids and ketones. Similarly, check blood concentrations of selenium and vitamin E of these animals. Because it is important to have the right sample, handled the right way and taken at the right time, it is best to work with your veterinarian and with the Michigan State University Animal Health Diagnostic Laboratory to get specific instructions. Information from the results of a group of animals would help you determine the sufficiency of practices used during the close-up dry period.
  - Standard investigative procedures may be triggered by changes. A management or personnel change may be the trigger, for example, to draw blood from the next 10 calves (3 to 7 days-old) for immunoglobulin-G (antibody) concentrations. This will provide a check on how well your goal of getting a sufficient quantity of good quality colostrum into calves is being met. This step also could be triggered by the incidence of a calf health or mortality problem.
  - Some SOPs for investigation could be used as a herd-monitoring tool. For example, if cattle are purchased on a regular basis, have bulk tank milk cultured every month to see if new species of bacteria have entered the herd.
  - It may simply be your routine to draw blood at dry-off of cows to test for Johne’s disease. This will not only provide a monitor of the incidence of Johne’s in the herd, but will give you information that you can use in deciding whether to feed that dam’s colos- trum to her calf. Understand that blood tests for Johne’s disease do not have a high level of sensitivity and that some Johne’s-positive animals may be missed, but animals that are identified as Johne’s-positive can be marked and managed differently.
  - Additional investigative SOPs may be implemented if a disease has been identified in a herd and you want to systematically identify and eliminate other positive animals. If salmonella has been identified, then maybe your SOP should be to automatically have a fecal culture on any animal with diarrhea. Or, if BVD was a problem in the past and your concern is that persistently infected animals may still be present, then blood test all heifers at breeding time.
• Animals that died for unknown reasons should be necropsied. The information gained may help prevent future deaths. Discuss with your veterinarian a plan that is practical for necropsies. It should continue until causes of death are known and control practices are implemented.

Be Systematic
Always work with your veterinarian as you develop SOPs for disease investigation. Determine how many animals will be sampled when you develop your SOPs so that you plan ahead to have enough information upon which to base your conclusions.

When submitting samples to a laboratory, provide a history of the problem. This information will not prejudice the results, but will help the scientists provide context to diagnostic results. Keep all results of testing. It will give you a basis for decisions later. Even negative results are valuable to define what is not the problem, and these results should not be considered a waste of money. Some diagnostic testing will lead you to consider other diagnostic testing.

Investigation costs money. Some producers will look at current milk prices and decide that money spent on investigations as a matter of routine is not the best investment. However, understand that the benefit you seek to gain is to prevent further loss of production or cattle. Prevention is almost always cheaper than treatment. Investigative SOPs will help you more quickly detect problems and make the changes necessary. Make investigation a budget item for your dairy.

Develop a strategy that corrects the root causes of a problem. Recognize that sometimes the problem you see today had its root in the practices that occurred weeks or even months previously. Lameness as a result of laminitis is certainly that way, but so, too, is fresh cow mastitis. Merely treating the signs will be like blowing out the trick candles on a cake; they keep relighting.

Once you have worked in partnership with your veterinarian to investigate a problem, seek input from your farm’s management team in setting a course of action to solve the problem. That is when your investigation turns into a monitoring program to evaluate your successes!

Table 1. Action level guidelines for herd health problems.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Action level*</th>
<th>Your Herd</th>
<th>Your Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mastitis:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DHIA-SCC &gt;15% of cows:</td>
<td>&gt;200,000 cell/ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Tank-SCC &gt;200,000 cell/ml</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMT score 1-3 &gt;15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New clinical &gt;2%/month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute clinical &gt;1%/year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metabolic:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Condition Score (BCS) &lt;2.5 or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk Fever &gt;2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketosis &gt;2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displaced abomasum (DA) &gt;2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-feed &gt;5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Diseases:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metritis &gt;8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained placenta (RP) &gt;3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Udder edema &gt;1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea cows &gt;2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>calves &gt;10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardware &gt;1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cystic ovaries &gt;10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lameness:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laminitis &gt;5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hairy heel warts any</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downer cows &gt;1%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Action levels are taken from the MSU Dairy Analysis Workbook as a guideline. Specific guidelines for your farm should be developed with your farm management team. < = less than; > = greater than
Financial Management

Michigan Milk Market Update: January 2001

Christopher Wolf
Dept. of Agricultural Economics

US Dairy Situation

Since reform prices took effect in January 2000 the minimum Class I (fluid) and Class II (soft product) prices have been based on the higher of Class III (cheese) or Class IV (butter/powder) prices. Class IV prices have exceeded Class III prices in every month of 2000 reaching a difference of $4.43/cwt in November (Figure 1).

This price discrepancy between Class IV and Class III is the result of several factors including the strong demand for butter. However, we normally expect these prices to equilibrate as the milk that was going to cheese, instead moves into butter production. As milk is shifted to butter production, the price of butter will decline, and the price of cheese will increase. At least part of the reason that this has not occurred significantly as of this writing is that with strong cheese demand in the past decade, new manufacturing capacity in some regions of the country has been almost exclusively cheese. In the 1980’s places such as California were criticized heavily for having butter/powder plants that existed largely to produce products to sell to the government. Now, California produces massive amounts of cheese. Manufacturing capacity is a long-term investment that is not easily changed from one form of production to another.

Michigan is in the Mideast Order, which sent an average of 48 percent of milk to Class I (fluid), 16 percent to Class II (soft products like ice cream), 29 percent to Class III (cheese) and 7 percent to Class IV (butter/powder) (Table 1). Utilization, or uses in percentage terms, of milk varies across the Orders. Orders with very high amounts of milk going to cheese production, such as the Upper Midwest Order, which includes Wisconsin (as well as the 5 counties in the Upper Peninsula that border Wisconsin), have had very low blend prices this year especially relative to the past 2 years. Orders with high butter utilization have not seen as steep a decline in blend price.

How can cheese prices be below the support price?

In recent months, not only have cheese milk (Class III) prices been dramatically below milk prices for butter/powder, but they have been below the support price of $9.80/cwt (for 3.5% fat

---

**Figure 1. Class III and IV and support prices, 2000.**

**Table 1. Total production and class utilization in the Mideast Order, 2000.**

<table>
<thead>
<tr>
<th></th>
<th>Total Production</th>
<th>Class I (%)</th>
<th>Class II (%)</th>
<th>Class III (%)</th>
<th>Class IV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1,124</td>
<td>52</td>
<td>15</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>February</td>
<td>1,058</td>
<td>52</td>
<td>18</td>
<td>24</td>
<td>6</td>
</tr>
<tr>
<td>March</td>
<td>1,166</td>
<td>50</td>
<td>19</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>April</td>
<td>1,105</td>
<td>47</td>
<td>16</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>May</td>
<td>1,134</td>
<td>49</td>
<td>16</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>June</td>
<td>1,115</td>
<td>47</td>
<td>16</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>July</td>
<td>1,213</td>
<td>42</td>
<td>18</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>August</td>
<td>1,185</td>
<td>49</td>
<td>16</td>
<td>31</td>
<td>4</td>
</tr>
<tr>
<td>September</td>
<td>1,259</td>
<td>46</td>
<td>17</td>
<td>34</td>
<td>4</td>
</tr>
<tr>
<td>October</td>
<td>1,313</td>
<td>43</td>
<td>12</td>
<td>39</td>
<td>5</td>
</tr>
</tbody>
</table>

Average: 1,167  48  16  29  7
St. Dev.¹ 77  3  2  5  2

¹Standard deviation: a measure of the variation around the average.
in milk) (Figure 1).
At least three factors contribute directly to the Class III price remaining below the support price. Firstly, little cheese has been sold to the government since 1991. The Price Support Program for dairy products does not guarantee that milk or product prices will remain above support at all times. Instead, it is an open offer to purchase cheese, butter, and nonfat dry milk at the support price. The products must meet government standards, however. In the case of cheese this means that the cheese must be American cheddar packaged for long-term storage. Cheese plants do not ordinarily package this way. Also many cheese plants produce Italian cheese and switching to American cheese is costly. The cooperative or proprietary cheese processors must ask themselves whether the low prices are temporary and therefore not worth the cost of switching their packaging and processing or are these prices longer-term, and thus the procedures must be changed to meet government standards.

A second factor contributing to the lag in Class III prices being propped up by the price support is that the government did not have the necessary personnel on hand to grade and inspect the cheese being purchased. Because essentially no cheese had been purchased since 1991, these jobs have not been high priorities. Cheese is examined and tested in laboratories before it is purchased and the lag in getting people and laboratories set also contributed to the prices remaining below support levels. The government has been purchasing cheese recently and the Class III price will increase in future months.

A third factor may contribute to prices remaining just below the support price if the production surplus continues. The cost of processing cheese for sale to the government (i.e., packaging and other factors) is not accounted for in the support price. In addition, the delay in payment from the government is not accounted for. These add up to a cost of 2 to 3 cents per hundredweight so the Class III price could hover in the current range until something happens to change the milk production surplus.

**Newest Price Formula Reforms**

The reform that was implemented in January 2000 was subject to review and modification. As you might imagine, there are regions of the country that are not happy with the pricing system that resulted in large, prolonged differences between the cheese and butter prices. USDA announced a tentative final decision at the end of November that changed the Class III and Class IV formulas. Under the original reform formulas, Class III prices decrease 3 or 4 cents for every 10-cent increase in the butter price. To rectify the situation, the price of butterfat in cheese will likely be decoupled from the butter price and instead be priced using the National Agricultural Statistics Service (NASS) cheese price. However, even with this fix, the price of fluid milk continues to be decoupled from cheese price, perhaps sending the wrong production signals to certain regions.

**Michigan Production and Prices**

In Michigan, 303,000 cows produced 462 million pounds of milk in October 2000. This is the largest number of cows in Michigan since July 1997 (also 303,000). Milk cow numbers were down to 291,000 as recently as May 2000. Through October, total milk production was up 3.7 percent over the same period of 1999. The Michigan cooperative Class I price was around $15.00/cwt from July through November on the strength of the Class IV prices discussed above as well as the premium.

Figure 2 displays the Michigan ‘all’ milk-to-feed price ratio. A higher ratio indicates a better margin above feed costs. Following a similar pattern to 1999, the 2000 milk-to-feed price ratio increased from May through August. The ratio declined in September and October because the “all” milk price decreased to $12.60/cwt and corn prices climbed slightly to $1.70/bushel. This margin above feed cost also helps explain why milk production across the US continues to climb even as the government starts to purchase dairy products indicating a surplus. A continuing favorable milk-to-feed price ratio possibly could mean more significant adjustments in milk prices in the future.
The dairy industry sometimes debates the economic value of high milk production per cow. This article provides financial evidence from 1999 associated with varying milk production levels. It uses whole farm financial results from a panel of Michigan dairy farms. Each farm completed balance sheets at the start and at the end of 1999 plus an income statement of expenses and returns during the year. Farms were then sorted into groups by milk sold per cow as defined in the first line of Table 1. Averages were then calculated for each group. The second line in the table shows the numbers of farms in each group. The 155 Michigan dairy farms completed a business analysis with Michigan State University’s Department of Agricultural Economics. Collection of farm data was supervised by either Michigan State University Extension, Farm Credit System of Wisconsin, or AgriSolutions of East Lansing. Fifty percent or more of gross cash income had to come from a combination of milk and dairy animal sales. Panel farms were located throughout the state, from the Western Upper Peninsula to the Ohio border. All factors were calculated with software from the University of Minnesota’s Center for Farm Financial Management.

### Farm Size
Farm size appears to be related to milk sold per cow. Average number of cows per farm in the group that sold from 10,000 to 14,999 lb of milk per cow was 98. Starting with 17,000 lb the average size jumped to 151 cows. Farms with average milk production above 19,000 lb ranged from 226 to 234 cows, on average.

Table 1 presents only those few factors that appeared to change as milk sold per cow changed. The panel farms did not exhibit any relationships with the many items not included in Table 1, such as building repairs, real estate taxes, depreciation, or electricity use.

### Table 1. Financial factors that vary with milk sold per cow in Michigan in 1999.

<table>
<thead>
<tr>
<th>Factor:</th>
<th>Range in Milk Sold per Cow, lb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-14,999</td>
</tr>
<tr>
<td>Number of farms</td>
<td>19</td>
</tr>
<tr>
<td>Number of cows</td>
<td>98</td>
</tr>
<tr>
<td>Averages:</td>
<td></td>
</tr>
<tr>
<td>Net farm income, $</td>
<td>52,200</td>
</tr>
<tr>
<td>Dollars per cow:</td>
<td></td>
</tr>
<tr>
<td>Milk sales</td>
<td>2,132</td>
</tr>
<tr>
<td>Animal sales</td>
<td>127</td>
</tr>
<tr>
<td>Government payments</td>
<td>302</td>
</tr>
<tr>
<td>Purchased feed</td>
<td>505</td>
</tr>
<tr>
<td>Hired labor</td>
<td>162</td>
</tr>
<tr>
<td>Livestock supplies</td>
<td>95</td>
</tr>
<tr>
<td>Veterinary, medicines</td>
<td>35</td>
</tr>
<tr>
<td>Breeding fees</td>
<td>10</td>
</tr>
<tr>
<td>Fuel and oil</td>
<td>74</td>
</tr>
<tr>
<td>Total cash expenses</td>
<td>2,123</td>
</tr>
<tr>
<td>Net farm income</td>
<td>533</td>
</tr>
</tbody>
</table>
Workshops: Financial Performance...Where Does Your Farm Stand?

A three-day workshop, sponsored by Michigan State University Extension on how to analyze and strengthen farm financial performance will be conducted in seven Michigan locations during January through March.

“Three days is a large commitment, but most producers will benefit from learning more about the financial health of their businesses,” said Barbara Dartt, a Farm Business Management Specialist in MSU’s Agricultural Economics Department. “I think there are very few Michigan farmers that prepare annual financial statements to use for management purposes. Producers with little knowledge in this area should not be uncomfortable when seeking help – they are in the majority!”

With an emphasis on hands-on exercises using case farm data, the workshops will provide producers with the skills to both prepare and analyze financial statements. At the conclusion of each workshop, producers will take home:

2) an accrual net income statement for 2000; and,
3) an analysis of their farm’s financial performance in 2000.

Lecture time will be limited to the introduction of each new topic. Exercises and follow-up questions will provide the majority of learning opportunities. Case farm data will be used to explore common pitfalls when preparing balance sheets and income statements, as well as to illustrate principles of financial analysis. Plenty of time will be devoted to discussion of the most common measures and ratios used in gauging farm financial health. On Day 3, participants will have in hand the analysis of their own farm’s performance. One-on-one opportunities will be available for producers to discuss financial strengths and weaknesses with Extension personnel.

Upon registration, participants will receive a packet of information outlining the data needed to build balance sheets and income statements. MSU extension agents will enter the data. All information will remain strictly confidential. Computer skills are not necessary to participate in the workshop.

The cost of the 3-day workshop, which runs from 9:30 a.m. to 3:30 p.m. each day, is $100 per person, which includes registration, materials, and lunch for all 3 days. To register, mail your check, made payable to MSU Extension, 1 week prior to the event date, to the Extension office of the location you will be attending, indicating that it is for the Farm Financial Workshop. A registration form can be obtained at the following web site: http://www.msue.msu.edu/aoe/firm/.

The following are the locations and contacts for the program.

- **Clarksville** - Feb. 15, 22 and Mar. 1; Clarksville Horticultural Experiment Station, 9302 Portland Rd., Clarksville; Barry County Extension, 616-948-4862, 220 W. Court St., Hastings, MI 49058.
- **Ithaca** - Feb. 20, 22 & Mar. 1; Gratiot County Extension, 517-875-5233, 214 East Center St., Ithaca, MI 48847.
- **Three Rivers** - Jan. 16, 23, and 30; Cass County Extension, 616-445-8661, 201 E. State St., Cassopolis, MI 49031.
- **Lapeer** - Feb. 6, 13, and 16; Lapeer County Extension, 810-667-0341, 1575 Suncrest Dr., Lapeer, MI 48446.
- **Paw Paw** - Feb. 28, Mar. 1, and 14; MSU Extension, Human Services Bldg., Conference Room, 801 Hazen St.; VanBuren County Extension, 616-657-7745, 801 Hazen St., St. A, Paw Paw, MI 49079.
- **Sandusky** - Jan. 26, Feb. 6, and 8; Sanilac County Extension, 810-648-2515, 37 Austin St., Sandusky, MI 48471.
Cattle Lameness: Approach to Diagnosis - Sorting It Out

Michelle Kopcha, Leslie Cmách (Fowler), Paul Bartlett, Paul Coe, Kent Ames, David Beede*, and Phil Sears
Depts. of Lg. Animal Clinical Sciences, and Animal Science*

Lameness in dairy cattle has many causes. A problem in an animal’s feet, legs, or even in its brain and(or) spinal cord can cause lameness. Because of this, determining the location of the lameness is critical. In fact, it is the first step in deciding whether or not the condition is treatable, and if so, what are the options. This article describes a systematic approach to the examination of lame cattle in order to sort out the location and possible causes of the problem.

To determine the location of the lameness, the animal should be observed at rest and at a walk. While watching the animal, the following can be used as part of your initial assessment.

At Rest
1) Is the animal able to bear weight equally on all four legs?
IF YES: See below under observation of an animal at a walk.
IF NO: The limb that is not sharing the load may be the problem.
2) Are there obvious swellings or unusual angles noted around the feet or legs?
IF YES: The location of the abnormality may lead you to the source of the discomfort. For example, swelling between the claws, above the hoof wall or at a joint, may indicate an injury or infection. Abnormal angulation at the level of a joint may indicate a dislocation of that joint. An abnormal angle of a bone may indicate fracture of the bone at the level of the abnormal angle.
IF NO: Continue your examination.
3) Does the animal appear bright and alert?
IF YES: This may indicate a local problem, that is, one that does not affect the animal’s whole system. For example, a sole ulcer, an abscess, a muscle sprain or a damaged nerve usually does not affect an animal’s attitude or appetite.
IF NO: This may indicate a generalized problem that affects more than the feet and(or) legs, such as a lesion (tumor or abscess) in the brain or spinal cord, or a metabolic problem such as hypocalcemia (low blood calcium).

At a Walk:
1) Observe how the animal walks.
An animal that bears weight equally on all four limbs but arches its back when walking, is telling you that it is sore in all four feet. Sometimes this is described as “walking on eggshells”. Laminitis (founder) is probably the most common condition that causes this subtle change in an animal’s gait.

2) An animal that displays a shortened stride in one or more limbs indicates that the leg taking the shortened stride may be the source of discomfort. The animal is attempting to bear as little weight as possible on the affected leg, which results in the short stride. This usually reflects mild to moderate discomfort.
3) An animal that is not able to bear weight on a leg (non-weight bearing) may have a fracture, dislocation or infection in the affected leg. Such lesions are extremely painful if the animal attempts to bear weight on the limb. An animal with torn muscles and (or) damaged nerves may show non-weight bearing lameness because of loss of limb function and an inability to bear weight. Such conditions may or may not be painful.

Hands-on Examination
A hands-on examination usually follows the initial observation. If an obvious reason for the lameness is found and does not involve the foot, the animal’s claws may not need to be checked. For example, a fractured bone, or a joint that is hot and swollen from infection may be the reason for an animal’s inability to bear weight. However, in cattle, approximately 90% of lameness originates from a problem in the foot, usually in the outside claw, and 80 to 85% of the time, the hind feet are affected. Given this, after observation of a lame animal at rest and at a walk, if cause for the lameness does not appear to be above the level of the foot, it is now time to perform a thorough examination of the claws of the affected foot, or possibly, of all four feet.

To perform a thorough examination of the claws, the foot needs to be well restrained. A tilt table or stand up hoof trimming chute works very well for this purpose, especially if several feet are to be examined. If this equipment is not available, tying up an individual leg, or casting (a technique of using ropes that are strategically placed around the cow and to which pressure is applied to force the cow to lay down) works well. Several sharp hoof knives and a hoof nipper (Figure 1) will be needed to pare the sole of a cow’s claw; a hoof nipper (middle) that is used to trim the sole and hoof wall, and a hoof tester (right).

Figure 1. A hoof knife (left) used to pare the sole of a cow’s claw; a hoof nipper (middle) that is used to trim the sole and hoof wall, and a hoof tester (right).
pare the sole and trim excess hoof wall. Paring the sole is essential because some lesions located in the sole will not be readily apparent on the surface. However, when the superficial layers of the sole are removed, darkened or discolored areas may appear, which may indicate the presence of a bruise (injury) or an abscess.

In some instances, a hoof tester (Figures 1 and 2) may be useful to determine if a particular area of a claw is painful. This instrument is placed over the hoof wall and sole (Figure 2) and pressure is applied by squeezing the handles. If a deep abscess is present, applying pressure over the lesion may cause the cow to retract her leg. A hoof knife can then be used to pare the sole to explore the painful area and perhaps to uncover a pocket of pus or blood. Accumulations of pus or blood create a tremendous amount of pressure within the hoof. Lameness results because of the moderate to severe pain that occurs as the pressure increases. Relieving this pressure usually results in almost instant relief for the cow, and oftentimes she will display a dramatic improvement in her gait.

Table 1 provides a description of abnormalities that may be found in the claws of lame dairy cattle.

In a future issue of the Michigan Dairy Review, this discussion will continue and include lameness located in areas other than the foot. Also, treatment of various types of lameness will be discussed.

Table 1. Claw abnormalities (lesions) found upon examination of cattle on Michigan dairies.

<table>
<thead>
<tr>
<th>Lesion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abscess</td>
<td>Darkened area in the sole, usually near the white line. As this darkened area is explored, a pocket of pus is usually found.</td>
</tr>
<tr>
<td>Corn</td>
<td>Variable sized, firm enlargement of tissue between the claws and occasionally extending into the interdigital space.</td>
</tr>
<tr>
<td>Digital Dermatitis (Heel Warts)</td>
<td>Circular, red lesion, usually seen at the skin-heel junction, but also may be seen on the front of the foot. A lesion may look like a skin erosion, or it may have a raised, wart-like appearance. May be very painful.</td>
</tr>
<tr>
<td>Foot Rot</td>
<td>Swelling, foul odor, and discoloration (usually redness) between the claws. Skin may split, pus may be seen, and the affected foot is usually very painful.</td>
</tr>
<tr>
<td>Hemorrhage*</td>
<td>Pink, red, black or yellow areas of discoloration in the sole.</td>
</tr>
<tr>
<td>Heel Horn Erosion*</td>
<td>Dark pits and (or) linear erosions in the heel.</td>
</tr>
<tr>
<td>Interdigital Dermatitis</td>
<td>Skin between the claws is red and may have superficial cracks with gray discharge. In chronic cases, the interdigital skin may appear thick. Usually this is not a painful condition.</td>
</tr>
<tr>
<td>Overgrown Hoof</td>
<td>Toes are too long.</td>
</tr>
<tr>
<td>Sole Ulcer</td>
<td>Early lesions show a soft, circumscribed area at the sole-heel junction or at the toe, and are painful when pressure is applied. Chronic lesions may have red granulation tissue protruding through the sole defect.</td>
</tr>
<tr>
<td>Undermined Sole</td>
<td>Sole appears to be double.</td>
</tr>
<tr>
<td>White Line Disease</td>
<td>Dark discoloration and separation of the white line area between the sole and the hoof wall. Mild or early lesions may not be painful.</td>
</tr>
</tbody>
</table>

**A Book Review: Global Dairy Industry Restructuring**

Harry K. Schwarzweller  
Dept. of Sociology

Dairy farmers and their families, in virtually every industrialized country of the world, face an uncertain future. To remain competitive and to survive as dairy farmers, they must anticipate and deal effectively with increasingly complex forces of change. Some will make it and some will not.

**Concerns**

What shape will the dairy industry take in the years ahead? Will all small-scale family operations be phased out and will large-scale, industrially-organized dairies capture an even greater share of the market? Will current pricing and production control mechanisms, such as marketing orders, quotas, dairy boards, and other forms of governmental intervention, be modified to deal fairly with the various stakeholders? How will the coming generation of technologies influence the vitality of the dairy industry, particularly in light of present production capacities and surpluses? The questions are many, the answers elusive.

Unfortunately, current research literature relative to a restructuring of the dairy industry and the impacts of these great changes on farm families and rural communities is exceedingly sparse and diffuse. The industry’s transformation from a labor-intensive, highly regulated, strongly protected sector of agriculture, to a capital intensive system of production that is openly exposed to disruptive fluctuations in global markets, is not being aggressively debated, in a focused way, by agricultural economists, rural sociologists, or dairy policy specialists. Concerns are being expressed, of course, especially in the popular press, newsletters, farm magazines, and the occasional book.

But the issues are extremely complex, the politics very tangled, and the outcomes of any posited solutions to the "dairy problem" in the industrialized nations – where agriculture is no longer a driving force in the economy – are uncertain. Clearly, there is an urgent need for a concerted effort by the academic community and agricultural research institutes, in collaboration with dairy farmers and their leaders, to explore, monitor, and instruct the process of dairy industry restructuring.

**Recently Published Book**

To stimulate and broaden the scope of discussions about this issue, we recently have compiled and published a set of 16 original research articles (*Dairy Industry Restructuring*, Volume 8, Rural Sociology and Development, Jai/Elsevier Science Press, 2000, edited by Harry K. Schwarzweller and Andrew P. Davidson.) Each of the contributions reports on some aspect of the dairy situation and its problems in North America, Europe, and Australia. Many of the papers overview basic trends and, without exception, they indicate a dramatic decline in number of dairies and a parallel steady increase in average size of operation. The tone used by the various researchers in presenting their cold statistics is somber, almost fatalistic, sounding what seems to be a death knell for the small, traditional dairy.

Space limitations do not permit a detailed summary of the 16 contributions. Suffice to note some highlights that may be of particular interest to readers of the Michigan Dairy Review.

**Some Highlights**

The industry’s transformation is made strikingly clear through a set of carefully chosen visual images and interpretative arguments from a study of dairy farms in northern New York. Profound differences are observed between the traditional, small dairy with its craft-based mode of production and the larger, more modern operation. Many midwestern dairy farm families probably have photo albums that bear witness to similar changes over the years in their localities. Comparable changes are documented by researchers in Ireland, Germany, and Australia.

Dairy industry patterns, we find, vary by region in Australia, Europe, and America. The development of Wisconsin’s dairy industry, like Michigan’s, paralleled the urbanization of America’s midwest and its burgeoning markets for milk and cheese. Wisconsin dairies now average about 50 cows, are diversified, produce their own forages and concentrates, and rely mainly on family labor. The situation is quite different in California, where conditions favor very large, specialized dairies with herds averaging over 500 cows. California does not participate in the federal milk marketing orders. But California’s success, according to Dr. Christopher Wolf of Michigan State University and Bees Butler of University of California-Davis does not derive from its unique policies but rather from its favorable agro-ecological conditions and the region’s exploding population base.

Production efficiency is important and dairy farmers everywhere are being urged to adopt new, improved technologies. When changes are mandated by government agencies to assure high quality milk products, then new ways cannot be ignored. This is especially problematic for small dairies. In a marginal dairying community in west-central Mexico (Michoacan), the imposition of quality standards appears to be an exercise in power that has serious consequences for people’s livelihoods and futures. But issues of milk quality also are generating controversies in Europe, fueled by competition within the European Union and the public’s...
increasing suspicions about food contamination and “unnatural” production practices.

For an individual farmer, the “dairy problem” comes down to survival of the family and profitability of the enterprise. Regional circumstances, shifting governmental policies, vacillating prices, and market forces have much to do with the dairy sector’s vitality. But, within the same context, some farmers are more successful than others. A study in Texas finds that success in dairying depends on many factors, not the least of which are the operator’s skills, aspirations, and values. A study in Michigan’s Gratiot County, though confirming that economies of size are important, cautions that expansion may not be wise for many small dairies in light of family goals and alternative opportunities.

Producer cooperatives have been a major instrument for the marketing and processing of milk. But they too are now struggling to survive. A Swedish research team offers some innovative suggestions on restructuring small cooperatives by changing the system of incentives.

Governments have played a big part in subsidizing and regulating the milk industry, and as they back away from this protective role in Europe and elsewhere, the survival problems of small dairies are exacerbated. Quota systems are being fine-tuned. Small dairies in Norway are being gently nudged to adjust to the realities and threats of global markets. In the United Kingdom, the state is no longer involved in the day-to-day management and regulation of the industry, and the milk marketing system is now able to react more rapidly to changing market conditions and supply chain dynamics.

Challenges

The papers included in Dairy Industry Restructuring, Volume 8, call attention to trends and pressures that are reshaping the dairy sector in the world’s industrial nations. What happens, and the direction such changes take, will have great consequence on the socioeconomic well-being and life changes of a large segment of the agricultural community in most Western societies. Collectively, these researches, and the interpretations framed by the authors, call into question a widely-held view that the industry’s problems, and the struggles of those who are left by the wayside, are an inevitable outcome of globalization and modernization, beyond state and individual farmer control. Extension and outreach specialists, agricultural leaders, and rural social scientists, can and should make a difference in (re)shaping the dairy industry in ways that will be fair and socially responsible.


---

MSU Animal Science Graduates Working in Various Occupations

Pam Jahnke
Dept. of Animal Science

Many of these former students still visit campus and maintain contact with past professors and classmates, whether it’s just to chat or to seek professional guidance.

Luke Haywood graduated in 1998 with his B.S. in animal science and an emphasis in crops and soils. He’s a partner with his father, Larry Haywood, on their fifth-generation, 300-cow farm in Hastings. They also raise their own hay and corn silage on 550 acres.

“I mostly got my bachelor’s degree to give me something to fall back on if I don’t continue dairy farming. I anticipate continuing, but you never know what the future holds,” he said.

The Haywoods manage their livestock and crop operation with the help of six full-time employees. The father-and-son farming philosophy sounds simple. “We try to specialize in just milking cows.”

In keeping with their philosophy, Haywood said they did a “low debt” expansion by remodeling their facilities and expanding from 100 to 300 cows within the past 5 years. They moved their heifers off the farm to be custom raised and converted the hay barn, which previously housed heifers, into 160 additional free stalls for milk cows.
“We did a lot of the work ourselves. We didn’t build a new milking parlor, but put in a lowline with automatic take-offs and 16 units,” he said. Previously, the farm had 8 manual milking units.

When presenting the expansion plan - with cost and budget projections - to the bank, Haywood used the business analysis he prepared during a dairy management course. Another farming technique Haywood learned at MSU and applies at home is segregation of those cows with a high somatic cell count (SCC), because they are believed to be the animals most likely to have mastitis. Haywood separates this group from the rest of the herd and milks them last in an effort to limit the spread of infection, resulting in an overall lower SCC within the herd.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.

While the dairy business is a volatile one, he recommends young people pursue a career in the industry, but with some advice. Haywood believes animal science students should gain as much hands-on and practical experience as possible. He accomplished this through independent studies, so he could concentrate on areas such as ultrasound techniques, pregnancy diagnosis and forages. “It’s only worth a few credits, but the experience you gain is worth more than that,” he said. And, he urges students to take food processing courses so they can learn about specialty products, thus broadening their chances of employment.

Despite the ups and downs of the industry and the long workdays, Haywood is satisfied with his career choice. “I like it. I am not making a lot, but I am getting a lot of intangible benefits. It’s a lifestyle,” said Haywood, who lives on the homestead, with his wife, Rene and their two young sons. “If I didn’t enjoy it, I wouldn’t be working hard doing it.”

Jamie Snow, D.V.M., is finally doing what she has wanted to do since she was a second grader growing up on a farm in Mason: practicing veterinary medicine. An associate with Animal Health Associates in Mt. Pleasant, she treats large and small animals. Snow, who graduated with her doctor of veterinary medicine in 1999, also has a B.S. in veterinary science from Michigan State.
before he can make a recommendation. Such problems may range from weak udders to poor legs or feet. “Anyone who’s milking cows should want good udders,” he noted.

Holland presents his customers with bull proofs containing pertinent genetic information, gleaned from the bull’s milking daughters and parent averages. (The proofs include information on a bull’s predicted transmitting ability for milk production, protein and fat production, calving ease, udders, legs and feet.) The premise is to detail a cow’s weak characteristics, and then match her with a bull which produces daughters with strong traits in those areas.

Having grown up on a farm, Holland said his current job is a good fit. “I just really enjoy cows and now I get to be around them, but I don’t have to milk them,” said Holland, who grew up on a 130-cow family farm with 800 acres in North Branch. The down side to his job is the amount of time he is on the road as he has an infant daughter, he said. However, the advantage to his job is the independence that goes along with it, said Holland, who works out of his home in Brown City. “They (management) don’t have to watch over my shoulder to know if I’m working or not,” he explained. His sales figures bear that out.

Holland still uses information gleaned from his reproduction and management courses as an Ag Tech Dairy student in his day-to-day activities on the job. He also gained helpful hints in farming from classmates - who represented a variety of farms and dairying - as well as farm visits. “I think every farmer should be out looking at other farms and seeing how he or she can improve his or her set up.”

He originally “signed on” to the Ag Tech Dairy Program looking for “cow sense” that he could take back to his family farm. As it turned out, he only stayed on the family farm for a few years before taking a job as a drug company representative prior to his current position. In retrospect, he wishes he would have gone through the 4-year program, but that doesn’t prevent him from recommending the 2-year program to those farmers he meets with college-aged offspring. He encourages animal science students to study hard and pay attention. “Learn all that you can and make the most of it,” he said. “I came to college to have a good time. Now I realize that was the wrong way to do things.”

He and his wife, who was employed as an office manager at a local elevator near North Branch, return each spring to MSU to attend the annual MSU Dairy Club Banquet and the Spartan Spectacular calf sale, to catch up with former classmates and professors. Though Holland realizes he possibly might be making more money in another field, he’s very satisfied. “I like dealing with cows and farmers - I don’t know what else I would want to do right now.”

Record Numbers of Youth at 2000 Michigan Dairy Expo

Mike Peters and Richard PursleyDept. of Animal Science

A record number, 200 enthusiastic youth and 300 willing cattle, participated in events at the 2000 Michigan Dairy Expo. The passion displayed by Michigan’s youth for this event has translated into more than a three-fold increase in participants from 4 years ago.

The Expo was held July 10 through July 14 at Michigan State University’s Pavilion for Agriculture and Livestock Education. It was a week filled with fun and excitement for people of all ages and backgrounds. Tuesday, July 11, was the Michigan 4-H State Dairy Show. That morning, over 100 youth competed for the title of Supreme Showperson. Lindsay Kirk of Clinton County earned the title of Supreme Showperson. After the showmanship contest, over 300 head of cattle were exhibited in seven different breed shows. The 2000 Supreme Champion cow was Davidsdonee Moonbeam Emily exhibited by Danny Benjamin of Ingham County. All youth involved in the show did an excellent job displaying their skills and exhibiting their animals.

The Great Dairy Adventure

Wednesday of Dairy Expo week featured two separate events, The Great Dairy Adventure and the State 4-H Dairy Judging Contest. The Great Dairy Adventure is a consumer education program that just completed its second successful year. Nearly 200 young people and their chaperones visited the MSU Pavilion to learn where milk comes from. Many of these youngsters (and adults) were thrilled to get their Milk Mustache picture taken with MSU football star T. J. Duckett. T. J. said he had a lot of fun too! The kids learned how dairy products are produced, how to milk a cow, and why milk and milk products are a healthy dietary choice.

Over 150 youth participated in the Michigan Youth Dairy Cattle Judging Contest. In the junior division of the contest, Danny Benjamin was the high individual, while Mary TenBriink of Ottawa County was the high individual in reasons. The winning team in the junior judging contest was the A team from Ottawa County. In the senior division of the dairy judging contest, high individual honors went to Faye Vanderhoff from Lenawee County and top individual in oral reasons was Katie McCune from Gratiot County. The high team overall went to the Lenawee County team.

Youth Events

Youth events wrapped up on Thursday with the State Dairy Bowl Competition. The senior team from Livingston County took home top honors in the dairy bowl and earned the right to compete in the National 4-H Quiz Bowl in Louisville, Kentucky. The team from Ottawa County grabbed first place in the junior division of the Dairy Bowl.

Expo week culminated with the tra
Readers’ Input Survey — Michigan Dairy Review

We request your input and opinions to ensure that Michigan Dairy Review (MDR) remains a key source of information for the Michigan Dairy Industry! Please print off pages 21 and 22, after recording your responses and mail to: Pam Jahnke, Department of Animal Science, Michigan State University, 2265L Anthony Hall, East Lansing, MI 48824-1225.

Including your name, address, and contact numbers at the end of the Survey will make you eligible for a drawing to win an MSU Spartan Sweat Shirt in your size ($30 value)!

This issue begins the 6th year of publication of MDR. The primary objective of MDR is to provide the latest and timely technical information about dairy production, health, management, science and economics to the Michigan Dairy Industry. During the last 6 years, cost of printing and mailing has been supported by Michigan Animal Agriculture Initiative funds awarded annually on a competitive basis through MSU’s Animal Industry Coalition in the College of Agriculture and Natural Sciences. This funding may not be available in future years.

Please check the appropriate box (☐) or fill in the appropriate blank in the following questions.

1. Check the item that best describes you (please check only one):
   1 ☐ dairy consultant 4 ☐ dairy owner 7 ☐ veterinarian 10 ☐ ext. agent/ specialist
   2 ☐ dairy employee 5 ☐ nutritionist 8 ☐ student 11 ☐ other ______________________
   3 ☐ dairy manager 6 ☐ herdsperson 9 ☐ college teacher/researcher

2. If you are a dairy owner or manager, please complete this question.
   ♦ Current herd size = _______ milking and dry cows; =______ heifer replacements
   ♦ In the next 5 years, my herd size will: ☐ increase ☐ not change ☐ decrease ☐ I will go out of business
   ♦ I currently raise my own heifer replacements: ☐ No ☐ Yes
   ♦ My heifer replacements are custom-raised: ☐ No ☐ Yes
   ♦ In the next 5 years, my heifer replacements will be custom-raised: ☐ No ☐ Yes

3. Currently, I prefer to read MDR: ☐ in hard copy form as it comes in our mailbox
   ☐ over the Internet from the Web site

4. If Animal Initiative funds were not made available for printing and mailing in the future, I would pay $10 per year to receive MDR in my mailbox. ☐ No ☐ Yes

5. If Animal Initiative funds were not made available for printing and mailing in the future, I would access it free of charge via the Internet. ☐ No ☐ Yes

6. In general, length of articles in MDR is: ☐ too short ☐ about right ☐ too long

7. In general, articles in MDR are: ☐ not technical enough ☐ about right ☐ too technical

8. In general, articles in MDR are: ☐ not helpful or informative to me
   ☐ somewhat helpful or informative to me
   ☐ very helpful or informative to me

9. Topics or subjects I would like to see written about in future issues of MDR include the following:
   1. __________________________________________ 3. __________________________________________
   2. __________________________________________ 4. __________________________________________

(Please Complete Section on Following Page)
10. Overall, the biggest challenge for my specific dairy business in the next 5 to 10 years will be:

11. To be eligible for the drawing of the MSU Spartan Sweat Shirt in my size I have included:
   My Name: ..........................................................
   Address: ..........................................................
   (as it appears on the address of this MDR issue)
   City: ............................... State ....... Zip .........
   Telephone no.: - - - - - - - - - - -
   E-mail address: ...........................
   Fax no.: - - - - - - - - - - -
   I have folded, taped the edge of the Survey with the MSU return address showing and mailed it (postage pre-paid).

Thanks for your input
ditional open shows for the state’s various breed associations. Ayrshire, Brown Swiss, and Red and White breeders had a successful day in the showing on Thursday. Then on Friday, the 2000 Michigan Dairy Expo wrapped up with the Jersey and Holstein open shows. After the open shows were completed, all breed champions returned to the ring for the naming of the Open Show Supreme Champion. Supreme Champion was Leela C C Donna E. “Donna” is a Senior Holstein Three Year Old exhibited by Long Haven Farms, Inc. from Clayton, MI.

Sponsors Support Dairy Expo

We would like to thank our great sponsors and gracious volunteers for making the 2000 Michigan Dairy Expo a huge success. Make plans now to attend the Michigan Dairy Expo on July 16 through 20.

The following organizations, companies and individuals provided support for this year’s Expo:

Jerry and Pam Caryl, Dansville; Ira Krupp, Grand Haven; George Atkeson, Greenville; Mary Jo and Jerry Godfrey, Davison; Monsanto; ABS Global; Cargill Animal Nutrition; Consumer Energy; Country Fresh; Dairy Farmers of America; Farmco; Genesee County 4-H Dairy Committee; Genex Cooperative, Inc.; Greenstone - Farm Credit Services; Kent County Dairy Development; Kramer Family Farm; Merial Limited; Michigan Farm Bureau; Michigan Milk Producers Association; MSU Dairy Club; MSU Dairy Judging Team; Munsell Farm; Northstar-Select Sires; Osceola County Dairy Boosters; Ottawa County 4-H Dairy Committee; Pfizer Animal Health; Shiawassee Dairy Association, and the United Dairy Industry of Michigan.

**MSU Winter Dairy Program Runs Jan. 22-Feb. 2**

This year’s Sixth Annual Winter Dairy Educational Program sponsored by Michigan State University Extension will be held throughout the state between January 22 and February 2.

“Are Your Management Strategies Maximizing Genetic Potential?,” is a one-day program that will be presented by faculty and Extension Dairy Agents at 10 sites in Michigan.

Sessions will address: a bovine TB update, manure nutrient management, raising production and profit, helping high-producing cows excel, transition cows and standard operating procedures, a mastitis update, increasing fertility in lactating cows, and an interview with a Michigan dairy producer. A notebook has been developed for reference materials.

The program will run from 9 a.m. to 3:15 p.m. at the following locations:

- January 22 at the Bark River Senior Center, Bark River.
- January 23 at the B. J. Restaurant, 900 N. Center St. (Old 27 North), Gaylord.
- January 24 at Bill Oliver’s Best Western Conference Center, west M-55, and M-115, near Cadillac.
- January 25 at the Quality Inn and Forward’s Conference Center, near West Branch.
- January 26 at the Ingham County Fairgrounds, Mason.
- January 29 at the Gratiot-Isabella Regional Education Service District in Ithaca.
- January 30 at the Ubly Heights Country Club, 2409 E. Atwater, Ubly.
- January 31 at the Kellogg Biological Station Education Center Auditorium, near Hickory Corners.
- February 1 at the 4-H Community Building at the Hillsdale County Fairgrounds, Hillsdale.
- February 2 at Jerry’s Country Inn, 3360 Fairlanes, near Grandville.

Early registration, at least 14 days prior to each session, is requested for meal planning and educational materials. The cost is $40 per person, plus $20 for each additional person from the same farm. The noon meal will not be guaranteed for on-site registrants.

Registration forms are available at MSU County Extension offices, by contacting Pam Jahnke at 517-353-4570, or at the following web site under the heading, “Winter Dairy Program 2001,” http://www.canr.msu.edu/dept/ans/Home/Dairy/Extension/extension.htm. Forms also are available in the October issue of the Michigan Dairy Review.

**Calendar of Events**

**January 24**

Michigan Agriculture Environmental Assurance Program Comprehensive Nutrient Management Plan Meeting from 9:30 am - 3:15 pm at the Trestle Stop Restaurant, Hamilton. There is no registration fee. Contact Charles Gould for more information (616) 846-8250.

**February 19**

Farmers Day at the Branch County Career Center in Coldwater. For more information contact Roberta Osborne at 517-279-4311.

**2001 Dairy Profit U**

The 2001 Dairy Profit U conference will be held Monday, February 26, at Holiday Inn South in Lansing.

The 2001 Dairy Profit U will draw on dairy experts from around the country to address the theme: “Sharpening Your Dairy Management Skills.”

Speakers scheduled include Dr. Bernie Erven, Ohio State University; Tom Cannon, dairy management consultant, and Dr. Larry Hamm, Michigan State University.

Dairy Profit U is sponsored by Michigan Milk Producers Association, GreenStone Farm Credit, and Michigan State University.