Few dairy farmers conduct regular, formal evaluations of their employees. In many cases, the closest a dairy employee comes to getting feedback from his or her boss is a cross-eyed look at a dirty filter sock with a suggestion that “you need to get those udders cleaner before putting the milkers on”.

Performance appraisals aren’t popular for a number of reasons, but probably the most common is that evaluating, or judging, is something people don’t generally like to endure, whether the judge or the judged. Nevertheless, performance appraisals can be a useful tool to improve employee performance, job satisfaction, and communications on the dairy.

Two Types of Measures

There are essentially two types of measures to evaluate when conducting a performance review: outcomes and behaviors. Outcome measures are productivity based, such as cows milked per hour, calf mortality rate, or production per cow, and are defined by the work that an individual has done. Behavioral measures like ambition, dependability or responsibility can be more subjective, yet should still be considered in the review process if such characteristics are important to the business (1).

While some performance appraisals are relatively informal conversations between supervisor and employee, a standardized form can aid in directing the discussion and keeping the review on track. On the following page is an example of a how a performance appraisal form might look for both an outcome and a behavioral measure (Figures 1 and 2). This is a very simple format where the manager checks the box that best describes an individual’s performance.

The performance appraisal process compares an employee’s results and behaviors to expectation levels, hence the three categories: Below Expectations, Meets Expectations, and Exceeds Expectations. The two examples give well-defined objectives for each of the three categories of expectations. These definitions serve as a guide for both the

**Effective Employee Evaluations**

Rebecca L. Mitchell
Extension Dairy Agent
Kent, Ionia and Montcalm Counties

Dr. David K. Beede
Department of Animal Science
Michigan State University
Anthony Hall
East Lansing, MI 48824-1225
Phone (517) 432-5400
Fax (517) 432-0147
E-mail beede@msu.edu

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manager and employee when determining which category best describes the work of the employee. Some performance evaluation forms use a five point scale that can be just as effective as the three categories in the above example.

Define Your Expectations

Regardless of rating scale, it is critical that expectations be clearly defined and identified for each employee long before the actual review. Standards for behavioral characteristics may be the same for all employees; for example, all employees on the farm are evaluated similarly for dependable behavior as measured by showing up for work on time, scheduling vacations in advance, and calling in when sick. However, outcome measures will likely be different for different positions on the dairy. For example, a milker may be evaluated for bacteria count, while a calf feeder may be evaluated for calf mortality. Most importantly, the production measures must be linked closely to things that the employee actually can impact or control.

If conducting evaluations annually, managers should establish concise expectation criteria for the following year within a month after the review. Some managers elect to ask for input from employees on developing the expectation criteria, particularly for the outcome based measures, to give employees more ownership in the process. Once complete, these expectation criteria should be given to the employee immediately, giving him or her at least 11 months to work toward a particular rating. Then, at least 2 weeks prior to the scheduled review, it is a good idea to give the employee another copy of the evaluation scheme so that he or she has adequate time to prepare in advance.

Just as employees need time to prepare in advance for an evaluation, so do managers. To make efficient use of the time spent when giving performance evaluations, managers should give some thought to employee ratings prior to the review. In other words, managers should do their homework, determining where an employee fits into the expectation scheme for each measure prior to the review. For all ratings - below, meets, or exceeds expectations – managers should be prepared with specific examples of employee performance that result in a particular rating. To make the review credible, these examples should be a representative sample from across the period in review, not just the most recent week or month. Managers also should be aware of how an employee may react to the ratings. In the event that an employee disagrees with a particular rating, it may become necessary to simply agree to disagree. In all cases, however, it is critical that managers be sincere in their evaluations, with a clear focus on employee development.

There should be very few surprises in a review. If an employee is particularly surprised by a rating, this is an indication that regular, day-to-day feedback is lacking on the farm. Day-to-day monitoring and feedback regarding employee performance is a primary and ongoing responsibility of all managers (2).

Be a Coach and Problem-Solver

The performance review process should focus both on positive reinforcement for areas in which an employee is performing well and develop plans for areas in which an employee is not meeting expectations. The review is not a session to assign blame, but a time to focus on coaching...
employees and solving problems. If an employee is weak in a particular area, ask for suggestions on how he or she might improve. This gives the employee ownership in improving his or her performance. In addition, while it is ultimately the responsibility of an underperforming employee to improve his or her performance, it is equally important for the manager to assist by providing the employee with the appropriate tools to improve job performance. A manager should always ask the question, “What can I do differently as a supervisor to help you be more effective in your job?” and then be ready to listen and respond (3). The review is an opportunity to provide candid feedback by both parties, so two-way communication is critical. The review also can be an ideal time to discuss future career plans with an employee.

**Who Should Conduct and Hold the Evaluation?**

In general, each employee should be evaluated by his or her direct supervisor. Of course, this requires an organizational structure where supervisory relationships are clearly defined. An employee’s direct supervisor should have the best handle on the employee’s overall performance, resulting in the most effective and credible review.

It is best to conduct employee evaluations in a private place without interruptions. The performance review is a time for a manager to allocate time to a single employee. A manager can give the impression that the performance appraisal is not a top priority if filled with numerous interruptions. In other words, turn off the cell phone and don’t allow interruptions from others unless absolutely necessary. The length of an individual’s performance review will vary depending on a number of factors, but is largely under the control of the manager giving the review. In general, set aside between 30 minutes to 1 hour of uninterrupted time to complete each employee’s review.

**How Often Should I Evaluate Employees?**

Evaluations should be conducted a minimum of once per year. If a manager would rather meet to review performance more frequently, every 6 months is adequate. The exception is for new employees, who should be on a much more frequent schedule of formal evaluation. One common suggestion is to complete an evaluation at 30, 60, and 90 days into employment for a new hire. This provides an opportunity to get new employees accustomed to the review system and to allow both parties to express concerns early in the individual’s employment. In addition, such a policy forces the ever-busy manager to spend valuable time with each new hire to get a struggling employee on the right track faster or to keep a strong employee progressing forward.

When planning time to complete employee evaluations, managers should avoid times of the year when other things will take priority. For example, February or March may be a more convenient time to schedule reviews than during planting season or corn silage harvest. In addition, managers should set a personal deadline for completing all employee reviews to remind themselves to complete this important task for the benefit of the farm staff and the business.

**Summary**

There are a number of best practices that managers should follow when conducting performance evaluations of employees. Most critical to the process is that managers emphasize honesty, fairness, and a commitment to development of workers on the dairy. By doing so, farm managers can use employee evaluations as a useful tool for improving employee performance on the farm.

**References**

while and found to his surprise that he was probably already spending the same amount of money on his employees as was spent at the larger dairy. However, neither he nor his employees were aware of this.

How is this possible? The farmer was paying a lower hourly wage, but he was doing many additional things for his employees. He had well kept and clean housing for some of his employees, for which he was not charging. He even paid utilities and recently bought satellite TV dishes. While housing and utilities are related to significant costs for the employer and significant savings for the employees, it was not on their minds when they thought about wages.

Benefits and Non-Cash Wages

Although agricultural labor regulations do not count benefits and other non-cash wages as wages, there are values and often monetary expenses related to them. A farmer who provides housing for employees has gone through significant investments to ensure his labor supply. If the workers then take it for granted and don’t realize what it is worth, the investment does not pay off.

What can be done about it? Some employers choose to enumerate all the non-cash wages their employees received on the pay slip. Some employers feature a “benefit of the month,” which they elaborate on. Especially costly benefits could be spelled out as to their cash value. Benefits may include expenses for health, dental, and eye care, and retirement in the case of the permanent employees, and sometimes housing and utilities. For seasonal workers, benefits might include housing, protective clothing, and possibly meals. Dairy farmers often forget to include the in-kind benefits they provide for their employees, such as meat or off-work use of a farm truck.

For other benefits you might provide for your employees it may be harder to decide how much money they are worth. You might give them a half-day off for a doctor’s appointment, even if it is the busy season. You might arrange transportation for them to do grocery shopping. There is that big party you give every year at the end of the crop harvest season. Probably there are many things you do, without giving a second thought about them.

Chances are your employees value all the benefits you provide. Most of the non-cash wages are worth more to them than if you gave them the money. In addition, the money would be taxable. But your employees do not constantly think about the benefits, nor are they on their mind when offered a higher wage from another employer. Raising your employee’s awareness of the perks and benefits is important to keep better employees.

One way to keep employees aware of benefits is to simply talk about them and remind them of their value. If you gathered your employees and gave them the “benefit talk,” they would probably think you were out of your mind. There are other ways of informing them. You can start with a benefit review for new employees when they are hired. They would receive an orientation about what is available to them and what will change over time if they stay with you. A new employee normally is not entitled to all the benefits available. Therefore, one reason to remain at a job would be to secure the benefits the future holds for him or her. Moving to the next step of benefit privileges provides an excellent opportunity to talk about the full benefits package.

Talk About It

You can involve your long-term employees in these orientations for the new employees. That is one way to raise consciousness. However, this approach may not work for everybody. A good opportunity to talk about benefits is during times of change. Your employees, the situations they are in, your farm, the costs of the benefits, all change over time. Further, you might consider giving your employees the opportunity to choose the benefits they prefer and not offering a standard package for everyone. Even if you are not in favor of too much change in the benefit package, discussing how your individual employees feel about your package, and allowing them the opportunity to suggest changes is a way of keeping the package up-to-date and tailored to employees’ needs.

Providing a good employee benefit package is not enough; you must talk about it. The road to retention is paved with communication. Keeping your employees requires talking and listening to them. Listen closely to what they have to say to you and take them seriously. Whether it is about their benefits, employee’s suggestions, or their training on new skills, communication is key.

Showing Appreciation!

Not showing appreciation is:

• arrogant;
• ungrateful;
• insensitive; or,
• a breeding ground for family and labor problems.

The answer, of course, is all of the above. Appreciation is an essential part of working with people and having them work with you. If you are not good at showing appreciation, work at it! Nothing will substitute for it!
And just to clear the air, to quote a dairy producer, “paying employees is not recognition – you owe them their pay”. Making employees feel appreciated will fuel their motivation and may often return a hundred-fold the investment you make in it. However, showing appreciation is not a tool of manipulation, it is truly expressing thankfulness for something that they do. As such, it requires a bit of humility.

Below are five characteristics of showing appreciation.

1. **Appreciation should be shown to family as well as to non-family employees.** Although this shouldn’t need to be stated, all too often we overlook those closest to us. We expect their efforts and, therefore, often neglect to thank them and make them feel valuable. None of us likes to be taken for granted. Even though family members have a vested interest in the success of the farm, they need to feel that they are important to you in the business, as well as personally. So each of the following characteristics applies as much to family as non-family.

   Employees also should have opportunity to show appreciation to one another. Maybe it is by having a dry-erase board mounted in the milkhouse that is reserved for notes of appreciation. Call it the “atta board” for “atta boy” and “atta girl” notes.

2. **Appreciation should be specific.** Granted, no one does everything right. But that should not stop you from appreciating what they do well. Be specific in your thanks or praise. “I really like the way you clean the parlor after milking” or “you are doing a great job at prepping teats”. This reinforces the specific action and allows you to build upon it in the future.

3. **Appreciation should be frequent.** Timing is always a balance. Appreciation shouldn’t be so frequent that it loses its meaning, but neither should it be so infrequent that it stuns the recipient. It should also not be predictable. Don’t put it on your calendar like progesterone or bST injections. That has a ring of insincerity. Appreciation really comes from an eye to the job people do for you and a heart that is grateful. Take note of the positive things about people, and when you note it, say something then and there.

4. **Appreciation should be public.** First, the opposite – criticism should always be private! Never rebuke an employee in front of others. But, be quick to praise an employee or family member in front of others. Not only does it give that person a boost, but it helps others to know just what you do. But, be quick to praise an employee or family member in front of others. Not only does it give that person a boost, but it helps others to know just what you consider praiseworthy.

5. **Appreciation should be creative, tailored, and varied.** Don’t get in a rut and don’t hesitate to seek new ways to show appreciation. Obviously, verbal appreciation is the basis for all appreciation. Even if you give something, accompany it with a statement that links it to your appreciation, such as “I want you to have this because I appreciate . . . “. Here are several ideas to help you tailor demonstrations of appreciation.

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**Use Appreciation as an Opportunity**

1. **Build pride in the dairy industry.** You work in a great industry, producing a great product. You should take pride in dairy products and so should your employees. It will affect the way they do their jobs. For example, you might bring ice cream to the farm with spoons for all. It is not the kind of thing that will keep so everybody breaks and eats until the ice cream is gone. And at the same time, say that “I want you guys to know that I appreciate your hard work these last couple of days, and I also want you to know that what we do here goes into products like this good ice cream”. You can do the same thing with pizza or you can give gift baskets with cheeses or flavored milks. The dairy industry provides many possibilities.

2. **Build pride in your operation.** Tractor companies figured out long ago that if they gave someone a hat with their name on it, people develop some loyalty to their tractors. Everyone else that sells things seems to have jumped on that same bandwagon for good reason. Some farms have had jackets made, but it is all too rare that dairy producers present products to their employees with the farm name emblazoned on it. T-shirts don’t cost much. Each year you could have a new batch made up with a new saying or theme each time. In fact, you could have a contest each year among family and employees to develop the new slogan!

   Encourage employees to develop and care for the appearance of the farmstead. Maybe an employee is skilled and can make a farm sign or the structure on which to put the farm sign. If someone has an interest in landscaping, give them the opportunity and a budget to landscape around the farm sign or the buildings. When you build their pride in your operation everyone works better.

3. **Involve and recognize their families.** When you need employees to put in extra hours, it is their families that suffer from their absence. Recognize that by doing something for the employee and family, such as giving them passes to an amusement park, ballgame, or race. Be sure to include families in celebrations, and schedule activities for the children of employees when you have social events for the farm crew.

4. **Meet special needs.** All families or individuals go through times of need, and these are opportunities to say that you care about them. Prior to the start of the school year you might give a gift card for a store so that they can get school clothes for the kids, or maybe you give a gift card for the local auto repair garage because of a need the employee has. In so doing, you show compassion by seeing a need and acting on it. Again, link it to the appreciation you have for something they do, otherwise it may look like a portion of the wages.

5. **Give for a particular interest.** Individuals have different interests that make them unique. Tailor your appreciation efforts to those interests. Maybe you could sponsor a racecar they are involved with, or sponsor a softball or bowling team. Sponsor their kids in a walk-a-thon or other fund-raiser. Maybe you give shop space for them to work on a vehicle or rent a camper for them. Find out what gets your
people excited and tap into it by linking your appreciation to something you can do to encourage their interest.

Don’t Be a Curmudgeon!

Frankly, it takes work to make people feel appreciated and to tailor ways to show that. But when you do, it will reap abundant treasures of motivation and a good reputation in the community that will bring other potential employees to your doorstep. Appreciation at its heart is caring for people. You’ll never get people to care for your business until you care for them---specifically, frequently, publicly, and creatively. And remember, all these things apply to your family as much as they do to employees. So try it, today even!

Health Management

Michigan TB Update: July 2002

John Molesworth, DVM
MSUE/MDA
Livestock and Disease Education Specialist

An update of the Michigan bovine tuberculosis (TB) situation has been requested.

Establishment of zones relating to the TB Eradication Project. Three TB zones became effective March 10, 2002---Infected Zone, Surveillance Zone, and Disease-Free Zone. Each zone has specific requirements for animal identification, herd testing, and movement permits.

Infected Zone—includes Alcona, Alpena, Montmorency and Presque Isle Counties. In the Infected Zone an annual whole-herd test (all livestock that are 12 mo of age or older) is required of all herds for surveillance, except that surveillance testing is not required in terminal operations. A terminal operation is an operation that is inspected and approved by the state where the movement of animals is controlled to only other terminal operations or directly to slaughter. Movement testing requirements from the Infected Zone include:

• The herd must have met the annual testing requirements for surveillance testing.
• An individual animal test with negative results is required within 60 days prior to movement for breeding livestock and sexually intact feeders, if movement occurs 6 months after the date of the annual whole-herd test.
• No additional testing is required of individual animals moved directly to slaughter, to a terminal operation, or if from an accredited herd. Movement permit requirements: a movement permit is required to move livestock from any premises within the Surveillance Zone, unless moving directly to slaughter.

Disease Free Zone—includes all counties outside the Infected and Surveillance Zones. As in all other zones, Official Identification is required on any livestock that move from any premises. Surveillance herd testing requirements include:

• All herds located in Antrim, Arenac, Charlevoix, Emmet, Gladwin, Kalkaska or Roscommon Counties are required to have completed two whole-herd tests before the December 31, 2003, a statewide deadline for whole-herd testing.
• Those herds having completed a whole-herd test once must be tested a second time upon or near the herd test anniversary date in 2002.
• Those herds never having been whole-herd tested must be tested within the year 2002 with a second test to follow on the 2003 anniversary date.

Official Identification

Official identification is required on all livestock that move from any premise in any of the zones. Official identification is a USDA alphanumeric tag (either a test tag or a Brucellosis vaccination tag) or an electronic identification tag that is “married” to an American ID number. Test tags are available from any accredited veterinarian or from the Michigan Department of Agriculture (MDA).

Statewide (All Zones)

• Breeding livestock and sexually intact feeders must originate from a herd that has received at least one whole-herd test.
• Deacon calves (bull calves less than 14 days of age) may move from any premises in any zone provided the herd testing requirements for surveillance have been met.
Establishment of these zones does not alter statewide testing, permitting, or identification requirements that may be in addition to or more restrictive than these requirements in any instance as prescribed by law.

Types of Testing Requirements

There seems to be some confusion between surveillance testing and movement testing. The same test procedure is used but for different reasons. Surveillance testing should be done on the whole herd. For animal movement the test is used only on the individual animals being moved. Surveillance testing is done to determine if any disease is showing up in an area where it has not been discovered previously. Movement testing helps ensure that the disease is not being moved from one place to another by an infected animal.

Custom Heifer Raising

Some questions have been raised about dairy heifers being moved to and from custom heifer raising facilities. Many of these situations are considered on an individual basis but a general statement may be: if heifers are moving from farm A (dairy) to farm B (custom raiser) and all heifers at farm B are returning to farm A they may be eligible for an exemption to testing and permitting requirements. However, if heifers from more than one dairy farm are moved to the same custom raiser they must meet the testing and permitting requirements of their individual zones. The best advice is: if in doubt ask.

As of May 28, 2002 twenty herds have tested positive for TB. Eighteen were beef herds and have been depopulated. Two were dairy herds and both elected to develop a herd plan to test out of the problem. One of the herds has completed its testing protocol and has been released from quarantine.

Split-State Status

The process for establishment of split-state status is underway. To qualify for split-state status certain procedures must be followed. We must ensure the testing, identification, and movement requirements are being implemented in each zone. We must follow a strategic plan to move through the process. Formulation of the zones is part of that strategic plan. One advantage of implementing the zones and moving forward with the strategic plan already has been realized. As many people in the dairy business are aware, a yearly test was required by the Pasteurized Milk Ordinance to sell milk. Food and Drug Administration (FDA) has agreed that because Michigan is progressing with the strategic plan, an annual test of all dairy cattle for the PMO will not be required.

So, by forming the zones we have not only progressed toward split-state status, we have saved a few million dollars in testing costs and a lot of aggravation for dairy producers.

USDA sent a team to Michigan the week of April 15 to review our handling of the TB situation, and it is my understanding that most of the feedback from this visit has been fairly positive. Many internal steps must be accomplished and a certain amount of time must pass before split-state status can become a reality. If this comes to pass, the state will be divided into two zones. All but the northeast lower counties will be in the Modified Accredited Advanced Zone and the counties in the Infected and Surveillance Zones will be in the Modified Accredited Zone.

Risk Mitigation Strategies

Much research has been conducted on how to protect livestock from exposure to bovine TB. The following resource people may be contacted for information regarding fencing, disease control permits, epidemiological investigations, TB testing zones, and MSU Extension services.

Contacts

Peter Butchko, USDA Wildlife Services - fencing (517) 336-1928
Elaine Carlson, DNR Wildlife Field Biologist - disease control permits (989) 826-3211.
Dr. Larry Judge, USDA Veterinary Services - epidemiology (trace testing) (517) 324-5290.
Dr. Larry Granger, MDA Bovine TB Manager - testing and zones as well as general TB program information (517) 241-2460
Dr. John Molesworth, MSUE/MDA - Extension services and biosecurity information (989) 785-5616 or (888) 565-8626.

Chronic Wasting Disease

Kevin Kirk
Michigan Dept. of Agriculture

Chronic Wasting Disease (CWD) belongs to a group of fatal neurodegenerative diseases known as transmissible spongiform encephalopathy(ies) (TSE) or prion diseases. CWD is an emerging TSE that has been found in both captive and free-ranging deer and elk. CWD was first observed in deer in 1967 in captive research facilities in Colorado. Endemic CWD has been sustained in free-ranging cervid populations for decades. Other TSE diseases that have been identified worldwide include but are not limited to: Bovine Spongiform Encephalopathy (BSE), Creutzfeld Jacob Disease (CJD), Scrapie, and New Variant Creutzfeld Jacob Disease (NVCJD).

All of these TSE diseases are considered separate diseases, although they may cause similar clinical signs in their hosts.

There are currently no laboratory tests available for diagnosing the disease in live animals. CWD is diagnosed
through various techniques on dead animals. Specific histological lesions can be observed in the brain when examined microscopically. Immunohistochemistry also is used to identify the presence of prions in association with specific lesions.

Transmission of CWD is possible in similar species but it is not likely to jump from one animal species to another. There is no evidence at this time that CWD can be transmitted to livestock or animals other than deer or elk. To date, there is no evidence that CWD can be transmitted to humans. Ongoing research is being done to better understand transmission of CWD among all species.

On April 25, 2002, the Michigan Department of Agriculture (MDA) implemented a 1-year ban on all imports of deer and elk into Michigan due to CWD concerns. Previously, Michigan law prohibited the importation of any deer or elk from a county or adjoining county in any state or province where CWD had been diagnosed. In addition, cervids brought into Michigan were required to have a pre-entry permit, accompanied by a health certificate and statement from an accredited veterinarian attesting that the animals had not been exposed to CWD.

In addition to the Michigan Department of Agriculture’s mandatory surveillance of farmed deer and elk, the Michigan Department of Natural Resources is planning an extensive 2002 CWD surveillance survey of the state’s wild deer and elk herds.

Farm Security and Biosecurity

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olice in upstate New York have been investigating a rash of product tamperings on dairy farms, as one or more persons has been sneaking onto dairy farms and apparently putting antibiotics into milk bulk tanks and injecting cows with the drugs.

The tampering has ruined about 44,000 gallons of milk worth about $49,000 to farmers, according to New York state police. There are no suspects in the 14 cases under investigation since last fall. Authorities said none of the tainted milk made it to store shelves because milk is tested for antibiotics before being unloaded from the trucks that take it to processing plants. Milk tampering is just another reason to use biosecurity measures.

First released last year in response to the outbreak of foot-and-mouth disease (FMD) in Great Britain, National Milk Producers Federation’s (NMPF) Top Ten Biosecurity Tips provide some guidance on how to maintain a healthy, secure dairy herd.

1. Maintain a healthy herd with proper biosecurity protection. The best biosecurity protection is a healthy, closed herd.

2. Do not purchase any animals from any foreign country or source where cattle may have been exposed to a foreign animal disease such as FMD. Do not purchase replacement animals from domestic sources without determining the herd health status.

3. Do not allow any visitors on the farm if they have been outside the continental United States in the past 2 weeks, unless you can verify that they have not been in close contact with any cloven-footed animal for the past 5 days.

4. All visitors should be wearing clean clothing (preferably dry cleaned) or disposable outer coveralls (cloth or Tyvek) and be required to wear disposable plastic footwear covering.

5. Implement a quarantine program for all newly purchased animals before introducing or exposing them to any animals in the herd. Develop an appropriate quarantine plan in consultation with your veterinarian.

6. Clean, disinfect, and maintain all livestock treatment and handling equipment in a sanitary condition at all times.

7. Immediately report to your local veterinarian or State Veterinarian any signs of blistering on the nose and mouth of any animal, including excessive salivation.

8. Restrict unauthorized visitors and vehicles from entering any animal production related area. All visitors should sign in and out and be escorted while visiting the operation.

9. Implement precautions to assure compliance with the FDA Ruminant Feed Ban.

10. Implement an active fly, rodent, bird, and wildlife control program. Avoid feed bunk exposure to wildlife, if at all possible. Prevent urine and feces excrements from dogs and cats from contaminating feed and feed bunks.

Additional information on dairy security can be found in the Government & Industry Issues section under the heading, Animal Health, at NMPF’s website: www.nmpf.org/gov.

(The above article was first published in the April 15, 2002 edition of the NMPF’s bi-weekly newsletter and is published here with permission.)

Editor’s Note: To further protect your livestock (or farm) from tampering, take precautions to limit access by potential vandals to your cows and bulk tank. Gates placed at farm entrances and locks on animal housing and the milking parlor are suggested. A lock on the bulk tank lid also can be added. Make sure that the animal housing and milking parlor areas are well lighted.

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The Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) was signed into law on May 13. Many provisions will affect dairy farmers. The largest direct effect will come from the National Dairy Market Loss Payments. These payments are similar to the target price-deficiency payments that were used previously only for commodities such as corn. The new farm bill mandates that all dairy farmers will receive payments of 45% of the difference between $16.94/cwt and the Boston Class I price. Monthly payments will be made to producers up to 2.4 million pounds of milk per year. These payments are retroactive to December 2001 and are to continue through September 2005.

There are many unresolved issues surrounding these payments such as whether producers will be paid on the first 2.4 million pounds regardless of the month or, instead, the payments will be distributed across months. Because the price differential varies across the year, most producers would prefer to be paid in months when the differential—and therefore the payment—is largest. Other issues exist such as whether farms can be split with, for example, each partner receiving a payment. The USDA will sort out these issues by sometime around the middle of July, 2002. Farmer sign-up through USDA’s Farm Service Agency (FSA) will be required. A payment for the first 6 months is set at 89 cents per hundredweight.

These payments are expected to result in increased milk production relative to the level that would have existed without the 2002 Farm Bill.

Michigan Agricultural Environmental Assurance Program (MAEAP), this program should help farms make the investments to ensure environmentally sustainable production.

Finally, crop programs are likely to continue to encourage large amounts of corn and soybean production, which will result in continued low feed prices. Most dairy farmers also produce crops so that the crop payments are important. The crop programs are more complicated than the dairy payments as several issues with respect to how base acres are determined require strategic decisions by each farm.

Net Effect
The net effect of the 2002 Farm Bill should be more milk. As you have likely noticed, prices are off substantially from 2001 levels. This is due to a combination of increased milk production and a less than adequate increase in consumption. With school recessing, this is the time of year when the milk production flush really kicks in and prices are expected to be low. However, barring a major weather event (and we are probably getting late for that already), the outlook is for continued low milk prices. The government has almost a billion pounds of non-fat dry milk in inventory. Butter and cheese prices are weakening and milk price forecasts for the fall months are being revised downward. While a milk price year similar to 2000 is unlikely, the current outlook is lower than anticipated earlier this year.

New Farm Bill and Milk Market Outlook

Christopher Wolf
Dept. of Agricultural Economics

Other Provisions
Because of the expected increase in quantity of milk produced, the other farm bill provisions are especially important. Other dairy provisions include an extension of the Price Support Program for 6 years at current price levels. The Dairy Export Incentive Program was continued; reporting of dairy product inventories is now mandatory; and importers of dairy products are now required to pay the 15-cent promotion assessment. Expect the import assessment to be challenged in court.

Other provisions outside of the dairy title that may affect dairy farmers include a large amount of funding, $1.3 billion, for the Environmental Quality Incentives Program (EQIP). This program, also administered by FSA, provides technical and financial assistance for farms incorporating conservation measures (e.g., filter strips). With increased environmental pressure and existing programs such as the Michigan Agricultural Environmental Assurance Program (MAEAP), this program should help farms make the investments to ensure environmentally sustainable production.

Finally, crop programs are likely to continue to encourage large amounts of corn and soybean production, which will result in continued low feed prices. Most dairy farmers also produce crops so that the crop payments are important. The crop programs are more complicated than the dairy payments as several issues with respect to how base acres are determined require strategic decisions by each farm.

Net Effect
The net effect of the 2002 Farm Bill should be more milk. As you have likely noticed, prices are off substantially from 2001 levels. This is due to a combination of increased milk production and a less than adequate increase in consumption. With school recessing, this is the time of year when the milk production flush really kicks in and prices are expected to be low. However, barring a major weather event (and we are probably getting late for that already), the outlook is for continued low milk prices. The government has almost a billion pounds of non-fat dry milk in inventory. Butter and cheese prices are weakening and milk price forecasts for the fall months are being revised downward. While a milk price year similar to 2000 is unlikely, the current outlook is lower than anticipated earlier this year.
In a previous article, (What Do Dairy Cows Have in Common with Chickens and Lake Michigan? May 1999), we hypothesized that development of precise methods to artificially control ovarian follicular waves, and dominant follicle growth during each wave, would improve success of fixed-time artificial insemination (AI) and superovulation for embryo transfer. However, we didn’t discuss that another important benefit of controlling follicle waves is that it may provide a method to slow the “tick-tock” of the ovarian biological clock of dairy cows, which could extend their reproductive life span and reduce culling rates, allowing dairy farmers to keep cows longer instead of having to replace some cows prematurely with expensive replacement heifers.

The Biological Clock and Follicular Waves

Dairy heifers are born with about 100,000 eggs. As heifers age, numbers of eggs are depleted rapidly and are never replenished! By the time cows reach 4 to 6 years of age, they have lost greater than 95% of their eggs. This could be a factor in getting cows rebred as they age.

Let us explain the potential importance of follicle “waves” to a cow’s biological clock. Follicles contain the eggs in the ovary, and these follicles grow in waves. Follicle waves not only occur during estrous cycles, but also before puberty, during pregnancy, and after calving. During each 7- to 10-day wave of follicle growth, an average of 24 follicles per wave begin growth, but only a single “dominant” follicle reaches ovulatory size. An average estrous cycle will have two to three of these waves, with only one wave producing a dominant follicle that will ovulate a mature egg near estrus. Alternatively, if a wave occurs at any time other than estrus, the dominant follicle and all other follicles in the wave always die. Consequently, follicular waves are very inefficient because the death of nearly all follicles in waves wastes potentially valuable eggs that might become embryos. Our laboratory is attempting to discover ways to control follicular waves to improve reproductive lifespan of dairy cattle.

Important Questions to Answer

From the information just presented, two key questions emerge. Is it possible to develop methods to prevent or slow down follicle waves? Would prevention of follicle waves preserve eggs and extend the reproductive life span of dairy cows?

Can follicle waves be prevented? The answer is yes! Follicles are stimulated to grow in waves by a hormone produced by the pituitary gland called follicle stimulating hormone (FSH).
hormone or FSH. Endocrinology studies, (studies of hormones and their actions), coupled with ultrasound analysis of follicle growth, demonstrate that a transient increase in concentrations of FSH in blood occurs just before each follicle wave begins in heifers, as shown in Figure 1. If drugs are used to block FSH secretion, cows will not have follicle waves and will not ovulate.

Will prevention of follicle waves preserve eggs, prolong reproductive lifespan, and ultimately reduce the culling of dairy cows for reproductive reasons? As far as we know, no one knows the answer to this question. Nevertheless, let’s suppose for argument’s sake that we demonstrate that prevention of follicle waves preserved follicles and thus eggs, enhanced reproductive lifespan, and reduced culling rate for reproductive problems from 25% to 10% per year. Should we all be jumping for joy? Well, perhaps we should. However, another hurdle remains. Our new reproductive management therapy would have to be safe, cost-effective, easy to administer, and it would have to receive approval from USDA or FDA before it can be used commercially. All the aforementioned time, effort, and expense to develop methods to suppress follicle waves, however, would clearly be a worthwhile endeavor if it provides a new reproductive management tool to dairy producers.

Let us end this article by emphasizing that our future studies are designed to attempt to understand whether the tick tock of the dairy cow’s ovarian biological clock can be slowed by inhibition of follicle waves, how long the cow’s biological clock can be extended, and whether prolonging the dairy cow’s biological clock enhances its reproductive performance. We believe that answers to these questions possibly could lead to development of new methods to prolong the reproductive lifespan of dairy cows, which could reduce culling rates and replacement costs to dairy producers.

Facilities and Environmental Management

Building Good Neighbor Relations

Paul Wylie
MSUE Ag/Natural Resources Agent

Developing and maintaining good neighbor relations is an important and continuous job for all livestock and poultry producers. There are certain characteristics to animal farming that come up again and again as objectionable to neighbors. The top two are odor and flies. They are followed by spills on the road, run-off water carrying manure that leaves the farm, and well water contamination. Let us take a look at these concerns and how farmers can minimize annoying their neighbors.

Things that Make Neighbors Unhappy

Odor is a subjective human response to what one smells. Studies suggest that to manage odor, farmers need to consider F.I.D.O. This stands for frequency, intensity, duration and offensiveness. Reducing odor problems can be managed by reducing the number of times that neighbors smell your farming practices. Usually this can be achieved by limiting the times manure is applied near a neighbor or by locating animals and manure storage as far away from houses as possible. Intensity has to do with how strong an odor is. Intensity is diminished by distance and dilution. Duration has to do with how long odors are present. Strong odors for a short period of time (hours) are usually considered less objectionable than a lighter odor for a long time (days). Offensiveness has to do with how objectionable something smells. Fresh manure usually is judged to be less offensive than manure from long-term storage, for example. Corn silage has a strong odor, but usually isn’t offensive to most people. Silo juice, however, can be very objectionable.

Fly problems often are at the beginning of neighborhood feuds. It may be difficult to say for certain that filth flies originate at a certain farm, but they upset neighbors who are then on the lookout for the least infraction of good farming practices to turn in complaints.

Manure spills on the road can upset neighbors quickly. The same applies to soil tracked out on the road. Consider that non-farm people may have a higher standard of automobile cleanliness than farmers do.

Most rural residents get their drinking water from wells. Water is essential to health and can be degraded by farm practices. A soluble form of nitrogen, nitrate-nitrogen, can leach down through the soil to unprotected aquifers. At 10 ppm or more nitrate in the drinking water of small babies and elderly people can be toxic. Another concern is contamination by germs from manure. Unless manure is back siphoned to aquifers, a leaking casing is usually at fault. Fortunately this is a rare problem.

Manure that leaves the farm and flows across the surface to a neighbor’s land will create a problem. The usual causes are spills, leaking storage and run-off from heavy rainfall or melting snow from fields where manure has been applied to the surface and not worked into the soil.

How Farmers Can Minimize Complaints

First of all, how do you look? A trashy and unkempt farmstead will raise suspicions about you. Neighbors think if you look like a slob, you must be one. Once again realize that other people may have a much higher standard for looks than you do. Take a look at business and industry locations. It may not be fair, but that is what you are compared with. At the least, mow the grass regularly and keep junk out of view. Keep
Dairy Nutrition and Feeding

New Feed Management Software

Herb Bucholtz
Dept. of Animal Science

Computerized feed management software systems are available commercially. These software systems are added to a Total Mixed Ration (TMR) mixer’s scale with a computer located in the mixer’s truck or tractor cab. These systems allow the feeder, farm’s management or nutritionist to adjust ration batch sizes based on changes in ingredient dry matter contents on a daily basis as needed. In addition, data can be collected by the software in monitoring a dairy farm’s entire feeding program.

Software Functions

Currently four commercial software programs are available as tools to help manage the daily activities involved with mixing TMRs and monitoring of a dairy farm’s feeding program. These software programs are incorporated into a computer system that is added to the TMR mixer’s scale. This system can be interfaced to the farm office by wireless radio frequency or by computer disk. Some software programs even allow for interfacing via e-mail. Dairy farm managers and nutritionists...
can use these programs to help assure that all TMRs will be mixed correctly, and any changes to TMR mix formulations can be made quickly and accurately.

The goal for the dairy herd’s feeding program is that all rations will be mixed by the feeder in the amounts or proportions as formulated by the nutritionist, and the cows also will consume that ration as formulated by the nutritionist. It is a challenge to ensure that dairy cows will consume a TMR because cows have the ability to sort and separate a TMR and consume only what they decide to eat. However, the dairy farm’s and nutritionist’s goal should be that the feeder will mix every TMR batch as accurately as possible following the nutritionist’s formulations. The software programs are a management tool that can update TMR mixes immediately so the feeder always will be using the most current ration-mixing instructions. The programs will record the entire mixing process for each batch. This gives the farm’s management and nutritionist greater quality control of feeding management.

Program Functions Useful to Feeder on a Daily Basis

Every day the dairy farm’s feeder has the challenge of mixing all of the TMR batches as accurately as possible. Perhaps two of the most useful functions these software programs have for the feeder are the ability to update ingredient dry matters and to adjust TMR batch sizes to account for fluctuations in feed intake.

When the dry matter of an ingredient changes, the feeder should update the as-fed pounds of that ingredient added to the mix. If that doesn’t occur, the mix is not the same as the nutritionist formulated on a dry matter basis. The software programs allow the feeder or the farm’s management to enter into the computer at the mixer an ingredient’s new dry matter, and all batches using that ingredient will be updated. These functions also can be done via the farm’s office computer and transmitted to the mixer scale’s computer by wireless radio frequency or by computer disk.

Another challenge a feeder encounters every day is the need to increase or decrease size or the total pounds of a TMR batch. This requires the feeder to do some calculations or rely on having batch mixing sheets printed for different size batches, both of which increases the possibility for errors or it not being done. The software programs allow the feeder to change total batch sizes and have the new pounds of each ingredient displayed on the mixer’s scale display.

Program Functions Useful on a Daily Basis

In addition to updating ingredient dry matters and batch sizes, the programs can provide the nutritionist and the farm’s management with daily monitoring on: pen or group dry matter feed intakes, feed refusals, feeding times, batch mixing time, mixing errors and feeder’s performance measures. The data can be displayed on a computer screen or printed and presented as a table or graph.

Other Functions of the Software

These software programs also can monitor ingredient inventory, predict inventory reordering needs, compute feed cost and income over feed cost, and other functions. Each company offers slightly different additional software functions that are unique to that particular software, and their appeal to a particular farm should be evaluated.

Skill Needed to Operate the Software Programs

Like any computer software these programs require the users to learn how to use the programs. Most of the software companies provide on-farm training. Farms considering purchasing a program should consider the training of the feeders that will use the program at the mixer as well as training of the farm’s management personnel. I have used and reviewed these programs, and they are easy to use.

These programs will require a computer located in the truck or tractor cab that interfaces with the mixer’s scale and also a computer in the farm office. The software companies provide computer system recommendations.

Approximate cost for the software packages range from $3,500 to $10,000.

Feed Management Software Companies

Following is a list of the companies that market the software programs.

**EZfeed™**
DHI Computing Service, Inc. P.O. Box 51427
Provo, UT 84605-1427
800-453-9400, ext. 6704
801-374-5316 (fax)
www.dhiprovo.com

**Feed Supervisor®**
1733 - 90th Avenue
Dresser, WI 54009
888-259-8949
715-755-3739 (fax) www.feedsupervisor.com

**Feed Watch™**
Valley Agricultural Software
442 North O Street
Tulare, CA 93274
888-225-6753
559-686-6253 (fax) www.vas.com

**TMR Tracker®**
Digi-Star
790 West Rockwell Ave.
Ft. Atkinson, WI 53538
800-225-7695
920-563-9721 (fax) www.digi-star.com
Q and A: Forthcoming Spartan Dairy Ration Program 3.0

Mike VandeHaar and Bob Kriegel
Dept. of Animal Science

The purpose of this article is to inform you about what the Spartan software development team is doing. We shall explain a bit about the 2001 version of the Nutrient Requirements of Dairy Cattle published by the National Research Council (1) to help you understand why we don’t have a new program yet, and why we have developed new equations for a Spartan Dairy 3.0 program to work effectively and efficiently as a ration formulator.

Q: Where is the new Windows version of Spartan Dairy, and does it use the new NRC guidelines for feeding dairy cattle?
A: We are hard at work developing a new version of Spartan Dairy Ration program and recently received a grant from the Michigan Animal Initiative Industry Coalition to complete the program. The new program will be based on the 2001 Dairy NRC, but more importantly, the new program will be Windows-based. As we shall discuss later, the 2001 Dairy NRC has been a challenge to implement in a ration formulation program. But we recognize that people want a program that uses the latest nutritional guidelines, and certainly a Windows-based Spartan Dairy program is needed to continue to improve the nutritional management of Michigan dairy farms.

Q: What is the history of Spartan Dairy 2.0 and how is it doing?
A: Dairy nutritionists at Michigan State University have been involved in creating dairy ration balancing software for 20 years. Spartan Dairy 1.0 was released in the mid-1980’s, and Spartan Dairy 2.0 was released in late 1992. Spartan Dairy 2.0 is a stand-alone DOS spreadsheet computer program with a linear program optimization module and on-line help. It was based largely on the 1989 Dairy NRC (2) and has become one of the most widely used ration balancing programs in the U.S. dairy industry. About 4,500 copies have been sold, and at least 20 U.S. land-grant universities use Spartan Dairy 2.0 in their teaching programs. Many institutions in other countries use Spartan Dairy as well.

Q: What are some characteristics we can expect in Spartan Dairy 3.0?
A: For the advancement of the dairy industry and in keeping with the mission of Michigan State University, we believe the new Spartan Dairy 3.0 program must incorporate several characteristics.

1. It must be up-to-date in its technical nutritional equations and in its computing framework.

2. People with various levels of computer and nutrition experience should be able to use the program easily and effectively to evaluate and formulate dairy rations in a reasonable time.

3. It must teach nutritional concepts and encourage farmers, nutritional consultants, and university extension personnel to work together more cooperatively and help move the feed industry toward an emphasis on service rather than trade secrets. One way we do this is by not allowing feed values and assumptions to be hidden in the Spartan Dairy programs. Most commercial dairy ration balancing programs do not have the same emphasis on open standards, education, and outreach efforts to improve the dairy industry as does Spartan Dairy software.

4. It must help create new knowledge. The development of Spartan Dairy software helps us determine where new nutrition information is needed most critically. We shall include several nutrient columns (including starch, soluble fiber, and lipid fractions) for which we do not have target dietary values. With feedback from users, we hope to find out what values are optimal for milk production and growth. These optimal field values will provide initial information for designing future experiments.

5. The new program must help improve nutrient management on farms. Nutrient output from cows is often considered to be a fixed value per cow. Our goal is to calculate waste output based on feed inputs and products to help farmers and consultants determine the amount of waste nitrogen and phosphorus that are produced by a farm per day. This was not a feature of Spartan Dairy 2.0.

Q: What are some specific features we can expect in Spartan Dairy 3.0?
A: Much of the new program will be similar to Spartan Dairy 2.0—it will include an animal nutrition model, feed library editor, ration worksheet, ration autobalancer, and report generator. The program will be a Windows-based application and take advantage of Windows support for computer networks and printers. The feed library editor and ration worksheet will operate much like they do in Spartan Dairy 2.0. To make it easier for our software to interact with other programs, data will be stored in Microsoft Access database files. Users will be able to work on multiple rations at a time and move feeds among them. Users also will be able to import/export feed information from or to Microsoft Excel—this will be especially useful for automatically loading results from feed analyses into the program. The program will include pop-up menus, on-screen hints, online help, cut/copy/paste capability, and the ability to customize many settings. Some examples of the new program’s user interface can be seen in Figures 1 and 2.

Q: So what have we been doing and when do we expect this new program to be released?
A: Development of Spartan Dairy 3 began in late 1996 (see Figure 3 on page 16), but it will take another 2 years for us to
complete development and testing to have a new product ready to deliver. In 1997, plans for a new Dairy NRC were announced. In early 1999, the NRC announced that its new guidelines would be released in April 2000, and we decided to wait for the new NRC guidelines before completing Spartan Dairy 3.0. In late 1999, we learned that the mineral model would be much different than the 1989 Dairy NRC, and we began implementing the expected changes. In summer 2000, we discovered that the energy and protein models of the new NRC also were radically different, and we began thinking about how to implement these changes. Upon the official release of the new Dairy NRC in February 2001, we began the arduous work of fully dissecting and understanding all of the new equations. A large Excel spreadsheet was developed that incorporates all of the equations of the new and old NRC models along with modified equations, and this spreadsheet is being used to test the proposed Spartan Dairy 3.0 animal nutrition model. We also developed test programs for our new feed library and several components of the ration worksheet and animal models.

Compared with the 1989 Dairy NRC, the 2001 NRC is a significant advance when evaluating rations already fed to cows, but it is difficult to implement effectively for formulating new rations. This problem was outlined in a presentation at the 2002 Tri-State Dairy Nutrition Conference (3). We also held an in-depth workshop to discuss these issues with MSU Dairy Extension Agents in May 2002. We are confident that with the release of Spartan Dairy 3.0 for Windows, MSU will continue its reputation as a leader, among educational institutions for practical and relevant dairy nutrition software.

Q: What are some of the problems with using the 2001 Dairy NRC?
A: The 2001 Dairy NRC contributes significantly to the science of dairy nutrition, but we have found three major
challenges in trying to use the new energy system in a ration formulation program. These problems are the digestibility discount factor, the energy value of protein, and the fiber digestibility prediction (see VandeHaar, 2002, for a more detailed discussion). In the 1989 Dairy NRC, each feed was assigned a single energy value that was used for all animals, but in the 2001 Dairy NRC, feed energy values are not constant. The 2001 Dairy NRC uses concentrations of neutral detergent fiber, protein, fat, and nonfiber carbohydrate in a feed along with predicted digestibilities of each fraction to calculate an energy value for the feed. More importantly, the 2001 NRC discounts the digestibility of feeds as animals eat more per day and as the diet contains more concentrates. The 1989 NRC was known to overestimate the energy value of feeds for high-producing cows, so the new energy system is helpful when evaluating diets, but it is difficult to use when formulating new rations. Moreover, the 2001 Dairy NRC overvalues the energy obtained from protein and uses equations to calculate the energy value of forages that are inaccurate (the 2001 NRC overestimates the digestibility of fiber from corn silage and underestimates the digestibility of fiber from alfalfa). There also were challenges in the protein system of the 2001 Dairy NRC. In the end, when using the 2001 NRC to formulate rations for high producing cows, a diet with 80% forage would be nearly as good as a diet with 60% grain, and the only way to meet the energy requirement for a cow producing 100 lb of milk per day would be to feed fat or to feed a diet containing 30% protein. Our philosophy for the Spartan Dairy programs always has been that the most important goal of a ration formulation program is to help the user develop a reasonable diet in a relatively short period of time so that the farmer and nutritionist, working together, can modify that diet after monitoring the responses of the cows.

Thus, our options in developing Spartan Dairy 3.0 were: 1.) to abandon the 2001 Dairy NRC energy and protein system completely and simply use the 1989 Dairy NRC; 2.) to use the 2001 Dairy NRC energy system knowing that it would result in diets that we could not recommend; or, 3.) to take the time to modify the equations in the 2001 Dairy NRC to improve ration formulation on farms. We chose the latter, and we hope that our current users will be patient in waiting for the final product.

Summary

Version 3.0 of the Spartan Dairy Ration program is being developed and is expected to be released in 2004. Spartan Dairy 3.0 will be Windows-based and include many new features but retain the features that made Spartan Dairy 2.0 successful. The nutritional equations in Spartan Dairy 3.0 will be based on the 2001 Dairy NRC; however, the energy system of the 2001 Dairy NRC has been modified so that it can be used effectively in a ration formulation program.

References


Spartan Dairy 2.02 Program Support

The Spartan web site at http://www.msu.edu/user/ssl contains up-to-date information on the Spartan Dairy Ration program, customer support information, frequently asked question fact sheets (FAQ), and a free downloadable demonstration version of the program. Spartan customer support can be reached by e-mail at ssl@msu.edu, or by phone at (517) 432-1678.

The current version of the Spartan Dairy Ration program is 2.02b. Version information is displayed in the lower left corner of the program’s startup screen. Earlier versions of Spartan sometimes crash on computers running at 800 MHz or faster (runtime 202 error). If you are experiencing this problem, contact Spartan customer support and we’ll send you a free replacement disk containing v2.02b. Please include your full name, complete mailing address, and your product serial number with your request. The serial number starts with ‘CP012’ and is printed on the original diskette. If you entered it during product installation, the serial number also is displayed on the program’s startup screen.
Some Spartan users have experienced problems printing from our program, especially on computers running Windows 2000, ME, or XP. The root of this problem is two-fold. First, some printers on the market are ‘Windows ONLY’ printers and do not support printing from DOS applications, such as Spartan Dairy Ration 2.02. Second, Microsoft began reducing support for printing from DOS programs beginning with Windows 2000.

Even if you cannot print directly from Spartan, there is a way around this problem. Instead of printing directly to a printer, print your Spartan report to a file, and then load the file into a word processor for printing as follows.

1. In the Spartan printout settings dialog change the ‘destination’ from printer to disk. Also, this is easier if “condensed print” is turned-off.

2. When you press F2 to print the report, you will be prompted for a filename of 1 to 8 characters. The program will automatically append the extension ‘.PRN’ to the filename. Write the file to the folder where your rations currently are being stored, and return to the worksheet.

3. Run a word processor such as MS Word and open the Spartan report you saved to disk. By default Spartan saves rations (and reports written to disk) to the folder ‘C:/SPARTD2/DRT’. If you cannot find the file, make sure that your word processor is displaying all files (‘*,*’).

4. Once the file is open, if the columns don’t line up vertically, change from a proportional font to a fixed width font. To do this choose “Edit|Select All” from the word processor’s main menu to highlight the entire document. Then set the font to “Courier.” You also can change font size or margins, add a message, or use a letterhead.

5. Print the document.

A word processor also is a great way to make batch sheets easier to read. If you set the page layout to “landscape” mode and increase the font size, you will be able to read the mix sheet from several feet away. More detailed instructions for printing from Spartan and other useful tips can be found online in the FAQ section of the Spartan web site.

**Industry and University**

**A Tribute to Roger Mellenberger**

*Roy Fogwell*
Dept. of Animal Science

After 30 years as a teacher and extension specialist at Michigan State University (MSU), Dr. Roger Mellenberger has retired. I was fortunate to have Roger as a colleague, advisor, and friend for 25 years. I am pleased to offer this tribute to his professional activities and contributions.

Roger spent his entire career at MSU. His professional activities involved teaching students at MSU and educating adults throughout the dairy industry in Michigan. Roger taught many aspects of dairy management, but his specialty was mastitis. It may surprise some people to know that Roger’s doctoral training was in nutrition and liver biochemistry. It was this basic science training that provided Roger with the expertise to understand the basic biology that supported many new advances.

**Husbandry and Udder Health**

From his background on a dairy farm in Wisconsin, Roger developed and retained a genuine and passionate interest in cows and everything that supports successful dairy farms. With high enthusiasm for all things related to dairy, Roger engaged in many aspects of dairy management, but he was not a generalist. There should be no doubt that his focus was to enhance mammary health and quality of milk with special attention to milking systems, milking procedures, and husbandry to support animal health. As you probably learned from Roger, many aspects of management affect udder health of cows. Therefore, Roger addressed diverse aspects of management including nutrition, reproduction, vaccinations, facilities, and finances in order to make progress toward better mammary health of dairy cows.

Dr. Mellenberger was quite adamant about the relationship between husbandry and udder health. In fact, he was one of the early proponents that high quality management would reduce the incidence of mastitis and reduce drastically the use of antibiotics to treat mastitis.

**The People Approach**

Roger was a responsible professional. So, he was informed and current in many aspects of dairy management and dairy science. His approach to dairy extension emphasized interaction with people. His philosophy or strategy was that the future welfare of the dairy industry would require knowledgeable people. Roger is extroverted and gregarious so he was very comfortable making new acquaintances. He had an excellent ability to remember names and details about people. Consequently, Roger knew many people including field extension personnel, veterinarians, personnel with milk marketing organizations, and many dairy
Directly in the future of the Michigan Dairy Industry. As an instructor, Roger had many attributes. He was informed on academic, technological, and practical aspects of the subjects that he taught. He emphasized principles so that students would have greater understanding and retention. He encouraged informed adoption of new technology. Possibly most important, Roger taught students to think critically and to distinguish cause from effect. These characteristics about Dr. Mellenberger were major positives for his students at MSU.

Up Close and Personal

There is one exceptional feature about Dr. Mellenberger, the teacher, that warrants a more detailed description. Early in every semester, Dr. Mellenberger met individually with each student in his class. In this session, Roger learned about the background, personal interests, and most important the professional goals of every student. From these sessions, Roger evolved into their mentor. Based on the goals, strengths, and weaknesses of a student, Roger would challenge students to achieve their potential. Sometimes this meant that students should critically review their goals. As part of this process, Roger was very proactive to guide students to people and opportunities that would lead eventually to achieving their goals. It was important and valuable to students that Roger recognized and appreciated differences among individuals. This allowed students to grow and develop professionally according to their personal goals. As an academic advisor Roger went far beyond the mechanics of what courses to take. He truly attended to the question for students, “What do you want to do when you leave MSU?”

As a person, Roger is honest in every way that this quality can be evaluated. In addition, Roger is generous and very willing to share almost anything. During his career at MSU, he balanced his time between work and outdoor recreation. Roger frequently included fishing or hunting as part of travel for an extension meeting or a farm visit. However, there should be no doubt that family was and still is his first priority. In fact, Roger’s high priority to family probably enhanced his sensitivity to the challenge that dairy managers face as they attempt to balance their time and energy between their family and their cows.

In retirement, Roger and his wife, Dee Dee, will reside in Wisconsin. There certainly will be excursions to Michigan to visit his four children and to enjoy the natural resources of our state.

I would like to use this opportunity to congratulate Roger on his career at MSU. On behalf of the Department of Animal Science and the entire dairy industry, I want to thank Roger for his vision, his enthusiasm, and his numerous contributions. Finally, there must be appreciation and respect from hundreds of students who, because of Dr. Mellenberger, learned about dairy science and most important they learned about themselves.

A Problem Solver

As an extension specialist, Roger was respected for his knowledge, expertise, and especially for his ability to identify underlying causes for problems. Roger also was known and respected because in all things he was forthright and honest. People did not have to guess about his position on an issue. Consequently, Roger was not always popular. Dr. Mellenberger received several awards for his professional activities but he had little interest in personal glory. Rather, his agenda was continual improvement of the Michigan Dairy Industry.

With continual changes in regulations and technology for dairy, programs from Roger were informed, current, and attentive to implications of these changes for the dairy industry. His programs affected many people throughout Michigan. In addition to many educational programs around our state, Roger consistently made significant contributions within MSU such as reviewing operations for extension, revising the Dairy Science curriculum for students, and planning future educational programs. Roger was a leader and an active participant in dairy educational programs for MSU and the entire state of Michigan. Whether presenting a talk or planning a program, Roger was insistent that the content should include practical considerations and also explain the biological reasons why a procedure was important or should be performed in a certain way. So, Dr. Mellenberger encouraged his audience to increase their basic knowledge, to strengthen understanding, and to maintain progressive skills.

Instructor With Many Hats

During his career at MSU, Dr. Mellenberger taught several different dairy-related courses. In the last 10 to 15 years, most of his students were enrolled in the two-year Agricultural Technology program for dairy. Working with these students seemed almost strategic because it allowed Roger to invest directly in the future of the Michigan Dairy Industry. As an instructor, Roger had many attributes. He was informed on academic, technological, and practical aspects of the subjects that he taught. He emphasized principles so that students would have greater understanding and retention. He encouraged informed adoption of new technology. Possibly most important, Roger taught students to think critically and to distinguish cause from effect. These characteristics about Dr. Mellenberger were major positives for his students at MSU.

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MSU Runner-up in North American Intercollegiate Dairy Challenge
Miriam Weber Nielsen
Dept. of Animal Science

A Michigan State University team took Reserve Champion honors in the first-ever North American Intercollegiate Dairy Challenge held at MSU on April 12-13, 2002. The dairy management contest tests students’ skills and knowledge of all aspects of a dairy business in an interactive, educational and fun contest. Students on the MSU team were Cindy Byma, a May graduate of the Ag Tech dairy program from Grant; Kristy Daniels, a senior in Animal Science from Sterling; Emily Green, a senior in Agriscience Education from Elsie; and Gabe Papoi, a sophomore in Agribusiness Management from Charlotte and a May graduate of Ag Tech dairy program. The team was coached by Joe Domecq and Miriam Weber Nielsen.

Students Conduct Farm Visits

Fourteen four-person teams from universities across the nation visited one of two dairy farms at the start of the contest. Students were given selected farm records and then walked through the farm operation. After the farm visit, each team had the opportunity to interview the farm manager. In addition, students were provided with a laptop computer containing an electronic version of the herd’s production records. Each team then prepared a 20-minute presentation of their assessment and recommendations for a panel of judges and sponsor representatives, with an additional 10 minutes for questions from the judges.

Top honors were taken by University of Minnesota and Virginia Tech, with each team receiving a $2,000 cash scholarship. Iowa State University and Michigan State earned the runners-up awards and $500 cash scholarships. Other participating universities included Texas A&M, Pennsylvania State University, Cal Poly, Washington State University, University of Wisconsin at Madison, University of Wisconsin at River Falls, University of Idaho, The Ohio State University, and The State University of New York at Morrisville.

Contest Prepares Participants

The Dairy Challenge was created to enhance the education and preparation of students for careers in the dairy industry. Michigan State University has partnered with the dairy industry since 2000 to stage an annual Dairy Challenge that combines the idea of a competition with concepts of farm evaluation used in dairy farm management classes at universities. A year later, a similar local contest was held at The Ohio State University.

With leadership from a steering committee of dairy industry enthusiasts, the event was expanded to a national competition. Members of the steering committee recruited over $50,000 from the dairy industry to fund contest activities and to provide travel support to universities. As one team’s coach stated, “The fantastic financial support from the dairy industry was greatly appreciated in these times of dwindling state higher education budgets...we hope the concept will become an annual event.”

It’s a Group Effort

The national contest required much assistance from many people, including the MSU Department of Animal Science, Dairy Extension, and representatives of the dairy industry. The two contest farms were Centennial Acres, owned by Matt and Linda Arends, and Lew-Max Farms, owned by Ken, Jane and Aaron Gasper. Jim Sipiorski of NorthStar Cooperative served as the contest superintendent.

The students representing MSU in the national contest were selected at the local MSU contest held February 22-23. The contest farm for the local event was the Larry Simon Farm near Pewamo. The winning team received a $1,000 cash scholarship and consisted of Cindy Byma; Rachel Girbach, Saline; Gabe Papoi; and Holli Rosekrans, Ionia. The runner-up team, which received a $500 cash scholarship, consisted of Kristy Daniels; Emily Green; Ann Munsell, Fowlerville; and Attalee Hardy, North Adams. Cargill Animal Nutrition sponsored cash scholarships and meals for the event, polo shirts for all student participants, a gift of appreciation to the Simon farm, and tickets for all contest participants to the MSU Dairy Club banquet where awards were announced. Judges for the local contest were Larry Whipple, Cargill Animal Nutrition; Brian Troyer, Land O’Lakes, Inc.; Dr. Bruce Clark, Monsanto Dairy Business; and Dr. Kevin Dill, Purina Mills, Inc.

Michigan State University will host the national contest again in 2003. In future years, the contest will rotate to other universities around the nation. For additional information on the Dairy Challenge, contact Miriam Weber Nielsen at 517-432-5443 or msw@msu.edu.

Calendar of Events

July 20. A Field Day and Educational Program will be held from 11 a.m. to 3 p.m. at the MSU Upper Peninsula Experiment Station, located near Chatham. MSU Extension specialists will give presentations on the station’s research on brown mid-rib corn silage, legume-grass co-culture, carbon sequestration, and using manure on forage crops. There will be updates on the station’s beef herd and dairy herd reproduction. Demonstrations will focus on the MSU nutrient management computer program, animal handling in the new beef facility, and harvesting forage kaleage or rapelage. The event will conclude with an ice cream social. Lunch will be provided. No registration fee or reservation is needed. For more information, contact Paul Naasz at 906-439-5114 or naasz@pilot.msu.edu.