In recent years there has been renewed interest in the use of managed intensive grazing for beef and dairy cattle. Thinning stands are often a problem in pastures, particularly after a dry summer when over-grazing occurs. Manure slurry seeding is an innovative process that combines low disturbance aeration tillage, manure slurry application and the seeding of cover crops in one efficient operation. A short video of slurry seeding cover crops in wheat stubble can be seen by clicking this link, http://www.youtube.com/watch?v=3st0qZ_3vH0. When applied to pasture and hay crop restoration this new process can increase botanical diversity, yield and quality, and provide a more complete, balanced feed for grazing livestock.

**Methods**

Red clover (medium, 10 lb/ac Pure Live Seed, PLS) was sown in an established Smooth Bromegrass sod (Scout; 10 lb/ac PLS) in a Capac fine sandy loam soil at Michigan State University in East Lansing, MI. The seeding methods compared were: 1) no-till drilled Red Clover; 2) slurry-seeded Red Clover; 3) frost-seeded Red Clover; and, 4) undisturbed check -- no slurry, no aeration tillage (control).

The no-till red clover was sown with a Great Plains no-till drill with coulter openers and trailing semi-pneumatic press wheels in mid-August. The manure slurry seeding was done on the same day as the no-till drilling with a commercially available slurry tanker (3,000 gal) equipped with a rear-mounted rolling-tine aerator (12 ft, Aer-Way, Holland Equipment Ltd. Norwich, Ontario, Canada) and a sub-surface deposition (SSD) slurry.

Seed-laden slurry was delivered through drop-tubes to the loosened and fractured soil behind the aeration tines.
distribution system (picture). A 2.5° gang angle was used for slurry seeding red clover. Red clover was surface broadcast in early March for frost seeding. No additional seedbed tillage or soil firming was used.

The manure slurry seeding process involved mixing red clover seed in the slurry tank and passing the seed-laden slurry through a hydraulically driven, rotating chopper/distributor (300 rpm) with radially configured outlets, and then through drop tubes to the fractured and loosened soil behind each set of rolling tines (Harrigan et al., 2006). Dilute swine slurry (1.02% solids) was applied at 4,000 gal/ac to supply a moderate amount of nitrogen for crop growth, yet avoid excessive competition for light between the existing forage and seeded forages. The application supplied 70 lb/ac total nitrogen (N), 50 lb/ac N in ammonium form and 20 lb/ac N in the organic fraction. No commercial fertilizer was applied.

**Forage Dry Matter Yield**

The total forage dry matter over two growing seasons was significantly greater for no-till (11.2 ton/acre) and slurry seeded (10.3 ton/acre) red clover than the frost-seeded Red Clover (7.9 ton/acre; Figure 1). Compared with the untreated Bromegrass stand, the no-till, slurry and frost-seeded Red Clover plots increased dry matter yields by 105%, 87% and 43%, respectively.

In the first year after seeding, forage dry matter was increased by both the nitrogen in the manure slurry and the nitrogen fixed by the Red Clover. A uniform stand of red clover was expected to supply 40 to 70 lb/ac N to the growing crop. The annual dry matter yield of the no-till (6.0 ton/acre) and the slurry-seeded (5.6 ton/acre) treatments were greater than the frost-seeded and Control treatments. Compared with the untreated control (2.8 ton/acre), the no-till, slurry seeding and frost seeding of red clover increased dry matter yields by 112%, 102% and 43%, respectively. The yield advantage from the nitrogen contribution of the red clover to the Bromegrass stand was clear in the second year after seeding. The Red Clover was not evenly distributed throughout the frost seeded plots. The no-till Red Clover increased forage yield by 96%, slurry seeding by 72%, and frost seeding by 44% compared with the untreated Bromegrass plots. The annual dry matter yield of the no-till (5.3 ton/acre) and slurry seeding (4.6 ton/acre) were not different, but each yielded greater than the frost seeding (3.9 ton/acre).

**Forage Quality**

Forage quality was measured at each harvest and analyzed for crude protein (CP), acid detergent fiber (ADF) and neutral detergent fiber (NDF). Over the 2-year harvest period the CP of the no-till Red Clover was greater than the other treatments and averaged 3.7 percentage units greater than the untreated control. The slurry-seeded Red Clover was also greater than the untreated control (1.9 percentage units). The ADF and NDF were less predictable. The ADF of the no-till Red Clover was lower than the other treatments, but the reduction was great enough to be considered different. The NDF of the no-till Red Clover was less than the other treatments and averaged 5.1 percentage units less than the untreated control.

**Conclusion**

Manure slurry seeding of red clover was an effective way to recycle manure nutrients, increase forage yield and increase the botanical diversity of pasture and hay ground. No-till drilling and slurry seeding resulted in more uniform stands...
Figure 2: The crude protein of the no-till and slurry-seeded Red Clover was greater than the frost-seeded Red Clover.

- Thinning and nutrient deficient stands are most suitable for slurry seeding. Limit the manure application to apply 70 to 100 lb/acre nitrogen to minimize aggressive regrowth of the existing forage and competition with the new seedlings for available light.
- Minimize competition from the existing forage crop by grazing the pasture aggressively in mid-summer and slurry seeding in mid-August.
- Do not traffic or graze the slurry seeded area in the fall. Allow time in the fall for seedling establishment.
- Take the first cutting as an early hay crop the following year if possible. This will prevent damage from hoof traffic to the new seedlings.
- Dilute, flowable liquid manure is most suitable for slurry seeding because it quickly infiltrates and carries the seed to protected micro-sites below the soil surface. Thick, viscous slurries are less suitable because they infiltrate slowly or remain on the soil surface and crust over.

Acknowledgements:
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Editor’s note: References for all articles are available only in the online version at www.msu.edu/user/mdr/.

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The most consistent results with slurry seeding of cover crops have been in wheat stubble, corn silage stubble or other situations where there is little competition from an existing crop. Slurry seeding in existing pasture or hay ground is particularly challenging because the addition of manure nitrogen causes vigorous growth of the existing crop and competition with the new seedlings for moisture, light, exposure and other conditions required for germination and emergence.

Recommendations
Based on the results of our work, we developed the following recommendations for improving pasture and hay ground with slurry seeding.

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Right-to-Farm: Site Selection for New and Expanding Livestock Operations (Part 2)*

Gerald May, Extension Air Quality Educator
Roberta Osborne, Extension Dairy Educator

Introduction

For many farms, winter provides a break from constant outdoor activity and the opportunity to plan for future farm projects. However, on livestock farms the regular animal care responsibilities still need to be done and the challenges of snow and cold weather make every day chores much more difficult to complete. But even the busiest of farms need to plan their upcoming spring and summer activities. For many farms, Spring is the time to plan the summer’s major projects and many livestock farms may be in the midst of planning new animal housing and manure storage facilities.

The Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control for New and Expanding Livestock Production Facilities (Siting GAAMPs) should be part of that planning process. Most farms complete the Site Verification process in order to maintain the protection from nuisance lawsuits provided by the Michigan Right to Farm Act. Farms that move ahead with construction projects without first getting Michigan Department of Agriculture and Rural Development (MDARD) site verification risk losing the protections provided by the Right to Farm Act and in some cases, be forced to shutdown.

Other Advantages:
• Siting GAAMP verification maintains the farm’s opportunity to participate in the Michigan Agriculture Environmental Assurance Program (MAEAP). The MAEAP verification requires the farm to meet all applicable GAAMPs. New and expanded livestock facilities built after August 2003 must meet Siting GAAMP standards to be verified in the MAEAP program. The site verification process remains available for farmers after the project is complete, but this type of planning is always easier when done as part of the pre-construction process.
• Siting GAAMP verification ensures that the farm considers the social and community impacts of the facility prior to construction. Property line setbacks and odor management plans are both intended to help livestock farms minimize their impact on neighbors and the rural community.
• Verification also ensures the farm plans for an adequate land base and the appropriate use of accumulated manure nutrients after the new or expanded facilities are placed in production.
• Meeting Siting GAAMP ensures that the manure storage facilities meet current environmental standards. The Siting GAAMP verification process requires a professional engineer (PE)-stamped design verifying the storage will meet NRCS 313 or Midwest Plan Service standards. The PE must also monitor the construction process and provide “as built” documentation verifying the manure storage structure meets design specifications. This documentation also allows for a smoother transition to becoming a M-DEQ permitted farm should the livestock facility continue to grow and exceed the Large CAFO threshold.
• Siting GAAMPs also consider the facility’s impact on groundwater and any nearby residential water wells.

How Long Will the Process Take?
The time consuming portion of the process includes gathering all the information required within the site verification checklist and completing the manure systems management plan, and other complementary documentation. Weather conditions, including frozen ground or extremely wet soils, may delay the subsurface soils evaluation. In these instances the verification request may be submitted to MDARD for review pending the results of the evaluation. All fields included in the Manure Management System Plan (MMSP) must have soil test results that are less than three years old and were collected on increments of 20 acres or less. Having acceptable soil test results are key to timely completion of the verification request.

The Verification Request
The approval or verification process begins with a livestock producer submitting a Site Verification request to MDARD. If the farm owner requests MDARD assistance, then MDARD staff will visit the site to conduct a preliminary evaluation. Extension Educators from MSU may also be invited to the early site visit. Often times these early visits will determine if
Manure Setbacks, How Far is Far Enough?

Natalie Rector
Extension Nutrient Management Educator

Remember the golden rule about spreading manure: do not let it reach surface waters. This can be achieved by the best decisions you make based on weather, rates, application methods, and field conditions.

Some Basic Considerations
The basics for surface applied unincorporated manure include that a) the applicator should observe a minimum of 150 ft setback from surface waters, including ditches and areas subject to flooding; and b) if conservation measures, such as, vegetative buffers are in place they may be sufficient to protect surface waters from runoff. Following these recommendations will help achieve conformance with Right-to-Farm guidelines and provide nuisance protection. But they do not over ride common sense. The goal is to prevent manure from reaching surface water. If you are on a slope, using high rate of manure application, or on a field where conditions still allow manure runoff to reach surface waters, then the 150 ft setback and/or vegetative buffer strip may still not be enough. In this scenario, selecting a different manure application rate, utilizing a less risky field or waiting for an opportunity when manure can be incorporated may be a better decision.

For Right-to-Farm guidelines, if manure is incorporated within 48 hr the setbacks are not necessary. Quicker incorporation is always recommended to both preserve the nitrogen in the manure and ensure against a sudden rain event. Right-to-Farm allows surface applied manure when no-till or hay field conditions make incorporation unfeasible.

Keeping records of manure applications, including field and weather conditions, will be the way to validate your actions. These are guidelines for Right-to-Farm protection. If your farm is under an National Pollutant Discharge Elimination System (NPDES) permit then be sure to follow those requirements which are mandatory for compliance. Setbacks also may apply for injected manure.


Continued from Page 4.

Right-to-Farm...
the site has potential and if there are any extenuating circumstances the owner will need to consider during the application process. The site verification request requires the farm to provide the following to MDARD:
- the completed MDARD site verification checklist containing all the required information;
- a site plan including the location of all utilities such as fuel storage, water wells and driveways;
- a complete manure management systems plan (MMSP);
- an odor management plan when needed;
- if in-ground manure storage (earthen or concrete) is included in the project, a subsurface soils evaluation indicating the seasonal high water table must be included in the verification request
- a PE-stamped design certifying the manure storage structure meets NRCS 313 or Midwest Plan Service standards;
- results of the well isolation distance worksheet or a letter from the local health department verifying the well location. The well isolation distance worksheet is available at local NRCS offices;
- aerial photos highlighting adjacent property owners and non-farm residents within ½ mile; and,
- a topographical map and soils map of the site.

Who Is Available to Help?
The MDARD staff and MSU Extension Educators are available to answer questions, make preliminary site visits and help with the overall process. Many of Michigan's Certified comprehensive nutrient management plan (CNMP) providers also assist with completing the site verification process.

Siting GAAMPs provide a planning process that can be used to properly plan new and expanding facilities, increase the suitability of a particular site and enhance neighbor relations. The siting GAAMP process helps to ensure high environmental and social standards so that the Michigan livestock industry can continue to grow.

To learn more about Site Selection GAAMP and to download an application form, go to the MDARD website: http://www.michigan.gov/mdard/0,4610,7-125-1567_1599_1605---,00.html.

* Part 1 of this article (in the MDR January 2012 issue) focused on the RTF law changes.
Weather Provides Opportunity to Clean Outdoor Lots

Natalie Rector*
Extension Nutrient Management Educator

The break in the weather may provide an opportunity to scrape and clean manure from outside lots. If it is not dry enough to haul to the fields, cleaning the area and stacking in the lot may provide a cleaner area for the livestock and will hold nutrients until spring.

Outside lots collect a lot of manure in a small area over the winter. Spilled feed also adds nutrients, and bedding may hold those nutrients. Regardless of the situation, it is better to hold and recycle those nutrients to crop fields than risk them being washed off site.

Any time a lot is within proximity of surface waters, it is important to keep the lot scraped and cleaned as frequently as possible. Also, creating any berms, vegetation or other barriers to filter or divert runoff is important to protecting surface waters. Nutrients from manure can become soluble and travel with surface water even when you do not see the manure moving. Strong rains and rapid snow melt may carry the manure as well.

The break in the weather may provide opportunities to scrape and haul these nutrients to fields, distributing the manure nutrients where they can contribute to the 2012 crop season. Select fields that have little or no risk of runoff to surface waters; apply at agronomic rates; and, incorporate the nutrients if conditions allow.

Cleaning Overwinter Sites in Dairy Farms

Natalie Rector*
Extension Nutrient Management Educator

Some dairy cattle are overwintered outside. After several months of congregating around bale and supplement feeders, both manure and wasted feed accumulate. Both have nutrients that are better utilized for crop production than leaving them vulnerable to spring runoff.

Despite the unusually mild winter it is pretty certain that there will be spring rainfalls. Taking time to gather and haul wasted feed and manure from outside wintering lots will reduce the risks of spring weather washing these nutrients to any nearby surface waters.

Other options include moving feeders on a frequent basis thereby letting the cattle move the manure around the field for you. Reseeding these areas this spring will maintain vegetation for livestock, take up left-over nutrients, outcompete weeds, and reduce soil erosion.

Location of overwintering areas is the first guard against surface protection.

No one wants wintering lots in a low area, but when selecting a small grade to put them on be sure that there is either a good distance of vegetation prior to reaching any surface water, berms that divert runoff from the waters or better yet, there is no surface water down grade of the lot areas.

* Articles by Natalie Rector were published in MSU Extension News on Feb. 7, 2012. The MSU Extension News Website (http://news.msue.msu.edu) is updated daily to provide relevant information available from MSU Extension educators throughout the state and at MSU. Email notification of recent articles published in MSU Extension News can be requested. Digests are available for 17 ag-related topics, including Dairy Production, Field Crops Production, and Business.
MSU Extension Upcoming Educational Sessions of Benefit to Dairy Producers

April 2012

9 - Webinar - Economics of Heat Stress: Implications for Management (www.extension.org/dairy+cattle)

10 - Ag Market Update, Grand Rapids.
Contact: Kathy Lee or Craig Thomas

10 - Calf Care School, Shephard, MI.
Contact: Phil Durst or Stan Moore

12 - Ag Market Update, Hillsdale.
Contact: Roberta Osborne or Craig Thomas

12 - Calf Care School, Dorr.
Contact: Faith Cullens or Stan Moore

23 - Webinar - Cooling Strategies during Heat Stress (www.extension.org/dairy+cattle)


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Current dairy policies include federal milk marketing orders, a price support program, the Milk Income Loss Contract program (MILC), as well as trade instruments including export incentives and import tariffs. Milk marketing orders define minimum farm prices for Grade A milk based on end use. The relative use of milk by class in the federal orders is used to weight a minimum blend price that all farmers must be paid. The use of wholesale product prices has been controversial in recent years with concerns that the wholesale prices can be manipulated.

The Price Support Program, formally named the Dairy Product Price Support Program in 2008 Farm Bill and formerly the Milk Price Support Program from 1949-2007, is an open offer to purchase butter, cheese, and nonfat dry milk at set product prices. The Price Support Program has been criticized in recent years for curbing product innovation, supporting world dairy product prices, and being generally insufficient for U.S. farm prices at current feed costs. Trade policies include the Dairy Export Incentive Program (DEIP) which subsidizes exports of dairy products. These export subsidies were crucial to moving excess dairy products in past decades but U.S. product prices have been very competitive in recent years. Dairy programs also include the promotion programs where dairy producers pay 15 cents for each hundred-weight of milk produced which is used for promotional activities.

Factors Affecting Dairy Debate
Several factors relate to the current dairy policy debate including farm size and regional conditions. Some policies, such as the MILC program, have an explicit size bias. Others are perceived to be biased to large herds.

To examine Michigan dairy producers’ opinions of the current dairy policies, a list of operations with a license to ship Grade A milk was obtained from the Michigan Department of Agriculture in April 2011. The list contained the names and addresses of 2,156 operations from which 1,102 were randomly selected resulting in 226 useable surveys returned for a 20.5 percent response rate.

The survey collected information about the operator and operation. Respondent herd size varied from 8 to 5,400 milk cows. Average respondent herd size was approximately 300 milk cows which was larger than the average operation with milk cows. The survey also collected information about the dairy farmer respondent views on current dairy policy programs.
Figure 1 displays the average score (where 5 = very important to 1 = not important). Across all farms, the programs thought to be most important were the Dairy Export Incentive Program (DEIP), promotion and marketing orders. The least important programs were the price support and MILC programs which are the programs that were designed to directly support dairy farm income. The MILC program is divisive across herd size as it is relatively more supportive of small herds because the payments are capped based on milk produced. Accordingly, the MILC program has been unpopular with the large dairy herd owners.

The price support program is currently considered irrelevant and antiquated because the product price translate to farm milk prices are below the current cost of production. Many producers view it as supporting world dairy prices, squelching the incentive to innovate, and generally making U.S. dairy products less competitive in the global market. The price support program also was unpopular with large herd owners. Farms of all herd sizes had favorable views of the DEIP and the promotion programs.
When is a Milk Price a “Good” Milk Price?

Craig Thomas
Extension Dairy Educator

One of the most difficult decisions dairy producers face is whether or not current milk futures prices are “good” prices. The first problem is: What is a definition of “good.” Frankly, producers look at a “good” price as one that is “high.” So that naturally brings on another question: What is a “high” milk price? That leads to another question: Is the price “high” enough to be profitable? This is starting to get us closer to the essence of the question, but determining a price at which to forward price milk is obviously a dizzying process. However, by following a few simple principles it is not extremely difficult to determine if a future milk price is a “good” milk price. The dairy producer should take six items into consideration.

1 What is my cost of production? A dairy producer trying to price milk without knowing his/her cost of production is like a cross-country traveler attempting their long trip blindfolded and without a map. Such a traveler would only successfully reach his destination by blind luck. The same is true for the dairy producer who does not know their cost of production. Every dairy producer should calculate their cost of producing milk at least quarterly. You cannot properly judge a future milk price until you know whether or not it is profitable. Many good tools are available for this purpose. I have a simple Microsoft Excel® cost of production spreadsheet that uses income tax Schedule F information. To obtain a copy, just contact me (thomasc@anr.msu.edu). By calculating your cost of production you will know your breakeven milk price which is always the starting point when making milk marketing decisions.

2 What are my marketing goals? Many dairy producers expect to hit a home run every time they forward price milk. That is not the goal of marketing. Is it possible to hit a home run once in a while? Yes. But, unfortunately, most home run hitters also strike out a lot. Remember, the goal of milk marketing is to control milk price risk. A good marketer may end up with the same average milk price as the producer who does not forward price milk. But, the good marketer will take some variation out of milk prices. For example, let’s say the average mailbox price for the year was $18/cwt. How would you prefer to receive that price? Look at the Table 1 above. Which would you rather receive: Scenario A or Scenario B? Both give you an average annual milk price of $18/cwt, but scenario B will result in some very tight cash flows in at least 3 months. Never forget that milk marketing’s primary goal is to reduce milk price risk and “smooth out” the milk price. Profit enhancement is, at best, a secondary goal. Practice moderation in your milk marketing by not trying to hit a home run each time you forward price milk. There are a few times when the market will offer an opportunity to hit a home run, but those times are the exception rather than the rule.

3 Be aware of price “anchoring.” Price “anchoring” is quite common among people who follow any market. Whether prices are low, high, or somewhere in the middle, people usually become psychologically anchored to the level of current prices. If prices are high, producers often wait to forward price milk and then when prices begin to drop they are still psychologically anchored to the higher prices and wait too long to forward price their milk. The same is true on the other end of the spectrum. When prices are low and begin rising, producers are psychologically anchored to the lower prices and wait too long before forward pricing milk and miss out on the higher prices. The result is that many producers become so wary they can never make a pricing decision. Make your first criteria be the relationship between what the current futures market is offering in comparison with your cost of production. Don’t be afraid to forward price a portion of your milk if it is profitable even

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if you believe the market is going higher. Trying to guess when the market will put in a high is impossible, so selling into a rising market is almost always a good strategy. Remember, the goal is to control risk, remain profitable, and keep your business operating.

Know your historical milk prices. Current futures prices need to be put in the context of historical prices. The best way to accomplish this is by using a cumulative probability chart of historical Class III prices since most milk pricing tools (futures, options, forward contracts) are based on Class III prices. Figure 1 shows a cumulative probability chart for historical Class III prices. The horizontal axis is the price per hundredweight and the vertical axis is cumulative probability. The chart is easy to read. At any point along the gray line draw a straight line down to the horizontal axis to determine the milk price and another straight line over to the vertical axis to determine the cumulative probability.

The 2012 Chicago Mercantile Exchange Class III futures price as of Jan. 10, 2012 averaged $17.37 cwt which is at the 88th percentile. This means that from 1995-present only 12% of the monthly settled Class III prices were above $17.37/cwt. Thus, from a historical perspective $17.37/cwt is an excellent price. Some have questioned including prices going all the way back to 1995. However, of the 17 annual average Class III prices from 1995-2011, of the ten lowest annual averages, six of those have occurred since 2000, and the second lowest was as recent as 2009.

Know the dairy market fundamentals. Dairy market fundamentals refer to what is currently happening in the dairy industry as it concerns national milk production, cow numbers, cull rate, dairy product consumption and inventories, dairy product export and import markets, consumer confidence, feed costs, overall economic environment, etc. Every month I compile a Dairy Market Update that discusses these factors and ties them together to give a coherent outlook of the current market. Basically you are trying to make two simple assessments: 1) Do the current market fundamentals support stronger, weaker, or the same milk prices in the future? And, 2) How strong is this support? It is an imperfect science since it is impossible to predict the future. But it remains an important tool to give producers some level of confidence in making futures pricing decisions.
2012 Employment Taxes Extended

Curtis Talley, Jr.
Extension Business Management Educator

The U.S. Congress has extended the reduced social security tax rate for the rest of 2012. This will affect both the employee and employer.

Similar to 2011, the reduced withholding rate for employees is 4.2% (instead of 6.2% prior to 2011) for social security and 1.45% for Medicare. This does not change the cost to the employer as the extra 2% (6.2 - 4.2) goes to the employee’s paycheck rather than the federal government. The amount the employer contributes on behalf of the employee has remained at 7.65% (6.2% for Social Security and 1.45% for Medicare). As employers learned last year, deposits must be made by electronic funds transfer. For 2012, the maximum earnings subject to Social Security is $110,100, while there is no upper limit for Medicare taxes. Employers must also withhold federal and state income taxes and a few situations might require farmers to withhold for city (local) income taxes.

Taxable Cash and Non-cash Incomes

All cash wages become subject to social security and Medicare (SSM) taxes when the farm employee is annually paid $150 or more in cash wages or when the combination of cash and non-cash wages to all employees of a farm exceeds $2,500. However, some exceptions exist for family employees. A child under 18 working only for parents is probably exempt. Other family situations do not have exceptions. A child working for a corporation or a partnership with a partner who is not a parent is subject to SSM. A spouse who is an employee is also subject to SSM.

Non-cash wages for farm workers including food, lodging, clothing, and other goods and services are normally not subject to SSM as long as the substance of the transaction is not a cash payment. For example, if an employer owes an employee $600 and corn is $6 per bushel, paying them 100 bushels of corn is substantially a cash transaction. To give an employee 5 bushels of corn each week to take home should be taken as non-cash wage which is not subject to SSM taxes. However, non-cash wages are still subject to income tax. The value of these non-cash wages is reported on the W-2 as part of wages (box 1) but not as social security wages (box 3) or Medicare wages (box 5). If an employer requires an employee to use lodging on the farm (for example, to watch over the herd at night) then this lodging is probably not subject to either income taxes or SSM taxes.

If a farmer is not currently paying federal or Michigan unemployment tax, the $20,000 rule often causes payments to begin. If cash wages paid in any calendar quarter (January to March, April to June, July to September, October to December) exceeds $20,000 for either 2012 or 2011 then unemployment taxes are required to be paid by the employer. If annual cash wages for the farm exceeds $80,000, then at least one quarter is greater than $20,000. The federal (FUTA) rate rose to 1.7% of the first $7,000 of wages for each employee in 2011.

The rate returned to 0.8% for 2012. The Michigan Unemployment Insurance Agency (UIA) rate was increased for employers in 2012 to allow the federal rate to decrease. Employers should have received a notice in February 2012 with the new rate for the first $9,500 paid to each employee. The rate is calculated for each employer based on factors and historical use of unemployment benefits. The $9,500 for 2012 was an increase over the taxable wage base for 2011 of $9,000.
Mycoplasmas are normal inhabitants of the upper respiratory airways, urinary and genital tracts, and the digestive system; however, they can become infectious and cause high impact diseases in dairy herds including mastitis and metritis. In dairy cattle, Mycoplasma bovis is the most commonly isolated mycoplasma species (spp.). This species is very invasive and capable of colonizing different organs including the ear canal, the joints and the udder. Other species such as Mycoplasma californicum and bovigenitalium are also common pathogens in dairy cattle. Mycoplasma spp. cause disease in cattle of all ages; in calves for example, they cause pneumonia, arthritis, and otitis. In dairy heifers and cows, they cause clinical and subclinical mastitis, metritis, and pneumonia.

**Signs of Mycoplasma Mastitis**

Mycoplasmas are considered contagious mastitis pathogens since they are spread from infected to uninfected cows by milkers’ hands and milking machines. Mycoplasma mastitis herd outbreaks usually are characterized by an increase in the number of severe clinical mastitis cases that are unresponsive to treatment. Cows with mycoplasma mastitis usually have more than one quarter infected, reducing considerably their milk production and elevating their somatic cell counts (SCC). Abnormal udder secretions are common and may vary from watery milk with a few clots to a thick colostrum-like material.

Cows chronically-infected with Mycoplasma bovis may show a tannish-colored secretion with sandy or flaky sediments that resembles cooked cereal in a whey-like fluid. Mycoplasma mastitis usually becomes chronic because these bacteria are resistant to the majority of antibiotics currently available in food animals. The reason is that mycoplasmas lack a cell wall and therefore are resistant to antimicrobials that target this structure such as penicillin.

In the case of subclinical mastitis, cases are characterized by progressive hardening and reduction in the size of the affected quarter. In some cases, multiple abscesses within the affected quarter may be found and this characteristic may cause intermittent shedding of mycoplasmas in milk from the affected quarter. In herds with high SCC, mycoplasmas should be considered as one of the possible causes of subclinical mastitis.

**Mycoplasma Mastitis Herd Outbreaks**

During a mycoplasma mastitis outbreak, priority should be given to identifying infected cows for segregation and/or culling as soon as possible. This is because antibiotic treatment does not suffice. Furthermore, mycoplasma is highly contagious and rapid identification will reduce the spread of the infection among the lactating herd. However, mycoplasma identification is difficult because these organisms are sensitive to drying, pH changes, and extended refrigeration or freezing periods. The other problem is that infected cows have intermittent bacterial shedding that further complicates detection. Different procedures can be implemented at the farm and when submitting the milk samples to improve the diagnosis of mycoplasma (Table 1 above).

### Table 1: Several key procedures at the farm, during sample transportation, and at the diagnostic laboratory before agar inoculation will assure the highest achievable sensitivity and specificity of mycoplasma detection techniques.

<table>
<thead>
<tr>
<th>At the farm</th>
<th>Sample Storage and Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train dairy personnel in correct milk sampling procedures</td>
<td>If sample transit time is:</td>
</tr>
<tr>
<td></td>
<td>• Less than 72 hr refrigerate at 36-42 °F</td>
</tr>
<tr>
<td></td>
<td>• More than 72 hr freeze at -68 °F</td>
</tr>
<tr>
<td>Target high shedder groups such as fresh cows and clinical mastitis cases</td>
<td>If samples will be frozen use cryoprotectants</td>
</tr>
<tr>
<td></td>
<td>• dimethyl sulfoxide (DMSO) 10% volume to volume</td>
</tr>
<tr>
<td></td>
<td>• Glycerol 10-30% volume to volume</td>
</tr>
</tbody>
</table>
Sample Collection and Storage

Mycoplasma screening should start with cows presenting clinical mastitis and cows within the first week of lactation. Both groups are more likely to be shedding mycoplasma organisms, as compared with mid- and late-lactation cows.

In the case of an open herd, milk from new animals should always be tested for mycoplasma growth before commingling with the herd. Routine bulk tank milk sampling should usually precede individual sampling. Depending on the size of the lactating herd and Mycoplasma prevalence in the dairy operation, these samples should be repeated at least once a month for small herds, and weekly, for large herds.

Aseptic milk sample collection, usually following udder preparation and sanitizing the teat end with alcohol pads, is important to minimize contamination with bacteria from the environment. Good milk sampling procedures alone will increase mycoplasma recovery; this is because environmental bacteria growth will acidify milk and impair mycoplasma growth.

The amount of time between sample collection and culturing should be kept to a minimum. Since immediate culturing is far from practical in commercial herds, it is very likely that samples will require some type of storage. If the time period from sample collection until laboratory processing is less than 72 hr, milk samples should be refrigerated at 36-41 °F.

On the other hand, if the storage time is longer than 72 hr, samples should be frozen at -68 °F. In this case, addition of a cryoprotectant, either glycerol 10 to 30% volume to volume, or dimethyl sulfoxide (DMSO) 10% volume will improve mycoplasma recovery.

Use of the Non-culture Based Mycoplasma Tests

Different PCR mycoplasma detection tests are available to producers through DHI and animal health diagnostic laboratories. Currently, the use of these tests may be limited because they are targeted to identify Mycoplasma bovis only. Because of their sensitivity, cost, and speed of results, PCR testing is an attractive method for detection of this Mycoplasma spp. in milk samples from bulk tanks.

In the case of mycoplasma mastitis outbreaks, PCR testing could be used for screening milk samples from cow groups, thus reducing processing time. Positive PCR results should be interpreted carefully, and ideally confirmed by culture, because of the possibility of false positives.

During a mycoplasma mastitis outbreak, identification of mycoplasma positive cows should be accompanied by a complete critical analysis of milking routines, lactating herd teat condition, milking equipment performance, maternity pen management, protocols for new cow and heifer management, etc. Mycoplasma is prevalent in many Michigan dairy herds, therefore good preventive procedures are essential to minimize the risk of mycoplasma mastitis outbreaks.

“Mycoplasma mastitis herd outbreaks are usually characterized by an increase in the number of severe clinical mastitis cases that are unresponsive to treatment. Cows with mycoplasma mastitis usually have more than one quarter infected, reducing considerably their milk production and elevating their somatic cell counts.”
Communication with Consumers: A Major Focus of Animal Agriculture

Ted Ferris
Dept. of Animal Science

Introduction

In the past two decades consumer advocates and special interest groups have raised concerns about food production technologies, environmental impacts of animal systems, and more recently animal welfare. Consumers receive messages about nutrient value, food safety and how products are produced with regard to the environment and animal management (social conscience). Marketing strategies used to differentiate food products have resulted in food labeling that can be misleading as many consumers may not understand or be presented with all the facts. These circumstances are impacting the image of agriculture and are exacerbated by today’s consumer being far removed from food production. In response, a number of organizations in the agriculture sector have been increasing their efforts to educate and attempt to reconnect the public with the food system using a variety of methods ranging from farm visits to social media.

Table 1: Eleven survey items categorized under the public and consumer theme.

<table>
<thead>
<tr>
<th>Items</th>
<th>Average</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase legislators knowledge of agriculture</td>
<td>4.52</td>
<td>2</td>
</tr>
<tr>
<td>Communicate to consumers- safety of milk products/technologies used</td>
<td>4.42</td>
<td>4</td>
</tr>
<tr>
<td>Promote the value of the dairy industry in Michigan’s economy</td>
<td>4.36</td>
<td>5</td>
</tr>
<tr>
<td>Public image of agriculture</td>
<td>4.17</td>
<td>12</td>
</tr>
<tr>
<td>Improving public understanding of animal welfare</td>
<td>4.17</td>
<td>13</td>
</tr>
<tr>
<td>Consumer interpretation of dairy product labels- hormone-free, antibiotic-free, rbST-free</td>
<td>3.95</td>
<td>16</td>
</tr>
<tr>
<td>Inform the public about current farming practices</td>
<td>3.93</td>
<td>18</td>
</tr>
<tr>
<td>Availability and market/consumers acceptance of production technologies, e.g., rbST, antibiotics</td>
<td>3.75</td>
<td>28</td>
</tr>
<tr>
<td>Consumer/public acceptance of scientific information</td>
<td>3.72</td>
<td>30</td>
</tr>
<tr>
<td>Survey what consumers think about food products and the way they are produced</td>
<td>3.34</td>
<td>43</td>
</tr>
<tr>
<td>Implementing animal welfare assessments on farms</td>
<td>3.01</td>
<td>46</td>
</tr>
</tbody>
</table>

Two animal welfare topics in Table 1 would likely rate higher today following California’s Proposition 2 and changes to the Michigan Animal Industry Act affecting housing for poultry, gestating swine and veal calves in Michigan. The Center for Food Integrity reported on public survey results comparing top U.S. issues with topics related to animal welfare and the food system. On a 10-point scale where 10 was “Very concerned”, average responses for the U.S. Economy was 8.07, for Having Enough Food to Feed People in U.S. was 6.92; Humane Treatment of Farm Animals was 6.52; and Access to Accurate Information to Make Healthy Food Choices was 6.39.

Seek First to Understand

Averages of responses for items in Table 1 suggest that Owner/
operators feel it is more important to communicate with the public and consumers about safety of milk products and technology (4.42), inform the public about farming practices (3.93), and improve public understanding of animal welfare (4.17) than to better understand what the consumer thinks about food products and how food is produced (3.34). One can argue that to effectively communicate, we need to better understand how the public and consumers view various issues and why. Work by Keith Yazmir suggests the need to understand what the public is thinking in order to address their questions and concerns more directly. Yazmir indicated that the questions consumers are asking are not the same ones agriculture is answering and that what they hear from us translates differently for them.

Building Trust
“Public image of agriculture” ranked 12th with an average response of 4.17 (Table 1 on page 15) suggesting Owner/operators believe we need to address our image. In the book, *The Speed of Trust*, Covey talks about five levels of trust including market or brand trust and societal trust. He refers to the “Speed of Trust” as a cost of doing business. He points out that as trust goes down, speed goes down and costs go up. He uses the example following 9/11, where today we spend more time going through airport security and pay more for airfares to cover that cost. Lack of societal trust in our industry can affect regulations and therefore, speed and cost of doing business. So building trust is important; however, it is difficult with a public so removed from modern farming.

Research by Sapp and others suggests that industry and corporate leaders are unlikely to gain trust simply by telling the public “we know what we are doing and we are good people.” These researchers suspect that actions are needed to promote public confidence in our ability to manage and protect livestock. They suggest consumers don’t necessarily want the facts about animal management practices, but want to trust that farmers will do the right things regarding food safety, animal welfare and the environment. Their finding suggests a need to convey a sense of responsibility to the public in addition to educating them about producer skills and expertise. We can lose trust because of bad players. So it should become a priority to instill best practices on farms and to deal with individuals who do not demonstrate appropriate behavior.

What Are We Doing to Communicate?
There are numerous efforts to communicate to the public. Agricultural organizations have posted Websites with information about farming and stories by producers. Farmers and agribusiness professionals also are talking with local community organizations such as Kiwanis and Rotary. Farm tours have increased in popularity while a number of organizations are training producers about how to tell their story and work with the media to better express themselves and communicate important messages. In addition, actions speak. Animal care assessment programs such as National Dairy FARM which has 50% producer participation provide a mechanism for producers to demonstrate oversight.

Dialogues likely work better than one-way communication approaches but do not reach as broad an audience as mass media. Farm tours provide first-hand observation and create transparency, which should increase trust. After all, producers are letting the public visit their business, ask questions and take pictures. Weary and others used an on-line session to engage individuals in discussions on tail docking, which created a virtual town hall meeting that allowed participants to see reasons put forward by other participants. They stated this approach provides for un-coerced, broadly inclusive, and reason-based public participation.

We also must consider who our audience should be. Communicating with those who are making decisions on what to buy and what regulations are appropriate will be more effective than communicating with special interest groups. And the former are more likely to provide honest feedback about their preferences and concerns. We should communicate to our friends and relatives who already have trust in what we do but don’t fully understand how we produce food today. Exit surveys from 2010 Breakfast on the Farm events indicate that 39% of the respondents had friends who own/had owned a farm, while only 20% said they did not have a relative who owns/had owned a farm.

Are Communication Efforts Working?
We need to determine if our efforts are working. Are we reach-
New Scholarships for Dairy Students

Miriam Weber Nielsen and Elizabeth Karcher
Dept. of Animal Science

For 54 years, the Michigan Dairy Memorial and Scholarship Foundation (MDMSF) has been helping Michigan State University students fund their education. The MDMSF awards nearly $100,000 annually to students. It is the largest scholarship fund in the College of Agriculture and Natural Resources and is funded primarily through gifts from individuals and organizations representing the Michigan dairy industry. This year, the Foundation added four new endowed scholarships for students pursuing a career in the dairy industry. The scholarships are named for Nick Bellows, Red and Edna Cotter, Archie Studer, and Velmar Green.

The Nick Bellows United Dairy Industry of Michigan Scholarship in Dairy Promotion will benefit undergraduates in the College of Agriculture and Natural Resources at MSU with an interest in dairy promotion. The United Dairy Industry of Michigan (UDIM) established the $3,500 scholarship in Nick’s name upon his retirement after serving as CEO for two and a half decades.

Nick Bellows was born and raised on a 320-acre Centennial dairy farm in Eaton Rapids, Michigan where his family milked 40 Holsteins. After serving as an Army Paratrooper in the 101st Airborne Division, Nick earned a bachelor’s degree in Telecommunications from Michigan State University, and a law degree from Thomas M. Cooley Law School.

For two and a half decades, United Dairy Industry of Michigan benefited from the dedicated and supportive leadership of Nick Bellows. As the CEO of United Dairy Industry of Michigan, Nick’s record of service included many programs widely recognized as being among the nation’s most effective in terms of increasing dairy consumption. This was accomplished by building a solid network of partners in the Michigan business and scientific community who invested their credibility and financial resources in local dairy promotion programs. Additionally, in order to advance programming at the national level, Nick shared his time and expertise by serving as chair and committee member of several Dairy Management, Inc. program planning committees.

The Archie Studer Michigan Dairy Memorial Scholarship will benefit undergraduates in the College of Agriculture and Natural Resources at MSU with an interest in dairy production or breeding. The family of Archie Studer established the $3,500 scholarship in Archie’s name in recognition of a lifetime of involvement in the Michigan dairy industry.
Archie Studer was born on January 13, 1918, the seventh of eleven children growing up on their farm east of Shelby, Michigan. After graduating from Shelby High School in 1937, he managed the family farm. He fought in World War II in the Pacific Theater as a member of the U.S. Army. He was honorably discharged with the rank of Staff Sergeant in January 1946.

After the war, he and his wife Elizabeth moved to Casnovia, Michigan where they established the Kenowa-Acres Dairy Farm. Over the next 37 years, he bred and raised an outstanding herd of registered Holstein dairy cattle. Utilizing the Artificial Insemination certification he received in the early 1970s, he converted an unknown name to a frequently cited herd prefix for quality animals. Holstein Association USA records show 318 Kenowa-Acres female animals, including four Gold Medal Dams and five Dams of Merit, with 73 of them rated as “Very Good” and two as “Excellent”. At least three Kenowa-Acres bulls were selected for use in the AI program. He also won many DHI awards for his cattle herd.

In the 1960s and 1970s he was active in the Muskegon Co. 4-H, serving as a veterinary medicine leader and assisting as his three children (each later graduated from Michigan State University) participated. He was an MMPA member and participated in the Muskegon County DHIA from about 1953 until 1988, serving as president for two years. After his herd was dispersed in 1988, Archie continued crop farming for ten years before retirement.

The $4,000 Red and Edna Cotter Purina Michigan Dairy Memorial Scholarship will benefit veterinary students who completed the Production Animal Scholars Program in the Department of Animal Science and are currently enrolled in the College of Veterinary Medicine at MSU. Redmond (“Red”) and Edna provided the endowment to the MDMSF after Red’s retirement from Ralston-Purina.

Both former students at MSU, the Cotters were generous supporters of multiple programs at MSU. Edna was born on a farm on which is now located MSU’s Turfgrass Research (the square bordered by Mt. Hope, Beaumont, Farm Lane and Forest Roads). Red was a 1937 graduate of MSU and after served as a guest lecturer in the College of Agriculture and Natural Resources. He was employed for 43 years with Ralston-Purina, serving as the Sales Manager for Michigan, Ohio and Indiana at the time of his retirement. Mr. Cotter was an inspirational leader and a well-respected motivator of sales and marketing executives.
The Michigan Milk Producers Association recently established the Velmar Green Michigan Dairy Memorial Scholarship in the name of Velmar Green in recognition of Velmar’s retirement from the Board of Directors of MMPA after 40 years of service. The $3,500 scholarship is awarded to a student in the second year of the Dairy Management Program in the Institute of Agricultural Technology who plans to work on a dairy farm after graduation.

Velmar Green has been an innovative leader in the dairy industry for over 50 years. After completing his B.S. degree at Michigan State University, he and his brother, Duane, joined their father, Merle, in partnership on the family dairy farm. Since its beginning, Green Meadow Farms has been instrumental in providing leading dairy genetics, practical research application for universities, and leadership in state and national organizations. Green Meadow Farms continues its legacy today as one of the foremost dairy operations in the country.

Green Meadow Farms has been a “large dairy” since 1954 when the family milked 250 registered Holsteins. By 1985 they were milking 1,700 head of cows. In the late 1990s they completed a series of expansions building the herd to 3,200 milking cows with a total herd size of over 9,000.

Velmar has held leadership positions with milk marketers, breed associations, DHIA, cattleman’s association, university advisory groups and agriculture lenders. Most recently, in 2009, Velmar was appointed by the Governor to become a member of the Michigan Commission of Agriculture. At a time when “large dairies” are coming under more and more scrutiny he does not shy away from doing what he can to help researchers and fellow farmers. His farm is a popular location for on-farm research and they have been instrumental in much of the research done on animal nutrition, animal health, breeding and environmental issues. Many of the common management tools used today were once a research trial at Green Meadow Farms. Their unselfish commitment to the research efforts in the dairy industry has been a benefit to all dairy farmers.

Velmar, who has served as chair of the National Milk Producers Federation (NMPF) Animal Health Committee, has been instrumental in many national animal health issues. In Michigan, he has been at the forefront of the TB issue and the implementation of electronic animal identification. He has also worked on several committees at NMPF on animal health issues. Velmar represented the dairy industry on the U.S. Animal ID Working Group Task Force. Velmar’s list of recognitions include Michigan State University Dairy Farmer of the Year and Michigan State University Distinguished Service to Agriculture Award.

For more information on the Michigan Dairy Memorial and Scholarship Foundation, visit http://www.ans.msu.edu/academics/undergrad/dairy_memorial/index.html.

Velmar Green

“The Michigan Dairy Memorial and Scholarship Foundation is the largest scholarship fund in the College of Agriculture and Natural Resources and is funded primarily through gifts from individuals and organizations representing the Michigan dairy industry.”
The Michigan Dairy Memorial and Scholarship Foundation continues to be the largest scholarship program in the College of Agriculture and Natural Resources. In the last decade, the endowment has grown by more than 50% to a principal account of over $900,000 and increased by over 40% to 184 the number of individuals recognized as Honorees of the Foundation. Individuals and organizations in the Michigan dairy industry have been the primary contributors to this growth and the increased amount of scholarship funds available to dairy students.

New Honorees of the Foundation this year, recognized through a minimum $1,000 contribution to the Foundation, include Nick Bellows, Walt Frahm, Bill Robb, and Keith and Maxine Sowerby. The Foundation awarded over $95,000 in scholarships this year. Scholarships are awarded on the basis of academics, extracurricular involvement, and interest in a career in the dairy industry.

Glenn and Anne Lake Scholarship ($7,500)
The Glenn and Anne Lake Scholarship is awarded to Olivia DeVooght. Olivia is the daughter of Bill and Mary DeVooght and grew up on her family’s dairy farm near Marquette. Olivia has a double major in Animal Science and Marketing and is a member of the Honors College. She has been active in the MSU Dairy Club, and completed internships with Pfizer Animal Health and Dean Foods.

Russel Erickson Scholarship ($5,000)
The Russel Erickson Scholarship is awarded to Eric Sneller. Eric is the son of Darwin and Kathy Sneller of Sebewaing, and grew up on his family’s dairy farm. Eric is a senior in Animal Science, and plans to work in the dairy industry following graduation while remaining involved with his family’s farm. Eric has participated in Dairy Cattle Judging; the MSU and Midwest Regional Dairy Challenge contests; the MSU Dairy Club; and MSU Block and Bridle Club.

Donald and Valera Murray Scholarship ($4,000)
The Donald and Valera Murray Scholarship is awarded to Kevin Messing, a senior in Biosystems Engineering. Kevin is the son of Greg and Shelly Messing, and remains involved on his family’s dairy farm near Bad Axe. Kevin is concentrating his studies on Food Engineering and plans to work in dairy foods manufacturing after graduation. Kevin served as President of the MSU Dairy Club and participates in MSU Block and Bridle.

John and Barbara Dilland Scholarship ($3,500)
Tera Koebel, a senior in Agribusiness Management from Three Oaks, is the recipient of the John and Barbara Dilland Scholarship. Tera is the daughter of Terry and Jennie Koebel, and is actively involved in her family’s dairy farm. Tera participates in Michigan Junior Holstein Association, Michigan Jersey Cattle Club, MSU Dairy Club, Collegiate FFA, Collegiate Farm Bureau, and Sigma Alpha Sorority. She completed an internship with Elanco Animal Health this past summer.

Harold and Lillian Gremel Scholarship ($3,500)
Allan Mergener, a first-year student in MSU’s College of Veterinary Medicine, received the Harold and Lillian Gremel Scholarship for Production Animal Scholars in veterinary school. Allan is the son of Richard and Tammy Mergener from McMillan. Allan completed his Animal Science degree at MSU and is working on a Master’s degree in Food Safety while in veterinary school. Allan participated in the National Dairy Challenge, MSU Dairy Club and MSU Block and Bridle. He completed internships at the Kellogg Biological Station Dairy Farm and at CRI Genex. Allan plans to work in the dairy industry in food animal medicine and food safety.

Redmond (“Red”) and Edna Cotter Purina Dairy Memorial Scholarship ($4,000)
Henry Reinart, son of Christopher Reinart in Hopkins, MI, is the recipient of the first-ever Red and Edna Cotter Purina Dairy Memorial Scholarship. He is a second year student in the MSU College of Veterinary Medicine (CVM). Henry completed a food systems fellowship with Merck Animal Health last summer, and is completing a Master’s degree in Food Safety while in veterinary school. Henry was a participant on MSU’s national champion quiz bowl team at the American Association of Bovine Practitioners meeting. He participates on the Animal Welfare Judging Team, the Food Animal Club, the Theriogenology Club, and the CVM Curriculum Committee. Following graduation, he plans to practice production medicine in his home town.

Velmar Green Scholarship ($3,500)
Bryan Mahoney, a sophomore in the Ag Tech Dairy Management Program, is the recipient of the first-ever Velmar Green Scholarship. Bryan is the son of John and Doris Mahoney, and grew up on a dairy farm near Chesaning. Bryan participates in the MSU Dairy Club, the MSU Dairy Challenge, and Collegiate FFA while remaining active on his family’s farm. He completed placement training on a large dairy farm in Nebraska this past summer. He plans to return to his family’s farm after graduation.

Archie Studer Scholarship ($3,500)
Garrett Slavik is the first-ever recipient of the Archie Studer Scholarship. A freshman in Animal Science, Garrett grew up on a dairy farm near Ashley. He is the son of Jim and Doreen Slavik, and plans to pursue a degree in veterinary medicine after completing his bachelor’s degree in Animal Science Production Animal Scholars. Garrett is actively involved in his family’s dairy farm, and participates in the MSU Dairy Club and also on the 4-H Dairy Cattle Judging Team.

Jack & Betty Barnes International Michigan Dairy Memorial Endowed Scholarship ($1,000)
The Barnes Scholarship is provided through an endowment from Jack and Betty Barnes and is given annually to a student interested in a dairy industry career who is participating in an international experience to enhance his or her education. This year’s recipient was Lauren Bush, a junior in Animal Science from Swartz Creek who traveled to Europe with the MSU 4-H Dairy Cattle Judging Team.

Michigan Dairy Memorial Scholarships
The following students received Michigan Dairy Memorial Scholarships ($3,500): Jordan Austin, a senior in Animal Science from Saranac; Lauren Bush, a junior in Animal Science from Swartz Creek; Kelsey Byars, a junior in Animal Science from Webberville; Leah Cardona, a sophomore in Animal Science from Chicago; Stacey Choate, a senior in Animal Science from Cement City; Brandon Gingrich, a senior in Animal Science from LeRoy; Katelyn Horning, a sophomore in Animal Science from Manchester; Kelly Jaynes, a senior in Animal Science from Bartlett, Illinois; Kristi Kocsis, a senior in Animal Science from Lansing; Sarah Michalek, a sophomore in Agriscience Education from Deckerville; Jason Smith, a sophomore in Crop and Soil Sciences from Fremont; and Carrie Szybisty, a senior in Animal Science from Redford.

Michigan Dairy Memorial Freshman Scholarships ($1,500)
Five Freshman Scholarships were awarded to Shelbie Britton, a freshman in Dairy Management from Limestone; Ron Groen, a freshman in Dairy Management from Teeswater, Ontario; Adam Guernsey, a freshman in Dairy Management from Ionia; Sarah Ring, a freshman in Animal Science from Belding; and Laura Small, a freshman in Animal Science from Kimball.

Michigan Dairy Memorial Ag Tech Scholarships ($2,000)
The following students, all in the Ag Tech Dairy Management Program, received Michigan Dairy Memorial Ag Tech Scholarships ($2,000): Jade Cox, sophomore, Coldwater; Cody Koster, sophomore, McBain; Jeff Reid, sophomore, Jeddo; James Stuart, sophomore, Lowell; and Brittany Zondlak, freshman, Byron Center.

Howard Cowles Dairy Scholarships
The Howard Cowles Dairy Scholarships are given annually to students in Animal Science who have attained junior status and demonstrated a strong interest in dairy. Academic achievement and participation in extracurricular dairy activities such as the MSU Dairy Club, Dairy Challenge, Dairy Associates Program or MSU Dairy Judging are given strong consideration. The scholarships are provided by revenue from a gift.

Concluded on Page 23.
Real-world Experience Via Internship

Ike Iyioke  
Dept. of Animal Science

Jillian Holdwick, class of 2011, responds to internship Q & A.

Where did you intern?  
I interned with Land O’Lakes Purina Feeds in Lubbock, Texas.

What was your prior experience?  
I had no previous experience with Land O’Lakes, all of my experience in the dairy industry came from feeding calves during grade school, FFA and 4-H. During my time at Michigan State I got involved in the dairy science program by becoming a teaching assistant for Dr. Miriam Weber-Nielson and also participating in the Dairy Challenge Contest. Also, I was on the MSU National Dairy Challenge Team in 2011.

What were your responsibilities as an intern?  
I was responsible for data collection for various calf and heifer trials that were being conducted on prospect farms. We were comparing different calf starter programs, accelerated milk programs as well as weaning success for both. We quantified the program success by obtaining growth measurements (hip and wither height and girth measurement). I managed three large trials for the farm’s calf and heifer specialist.

In what ways was the farm you interned at similar or different from farms you are accustomed to?  
I interned in Texas, so as you can imagine, dairy farms in that area of the world look much different than the ones I am used to here in Michigan. That being said, the calf operations looks very similar, just on a larger scale. Most of the farms I worked with were larger farms and had hundreds of calves on milk at once.

What did you learn from your internship?  
I went into this internship with limited professional/industry experience. Throughout my internship I learned what a job with a feed company would look like. I also learned what I liked and didn’t like about a job of that nature. My internship was focused on calves and heifers, so I learned a lot about industry benchmarks and expectations of calf programs, which has proven to be very helpful in my current job.

What were your expectations before the internship? How did they differ from your experience there?  
My expectations were pretty low, mostly because I didn’t know what to expect. I was moving across the country, I hadn’t met any of the people I would be working for or living with -- it was a huge leap of faith. I knew I would learn a lot about the Land O’Lakes line of calf products as well as what a successful program looks like. My experience really didn’t differ too much from what I expected, because I didn’t really know what to expect. I really enjoyed spending time with and learning from the calf and heifer specialist from that area. She was and continues to be a wonderful resource for me. She helped me to realize that everything in the real world doesn’t pan out perfectly but she also helped me learn to think critically about what causes blips in a trial.

What general advice would you give to future interns?  
An internship is the single best way to get real-world experience. Many students do not know what they want to do with their lives. What I found with my experience was that an internship can be just as helpful in finding what you don’t want to do as it is in finding what you do like to do.

What specific aspects of the internship would you recommend to would-be interns?  
Find an internship with a company that is progressive in your chosen industry. If you are working with a company that is continually bettering itself and its customer base, you will surely have an experience filled with personal growth. Also, if you have the chance to move away from home for the summer, do it. Moving to Texas was one of the best decisions I’ve made. I have a network that spans far further than it would have if I had limited myself to internships in Michigan alone.

What are you doing now?  
I work for Cargill as a Dairy Focus Consultant.

Jillian Holdwick
Continued from Page 11.

**When is a Milk Price Good...?**

6 Develop a written marketing plan. Most producers have great difficulty in making a forward pricing decision because they don’t develop a written marketing plan. A written marketing plan takes several factors into consideration. First, a producer should know his/her “breakeven milk prices.” There are three important breakeven milk prices: 1) the price needed to cover variable cash costs. 2) the price needed to pay variable cash costs and debt payments, and, 3) the price needed to pay variable cash costs, debt payments, family living expenses and an acceptable profit. The first price will keep you in business in the short term and the second will keep you in business in the long term. The third makes it worthwhile to go to the barn every morning. Second, a written plan should take into account your farm’s degree of financial risk. Generally, the more debt you have the greater your financial risk. As your financial risk increases it should be reflected by a more conservative marketing plan that is willing to forward price increased amounts of milk as long as doing so ensures you meet your debt obligations. Third, a written plan should have various milk price levels at which you have determined you are willing to sell a predetermined amount of milk. By making this roadmap ahead of time you can avoid a lot of the emotional problems associated with actually “pulling the trigger” and making a forward pricing decision. It is recommended that these pricing levels reflect a consensus of all the individuals on your farm that have a major financial stake in the business. Fourth, a written plan should be flexible. Even though you write down your plan, revisit it often and revise it as milk prices and market fundamentals change.

**Conclusion**

Milk marketing using forward pricing tools is not for everyone. To be a successful milk marketer you must make a commitment to follow these six factors. If you are not willing to make such a commitment then you are not likely to be successful. The decision is yours to make and your decision to not market milk using forward pricing tools should not be judged by others. However, if you do make the commitment and follow these six factors it will be worth the effort.

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**Communication...**

ing the correct audiences? Do our messages impact knowledge and misperceptions about modern farming? Is there opportunity to have a dialogue so individuals can ask questions? Are we listening? Are we addressing the right questions and concerns? Public surveys can help determine which approaches and methods are connecting best with the public, if we are addressing the right questions, and if we are building trust and changing where the public goes for information.

**Summary**

Communicating with the public and the consumer about how food is produced on modern farms has become a new focus of animal agriculture. This effort involves demonstrating that our industry and producers are fiduciaries, i.e., caretakers, because the public wants to trust that those producing food will do what is right. Many organizations are working on connecting to the public. However, we need to keep in mind that communication is a two-way process. As agricultural organizations and food producers, we can’t just tell the public or the consumer what we think they need to know. We need two-way communications to better understand what the public and consumer thoughts are and then attempt to address them. In some cases we may need to adjust how we do things to meet their preferences, remembering that they are the customers. But with efforts by farmers and agricultural organizations, they will become educated customers. To be successful we need to continue to become better communicators and identify effective ways to connect with the public. I think we have a good start on this.

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**$95,000 Scholarship Award...**

from the estate of Howard E. Cowles, who was a long-time employee of Sealtest Dairy. This year’s recipients of $850 scholarships were Kelsey Byars and Lauren Bush.

For information on making contributions to honor members of the dairy industry or to support student scholarships, please contact College of Agriculture and Natural Resources External Relations at (517) 355-0284. To learn more about the Michigan Dairy Memorial and Scholarship Foundation, contact Dr. Miriam Weber Nielsen in the Department of Animal Science (517-432-5443; msw@msu.edu).
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