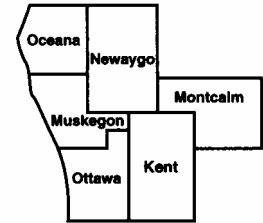


DAIRYLINES

MICHIGAN STATE
UNIVERSITY
EXTENSION

Newsletter for the West Central Michigan Dairy Industry; Kent, Montcalm, Muskegon, Newaygo, Oceana & Ottawa Counties

U.S. Department of Agriculture & Counties Cooperating
Ottawa County MSU Extension Office
333 Clinton St., Grand Haven, MI 49417
616-846-8250 Fax 616-846-0655
Grand Rapids, 662-3100, Holland, 392-3111, Allendale and Coopersville 1-800-764-4111 ext 8250
Web address: www.msue.msu.edu/ottawa



Volume 3, Issue 3 August 2007

Published Periodically

VARIABLE CORN CROP

This year's corn crop is "variable" at best. The crop varies from north to south and east to west and even within the same field. Much of the crop on sandy soils is severely droughted especially in the southwestern part of the state. Some farms have started chopping drought corn to save a few tons of feed per acre. The rest is below average and it will take twice the acreage to gain the corn silage tonnage needed. As of this writing, economic loss is estimated at about \$20 million dollars for just the corn crop in Allegan County.

MSU Extension has posted drought information on the field crops CAT Alert web site at www.ipm.msu.edu/drought2007.htm and the Michigan Dairy Review web site at <http://www.msu.edu/user/mdr/>. These sites contain articles about corn crop development and corn silage harvest of drought crops.

Talk to your neighbors now about salvaging a corn crop for silage rather than trying to harvest grain from a drought field. Drought corn silage usually has about 80-85% of feed value of regular corn silage. The key is to get the moisture correct at the 65% whole plant level. Again the variability within a field makes this a challenge. If dry weather continues, open up some fields and watch this very closely. Drought corn will yield about 1 ton per foot of height minus the tassel per acre. Drought corn silage is estimated to be valued at about \$20-\$21 in the field. Make sure you check your insurance coverage and contact your adjuster before you harvest any fields.

Corn basis at west Michigan elevators has dropped significantly in the past week as a response to the local drought. Watch these markets closely when you need additional corn or other feeds. Hay is expected to be in short supply as well. Consider a 4th or 5th cutting on your fields this fall. The recommendation for fall harvest is to avoid the mid September to mid October time period if possible. This prevents the plant from

regrowing without restoring reserves in the root before winter.

If you have more questions about working with drought crops give me a call at the Ottawa Extension office 616-846-8250 or contact your local Extension office. We have worksheets on pricing corn and copies of the above-mentioned articles.

The drought will impact crop yields and therefore the cost per bushel on your farm. What does it cost you to raise an acre of corn? Check out the corn budgets and Michigan milk cost of production estimates by USDA included in this newsletter and at <http://www.ers.usda.gov/data/>. You will likely receive the biggest milk check of your life. Congratulations! Media attention about high milk prices and \$4 per gallon milk cost to consumers often fails to mention the higher costs to dairy producers. Know your own cost of production and share this information. The latest milk market update is available at the dairy team web page <http://dairyteam.msu.edu/>.

Have a safe harvest season!

G. William Robb
District Dairy Extension Educator



Use the above links for drought corn information.

Table of Contents	Page #
Items from Telfarm	2
Environmental Stewardship-Silage Leachate	2
Research Reports	3
Land Use Resources at MSU	5
Foot and Mouth Disease in UK	5
Dairy Memorial Scholarship	6
New Rule on Social Security "No Match"	6
Cost of Production	7
Dairy Market Update	7

ITEMS FROM TELFARM

Section 179 Direct Expensing Update

Tax laws were changed in May 2007 to allow **\$125,000** of direct expensing (also called section 179) of qualified property purchased in 2007. The amount is *decreased* by each dollar of qualified purchases over **\$500,000**. Last year the numbers were \$108,000 and \$430,000. Eligible qualified property includes machinery, tile, grain bins, fencing, single purpose livestock structures or single purpose greenhouses. This does not include machinery sheds and other general purpose farm buildings. Also, if purchased in 2007, passenger automobiles are limited to a total of **\$3,060** and trucks and vans are limited to **\$3,260** of regular depreciation expensing, so farms normally just use regular depreciation on them. These limits decrease if used less than 100% for business.

If the gross vehicle weight rating is over 6,000 pounds (most 1/2 ton pickups are in this category), then the entire cash boot paid (total cost if there is no trade) is eligible for direct expensing. For 2007, if the vehicle is a large SUV, then the limit is a maximum of \$25,000 direct expensing.

Minimum Wage

Remember the Michigan minimum wage rate is higher than the current federal minimum wage as of July 1, 2007. The \$7.15 hourly rate applies to Michigan farm workers. Farmers paying piece-rates should track hours worked; wages for a workweek should equal at least the minimum wage multiplied by hours worked.

ENVIRONMENTAL STEWARDSHIP: CONTROLLING SILAGE LEACHATE

Dann Bolinger and Natalie Rector

**Extension Dairy, Ag. & Natural Resource Agents
Becky Mitchell**

Former Extension Dairy Agent

Source: July 2003 Michigan Dairy Review 15 Summary

Silage leachate, or seepage from silage piles, bags, bunkers, or silos often occurs on dairy farms. According to Michigan's guidelines for a Comprehensive Nutrient Management Plan (CNMP), silage leachate is identified among manure and milkhouse wastewater on the list of farm outputs requiring proper management.

Why such concern over silage leachate? From an environmental standpoint, leachate presents a problem when it flows into surface waters. Silage leachate has an extremely high biochemical oxygen demand (BOD). This means that leachate has a very high potential for oxygen consumption and when discharged into surface water, can remove so much oxygen that fish and other aquatic creatures die. As little as 1 gallon of silage leachate can lower the oxygen content of 10,000 gallons of river water to a critical level for fish survival.

Nutrients Can Harm Groundwater

Silage leachate also contains nutrients that can harm groundwater; the most critical being nitrate-nitrogen. In addition, the acidic nature of silage leachate can burn or kill vegetation in the area where it drains. Farmers can opt to capture silage leachate by constructing lined ponds or collection basins. Such structures must meet prescribed setbacks from existing wells and surface water and are generally costly to construct. Systems can also be engineered that decrease the volume of material to be handled by collecting only the concentrated wastes while diverting the low concentrated wastes to a designed grass filter area.

Once captured, leachate can be pumped or directed into an existing manure or milk house wastewater storage. However, this may contribute a significant amount of volume to the storage, particularly when rainwater runoff from a bunker silo is collected. Moreover, since leachate may produce dangerous hydrogen sulfide when mixed with liquid manure, it should only be added to well-ventilated, outdoor storages.

Minimize Silage Leachate Production

As an alternative to costly structures to catch silage leachate, farmers can and should make efforts to minimize silage leachate production. Fortunately, many of the recommended practices for harvesting and storing the highest quality silage go hand in hand with minimizing silage leachate.

One of the most critical determinants of silage quality and leachate production is moisture of the forage at the time of harvest. Corn silage for bunker silos should be harvested between 65 percent and 70 percent moisture (30 to 35 percent dry matter). Moisture levels can be even lower for corn silage stored in upright silos or bags, though it should not fall below 60 percent moisture. A range of 60 to 70 percent moisture (30 to 40 percent dry matter) is optimal for alfalfa haylage harvest. Silage harvested at higher than prescribed moisture levels can produce substantially more leachate. Leachate can have negative production-related consequences. It removes nutrients, particularly soluble nitrogen and carbohydrates, from the forage. Leachate can damage the silo structure because of its corrosive characteristics. In addition, silage harvested at higher than prescribed moistures tends to have a higher prevalence of *Clostridia* bacteria. Such bacteria produce nitrogen compounds and butyric acid, which can reduce animal feed intake and silage protein levels.

Covering the silage is another important management practice for minimizing leachate. Not only do covers preserve forage quality by minimizing airflow into the pile, covers also reduce leachate production by preventing rainfall from penetrating the silage and solubilizing nutrients. A plastic covering secured with tires is one common approach to protect forage quality. Research at Kansas State University shows that covering a bunker silo with plastic can return \$8 in reduced forage losses for every \$1 spent. Additionally, from an animal performance standpoint, covering a bunker preserves feed value and improves palatability and feed intake.

Utilize Plastic Covers

Plastic covers should be applied so that rainwater and snowmelt is channeled *off* of the forage pile. The all too common practice of simply diverting water to the walls of the bunker silo should be avoided since water penetrating silage along the walls will still result in a leachate problem.

Maintenance of plastic also needs consideration; any holes in the covering of a silo or bag should be repaired immediately. Though the flow of silage leachate will be greatest during the first month following filling of a storage unit, leachate will occur in smaller amounts through the feed-out period, particularly when rainfall has access to the pile. The loading area should be kept clean of spilled silage. Silage that is not cleaned off of the loading area could wash offsite with rainwater and when wet, will continue to produce silage leachate. Divert rainwater away from silage storage whenever possible. Keeping open bunker silo faces vertical will also minimize contact with rainwater and reduce

spoilage. An emergency backup plan should be developed for those years when high moisture silage is unavoidable. Temporary runoff containment measures could be used, such as using sawdust to absorb and stop silage leachate runoff. The sawdust could then be collected and applied to fields.

Although heightened awareness of silage leachate and runoff is necessary at harvest time, it poses a serious environmental risk year round. As responsible stewards of the environment, all producers need to be aware of the risk of silage leachate and take appropriate steps to reduce and manage it. If you would like further assistance in assessing your particular silage leachate management situation, seek assistance from one or more of the following resource persons: MSU Extension Dairy or Livestock Agents, your county USDA Natural Resource Conservationist, or a qualified engineering consultant.

RESEARCH REPORTS

Effects of Feedborne *Fusarium* Mycotoxins on the Performance, Metabolism, and Immunity of Dairy Cows

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J. Dairy Sci. 2007. 90:3867-3873. doi:10.3168/jds.2007-0162
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Little is known about the effects of feedborne *Fusarium* mycotoxins on the performance, metabolism, and immunity of dairy cattle. A total mixed ration (TMR) containing a blend of feedstuffs naturally contaminated with *Fusarium* mycotoxins was fed for 56 d to 18 midlactation Holstein cows (average milk production, 33 kg/d) in a completely randomized design with repeated measures that included 3 treatments: 1) a control diet, 2) a contaminated diet, and 3) a contaminated diet + 0.2% polymeric glucomannan mycotoxin adsorbent (GMA). Wheat, corn, and hay were the contaminated feedstuffs used in the study. Deoxynivalenol was the major contaminant and was found in the TMR at levels of up to 3.6 µg/g of dry matter. Body weight, body condition score, dry matter intake, net energy balance, milk production, milk composition, somatic cell count, blood serum chemistry, hematology, serum Ig concentrations, and coagulation profile were measured. Dry matter intake and body weight, as well as milk production, milk composition, and SCC, were not affected by diet. Total serum protein and globulin levels increased significantly in cows fed the contaminated TMR compared with cows fed the control diet at 42 d, whereas the albumin:globulin ratio

decreased. Serum urea concentrations were significantly elevated throughout the experiment in cows fed the contaminated diet compared with those fed the control diet. Serum IgA concentrations decreased significantly in cows fed the contaminated TMR at 36 d of feeding. Feeding GMA prevented these effects. Serum sodium concentration and osmolality levels were increased throughout the experiment in all cows fed the contaminated diets. We concluded that feed naturally contaminated with *Fusarium* mycotoxins can affect the metabolic parameters and immunity of dairy cows and that GMA can prevent some of these effects.

Economic and Phosphorus-Related Effects of Precision Feeding and Forage Management at a Farm Scale

L. T. Ghebremichael^{*1}, P. E. Cerosaletti, T. L. Veith, C. A. Rotz, J. M. Hamlett^{*} and W. J. Gburek

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J. Dairy Sci. 2007. 90:3700-3715. doi:10.3168/jds.2006-836

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Structural best management practices were implemented throughout the Cannonsville Reservoir Watershed (CRW) in an effort to reduce P losses to the reservoir. Yet long-term water quality control efforts within CRW are hindered by continuous P build-up in the soils resulting from dairy farm P imports exceeding exports. Addressing the P imbalance problems and maintaining economic viability of the farms requires a system-level redesign of farm management. One possible innovative strategy, precision feed management (PFM), reduces soil-P build-up by limiting feed and fertilizer purchases, and increasing high-quality homegrown forage production. This study applied the integrated farm system model (IFSM) to 2 CRW dairy farms to quantify the benefits of a PFM farm planning strategy in controlling P imbalance problems, and maintaining farm profit-ability and reducing off-farm P losses. The IFSM accurately simulated the 2 farms based on farm data supplied by farm planners; these scenarios were used as the baseline conditions. The IFSM simulations of more accurate feeding of P (based on P required in animal diets) integrated with increased productivity of grass-forage and increased proportion of forage in the diet reduced the P imbalance of 1 farm from 5.3 to 0.5 kg/ha and from 9.6 to 0.0 kg/ha for the second farm. For both farms, soluble P lost to the environment was reduced by 18%. Feed supplement purchases declined by 7.5 kg/cow per year for dietary mineral P, and by 1.04 and 1.29 t/cow per year for protein concentrates through adoption of the PFM system. Moreover, when a land management practice of

converting corn to grass was coupled with the precision feeding of P and improved forage management, IFSM predicted reductions of 5.8 and 9.3 kg/ha of converted land sediment-bound P in erosion loss each year. The model predicted slight purchase increases in corn grain to offset reductions in corn silage production and feeding rates, but no appreciable change in the farm P balance due to land conversion. The model-based studies conducted on a farm-by-farm basis complement farm planning efforts in exploring innovative farming systems. Moreover, the results set a benchmark for potential benefits of PFM strategies, economically and environmentally.

Herd Management Practices and Their Association with Bulk Tank Somatic Cell Count on United States Dairy Operations

J. R. Wenz^{*1}, S. M. Jensen, J. E. Lombard^{*2}, B. A. Wagner and R. P. Dinsmore^{*}

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J. Dairy Sci. 2007. 90:3652-3659. doi:10.3168/jds.2006-592

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The objective of this study was to evaluate associations between bulk tank somatic cell count (BTSCC) and herd management practices using data collected in the National Animal Health Monitoring System Dairy 2002 study. Twenty-six percent and 17.8% of 1,013 operations reported a BTSCC <200,000 cells/mL and >400,000 cells/mL, respectively. Univariate analysis identified associations between management variables and BTSCC. The use of mattresses, sand, and newspaper as bedding were all associated with a lower BTSCC. Primary lactating cow housing facility, outside maternity housing area, flooring type cows walk or stand on, and use of automatic take-offs were also associated with BTSCC. Multivariate associations between management variables and BTSCC were determined by backward elimination ordinal logistic regression. The odds of an operation from the West, Midwest, and Northeast having a high BTSCC were lower than those from the Southeast. The odds of a higher BTSCC were 2 times greater for operations with a rolling herd average milk production <9,090 kg/cow per year compared with those with \geq 9,090 kg/cow per year. Operations using composted manure were 2.9 times more likely to have a higher BTSCC than those not using composted manure. Finally, operations that reported not using a coliform mastitis vaccine were 1.7 times more likely to have a higher BTSCC than those using one. Future studies of the association between management practices and BTSCC should include an evaluation of the quality of management practice

application and herd prevalence of contagious mastitis pathogens. Significant variables identified in this study dealt with housing, use of composted manure for bedding, and coliform mastitis vaccine use, suggesting the effect of environmental mastitis pathogens may be more influential on BTSCC than previously thought.

LAND USE RESOURCES AT MSU

Land use and farmland preservation is identified as a major issue for the WC dairy industry. Michigan State University recently assigned two new staff to work in this area of education. Kurt Schindler from the Cadillac area has a lifetime of experience in governmental and Extension experiences. He shares much of this experience on his web site which is listed below. If you sit on a local planning committee or have interest in land use please check out these web sites and feel free to share these URLs with friends and neighbors.

Schindler's Land Use Page web page has a large amount of practical "nuts and bolts" material available that he keeps up-to-date. The main link to the new web page is <http://msue.msu.edu/lu>.

Sub pages and topics include:

- Pamphlets (including *Land Use Series*, court case summaries, statutes)
- Educational programs which I and others offer for your county
- Citizen (non-planning commission/ZBA member, for those citizen groups that are upset about some aspect of zoning decisions or proposals) materials
- Frequently asked planning and zoning questions and answers
- Planning, zoning, and other land use links
- 2001 planning and zoning legislation
- 2004 planning and zoning legislation
- 2006 Michigan Zoning Enabling Act
- 2007 Michigan Planning Enabling Act: [coming soon]
- Old stuff kept in the archives (repealed laws, and pamphlets about them)

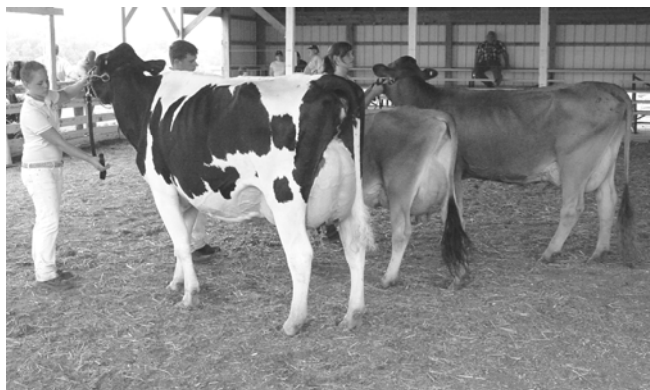
Other useful links to land use related information on the web site:

- MSUE Land Use AoE
- MSU Land Policy Institute
- Planning and Zoning Center at MSU
- Citizen Planner
- MSU Remote Sensing & Geographic Information Science
- Institute for Water Research at MSU

- Michigan Natural Features Inventory
- and lots more on my web page of links



Montcalm County 4-H Dairy Show Exhibitors



Newaygo County 4-H Fair Supreme Champion was the Holstein exhibited by Ashley Higgins

FOOT AND MOUTH DISEASE SCARE IN UK REITERATES NEED FOR BIOSECURITY VIGILANCE

Dr. Dan Grooms, Extension Veterinarian and Mark Hansen Emergency coordinator

Foot and Mouth Disease, a viral disease of ruminants and pigs, was found on several farms in England. FMD is considered a foreign animal disease in the US with our last reported case being found in the 1920's. This devastating disease led to over 1 million animals being slaughtered in the UK in 2001. This most recent outbreak serves as a reminder that our livestock industry is always at risk for introduction of harmful pathogens. Owners, managers and employees need to be ever vigilant in implementing and maintaining biosecurity practices to reduce the risk of disease on their farms.

According to Dr. Andrea Morgan of APHIS, "Foot and mouth disease is not transmissible from animals to humans but it does have serious implications for animal

agriculture in any country where the disease is detected.”

For more information, visit the Extension Disaster Education Network (EDEN) at <http://www.eden.lsu.edu/>.

MICHIGAN DAIRY MEMORIAL & SCHOLARSHIP FOUNDATION FRESHMAN SCHOLARSHIPS

By Dr. Miriam Weber Nielsen

The Michigan Dairy Memorial and Scholarship Foundation (MDMSF) awards over \$75,000 annually to students at Michigan State.

Scholarships are available to freshmen and Ag Tech students with a career interest in the dairy industry. Freshman applicants will be considered for one of the five \$1,500 Freshman Scholarships (awarded to Ag Tech or 4-year students) or one of the five \$2,000 Ag Tech Scholarships (awarded to 1st or 2nd year Ag Tech students). Sophomores, juniors and seniors can apply for scholarships in early 2007 (February 28 application deadline).

Criteria for selection of scholarship recipients are academics, extracurricular activities and an interest in a dairy-related career. The deadline for applications is September 27. Applications can be obtained through the Department of Animal Science web site (www.canr.msu.edu/dept/ans/academics/undergrad/scholarships.html).



Larry and Tammy Kuperis with children Zachary, Luke, Phillip, and Rose display the Kent County DHI Farmer of the Year Award by the farm sign.

NEW RULE ON SOCIAL SECURITY "NO-MATCH" LETTERS

Dr. Vera Bitsch (<http://www.msu.edu/user/bitsch/>)

Dept. of Agricultural Economics

Michigan State University

The Department of Homeland Security (DHS) features the final rule for an employer to deal with "no-match" letters from Social Security Administration (SSA) at its website: <http://www.ice.gov/index.htm>. Links provide the full text of the final rule (pdf-file) and a large questions and answers section. A summary follows below.

The DHS regulations provide guidance that will help employers comply with legal hiring requirements by outlining specific steps they should take under immigration law when they are notified that employees' names or corresponding Social Security numbers as provided on Forms W-2 do not match SSA records. No-match letters issued by the SSA for Tax Year 2006 will be accompanied by a letter from U.S. Immigration and Customs Enforcement (ICE) informing employers on how to respond to the employer no-match letter in a manner consistent with obligations under U.S. immigration laws.

There are many reasons for a mismatch between employer and SSA records, including transcription errors and name changes due to marriage that are not reported to SSA. Employers should not assume that the mismatch is the result of any wrongdoing on the part of the employee. Moreover, an employer who takes action against an employee based on nothing more substantial than a mismatch letter may, in fact, violate the law.

The DHS regulations and the ICE letter describe with specificity what steps employers should take upon receipt of a no-match letter: 1) verifying within 30 days that the mismatch was not the result of a record-keeping error on the employer's part; 2) requesting that the employee confirm the accuracy of employment records; 3) asking the employee to resolve the issue with SSA; 4) if these steps lead to resolution of the problem, follow instructions on the no-match letter itself to correct information with SSA, and retain a record of the verification with SSA; and 5) where the information could not be corrected, complete a new I-9 form without using the questionable Social Security number and instead using documentation presented by the employee that conforms with the I-9 document identity requirements and includes a photograph and other biographic data. Employers unable to confirm employment through these procedures risk liability for violating the law by knowingly continuing to employ unauthorized persons.

The employer has 90 days from receiving the no-match letter to completing a new I-9 form, if the situation cannot be resolved otherwise. While former employees

should be informed (under their last known address) of a no-match letter, further steps need not be taken if an employee no longer works for the employer.

COST OF PRODUCTION

Attached to this newsletter are the Michigan 2007 milk production cost estimates by USDA. At the following web site <http://www.ers.usda.gov/data/> you can find the USDA estimates for whole farm milk production costs for multiple years. These are much more current than the Michigan dairy farm business analysis summary. Dr. Craig Thomas has a 10-year summary on the MSU Dairy Team web site at <http://dairyteam.msu.edu/>.

Production costs for nearly all commodities this year are higher than prior years. Other sources of cost of production information are available for the upper Midwest states from the Finpack FinBin summaries at <http://www.finbin.umn.edu/CropEnterpriseAnalysis/Default.aspx>. I have included an example of Minnesota and Ohio corn on cash rent. If you need custom work rates a summary for the thumb of Michigan and work sheets are available at <http://www.msu.edu/user/steind/>. Compare these to your farm records to prepare for 2008 or develop marketing plans.

DAIRY MARKET UPDATE, JULY 2007

Dr. Craig Thomas posted the latest dairy market update in July at the MSU Dairy Team web site at <http://dairyteam.msu.edu/>. It covers the supply, demand and inventories of milk and milk products. Historically strong milk prices are available through the end of the year. Recent announcements of rBST free milk in the market may result in less milk production in 2008 and carry these prices longer into 2008. Enjoy these historical prices, get caught up on outstanding bills and make sure you have arranged sufficient feed supplies for next year.



Arden Eadie from E-D Farms shows Representative Mary Valentine, Muskegon, his CNMP while discussing the CAFO legislation at the WC Dairy Partnership Team meeting.

2007 Michigan Monthly Dairy Costs of Production Per CWT of Milk Sold									
	Jan	Feb	Mar	Apr	May R	Jun			
=====	=====	=====	=====	=====	=====	=====			
							\$/cwt		
Operating costs:									
Feed--									
Purchased feed	4.28	4.80	4.21	4.02	3.85	3.61			
Homegrown harvested feed	4.18	4.25	4.35	4.45	4.94	4.75			
Grazed feed	0.05	0.05	0.05	0.05	0.05	0.05			
Total, feed costs	8.50	9.10	8.61	8.52	8.84	8.40			
Veterinary and medicine	0.98	0.98	0.98	0.95	0.97	0.98			
Bedding and litter	0.22	0.22	0.22	0.21	0.22	0.22			
Marketing	0.23	0.23	0.23	0.23	0.23	0.23			
Custom services	0.41	0.41	0.41	0.40	0.41	0.41			
Fuel, lube, and electricity	0.58	0.59	0.63	0.65	0.68	0.68			
Repairs	0.69	0.69	0.69	0.67	0.68	0.69			
Other operating costs	0.00	0.00	0.00	0.00	0.00	0.00			
Interest on operating capital	0.24	0.24	0.24	0.23	0.23	0.24			
Total operating costs	11.86	12.45	12.00	11.86	12.27	11.85			
Allocated overhead:									
Hired labor	1.61	1.54	1.59	1.52	1.55	1.56			
Opportunity cost of unpaid labor	2.05	1.96	2.03	1.94	1.98	1.99			
Capital recovery of machinery and equipment	3.13	3.14	3.23	3.12	3.20	3.22			
Opportunity cost of land (rental rate)	0.03	0.03	0.03	0.03	0.03	0.03			
Taxes and insurance	0.28	0.28	0.28	0.27	0.28	0.28			
General farm overhead	0.81	0.82	0.83	0.82	0.84	0.83			
Total, allocated overhead	7.91	7.77	7.99	7.69	7.87	7.91			
Total costs listed	19.78	20.22	19.99	19.55	20.14	19.75			
=====	=====	=====	=====	=====	=====	=====			
Source: Based on USDA's 2005 Agricultural Resource Management Survey of milk producers and updated using current USDA milk production per cow and production input indexes.									
R=revised using newly available updated data.									
7/20/2007									

Compost Barn Seminar



Friday September 21, 2007 Zeeland Township Hall, Zeeland, MI

Schedule

10 a.m. to 12 noon Compost Barn Seminar
12 noon to 1 p.m. Lunch
1 p.m. to 3 p.m. Brouwer Dairy

Topics

- Composting Bedded-Pack versus Conventional Bedded-Pack
- Facility Design
- Bedding
- Management of the Bedded Pack
- Manure Management
- Benefits of Compost Bedded Pack Facilities
- Economics

Speaker

Wayne Schoper
University of Minnesota Extension
Extension Educator - Brown/Nicollet Co.

For information and to register call the MSU Extension Ottawa County office at 616/846-8250

The address of the Zeeland Charter Township Hall is 6582 Byron Rd, Zeeland, 49464. From I-196, take the Byron Road exit (Exit 55) and travel east approximately 1.5 miles. The hall is on the south side of the road. Park behind the building and enter the conference room from the back entrance to the building.

Note: We will be traveling as a caravan to each farm. Maps to each farm will be provided during lunch.

Sponsored by

Michigan State University Extension
Ottawa County Conservation District
Dairy Farmers of America
Michigan Milk Producers Association

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