

ISU Extension View

News from ISU Extension to Iowa Dairy Producers

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Focus on Corn Silage

Forage producers are realizing that high quality and high quantities of corn silage can benefit the good old pocketbook. Most farms in NE Iowa are suited to varying degrees with land for corn silage production.

Understanding how to feed high corn silage diets is touchy (especially to rumen and hoof health) if not done correctly and monitored continually. But, consider being able to put up a high portion of your annual forage needs in only a few days.

Research shows profitable rations are 1/3 alfalfa or grass forage, 1/3 corn silage and the middle third can go either way depending on farm resources. Thus, high corn silage diet farms are feeding half to 2/3rds their forage dry matter in corn silage.

Dale Thoreson / Larry Tranel

ISU Extension Field Specialists
Dairy/Beef and Forages

IOWA STATE UNIVERSITY
Cooperative Extension

Milk Marketing Opportunities Ahead

By Robert Tigner, ISU Extension Farm Management Specialist, NE Iowa

The 20 dairy states May, 2003 milk production dropped 0.4% due to 14,000 fewer cows along with 9 pounds less milk per cow.

Iowa dairy cow numbers remained flat compared to one month ago, 203,000, but were 6,000 fewer than one year ago. Milk per cow in May, 2003 rose 10 pounds to 1640. Both led to 8 million pounds of milk less than a year ago. Iowa continues to lose dairy cows that can have serious negative economic implications.

The SW US appears to have slowed its dairy herd growth for now. California, New Mexico and Arizona cow numbers were flat compared to the previous month. Idaho cow numbers rose by 1,000 compared to April.

The June 17, 2003 Milk Production report detailing the above appears to have changed the psychology in dairy product markets. During the next two days, block cheese rose by 8 cents per pound and barrels by 6.75 cents.

Dairy farmers will have opportunities to price milk to protect this upward rise in milk prices. An appropriate strategy would be to price late 2003 and the first months 2004 milk production up to 50% of a months expected production. We don't know yet if the current price rise will hold together, summer weather in the SW US and forage production will help indicate milk price direction.

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ISU Extension DAIRY TEAM
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Iowa Dairy Extension Field Specialists

Dairy/Beef and Forages

- Dale Thoreson, 319-267-2707
- Larry Tranel, 563-583-6496
- Chris Mondak, 712-737-4230

Agriculture Engineering, NE

- Dr. Dan Meyer, 319-425-3331

Farm Management, NE

- Robert Tigner, 641-394-2174

Crop Management, NE

- Brian Lang, 563-382-2949
- George Cummins, 641-228-1453

State Dairy Specialists:

- Dr. Lee Kilmer
- Dr. Leo Timms

Livestock Farmers to Generate Electricity

The Iowa Manure Digester Conference is set for August 20th at the Sportsman Restaurant near Oelwein. The conference is designed to provide information on how to set up a value-added manure digester on livestock farms to generate electricity. The conference will include talks on digester set-up and potential, two existing dairy digester owners and several engineers and electrical suppliers on what they would pay on the project along with two funding sources (Iowa Energy Center and Iowa Rural Development) and keys on constructing and operating digesters.

Exhibitors will be present that include digester designers and contractors and equipment companies. The pre-registration cost is \$20 if received by August 18 and \$25 if received later. The registration can be mailed to Fayette County Extension, P.O. Box 700, Fayette, Iowa 52142.

More information is available or by Dan Meyer, ISU Extension Ag Engineer at 563/425-3331 or e-mailing djmeyer@iastate.edu.

Vouchers for Professional Mental Health Services for Farm Families

Farm families are independent problem-solvers, but sometimes the stress of farming is more than can be resolved alone or with the help of friends.

Sowing the Seeds of Hope, a project of Ecumenical Ministries of Iowa, has a voucher program to provide mental health services for farm family members who are experiencing stress associated with changes in rural life. Families who do not have mental health insurance coverage may be eligible for up to five one-hour sessions.

The voucher program is accessed by calling the Iowa Concern Hotline - 800-447-1985. The hotline will screen callers for eligibility, provide the caller with names and phone numbers of participating providers, and mail the voucher(s) to an address provided by the caller. **The call is confidential.**

When contacting a participating provider, the caller only needs to identify as a Sowing the Seeds of Hope referral and then present the voucher at the appointment. The voucher must be used within 30 days of issue. The mental health professional is to provide short-term individual,

marital, family or group services at no cost.

The money for this program will be ending soon, so if you or a dairy family you know could benefit from professional help, call the Hotline today. **Seeking assistance in solving problems is a strength, not a weakness.**

Upper Midwest Grazing Conference

Midway Best Western, LaCrosse, WI July 29, 30 and 31, 2003

DAY 1, Tuesday, July 29

DAIRY EMPHASIS

10:00 am Keeping Dairy Grazing Simple, Panel Discussion

Moderated by Dave Wachter; **Panelists:** Art Thicke, LaCrescent, MN; Vance/Bonnie Haugen, Canton, MN; Mark Brown, Dodgeville, WI; Nick Rolling, Waterville, IA

1:00 pm Developing a Profitable Dairy Grazing Model

Larry Tranel, ISU Extension Dairy/Beef and Forage Field Specialist

2:45 pm Remodeled Low-Cost Parlor Tour from IA, MN and WI

3:45 pm Grazing Dairy Heifers, Roger Imideke, grazier, New London, MN

7:30 pm Keynote: Grazing Around the World (New Zealand, Ireland and Australia)

John Cockrell, Grazing Consultant and former Extension Agriculture Agent

9:00 pm Networking Social

DAY 2, Wednesday, July 30

DAIRY AND LIVESTOCK EMPHASIS

Dairy Breakout Sessions

8:00am Low-Cost Housing and Feeding Systems

Dr. Dave Kammel, BioSystems Engineer, UW-Extension

9:45 am Designing the Cow of the Future

Dr. Les Hansen, Professor of Animal Science, Univ of Minnesota Extension

10:30 am Crossbreeding Experiences; Mark Opitz, grazier, Mineral Point, WI

Livestock Breakout Sessions

8:00 am Stocker Grazing, Larry Smith, DVM and grazier, Vernon County, WI

9:45 am Grazing Stockers, Heifers and Direct Marketing

Dick Cates, grazier, Spring Green, WI

11:00 am Farm Tours, Board Buses (box lunch provided)

11:30 am Arrive at Art Thicke dairy farm, LaCrescent, MN

2:30 pm Arrive at Vance and Bonnie Haugen dairy farm, Canton, MN

6:00 pm Arrive at Midway Hotel (dinner on your own)

7:00 pm Networking Social

DAY 3, Thursday, July 31

FORAGE MANAGEMENT EMPHASIS

8:30 am Forage Species and Grazing Management

Dr. Dan Undersander, Extension Forage Agronomist, U of Wisconsin-Extension

9:30 am Break

9:45 am How are Ryegrass and Soft Leaf Fescue Performing?

Dr. Paul Peterson, Extension Forage Agronomist, U of Minnesota Extension

10:45 am Complimentary Forage Harvesting Systems and Costs

Dr. Dan Undersander, Extension Forage Agronomist, U of Wisconsin-Extension

11:45 am Final Comments and Adjournment

For more information or to register call 563-583-6496 or check out the website at www.wisc.edu/cias/uppermidwest Cost is \$75 first person/\$45 second person or \$45 for one-day registrations. Student cost is \$20 for whole conference. Late fees apply after July 17th of \$15 per person.

Corn Silage Chop Length

The general recommendation for corn silage harvest without a processor is 3/8" theoretical length of cut (TLC). This may vary between 1/4" to 1/2" TLC depending upon whole-plant moisture, hybrid and forage harvester.

To get good breakage of cobs and kernels without a processor it is often necessary to chop finer than we'd like from an effective fiber standpoint. Unbroken kernels tend to pass through the cow undigested and large pieces of cobs or whole cobs are prone to sorting at the feed bunk. This typically means that only 5-10% of the silage should be in the coarse particle fraction or retained in the top screen of the Penn State-Nasco shaker box.

Evaluate percent coarse particles and degree of kernel and cob processing to determine the proper TLC setting for your harvester. Corn silage that is harvested past 1/2 milkline stage of maturity or less than 65% whole plant moisture may need to be chopped at 1/4" TLC. It may be possible to harvest at 1/2" TLC immature, wet and soft kernel variety corn silage. It appears brown mid-rib (low lignin) corn silage should not be chopped less than 1/2" to maintain effective fiber.

Based on Wisconsin research, the TLC with a kernel processor is 3/4" TLC meaning 20-30% of the silage will be coarse or in top of shake boxes. Processed corn silage that is harvested at black-layer or about 60% moisture may need to be chopped at 1/2" TLC. Roll clearance ranges from 1/16" to 1/8" about space of a pocketknife blade. Test and see if all kernels are broken. The drier the silage tighter the rolls should be.

Adapted from Randy Shaver, UW-Madison

Feeding Corn Silage to Dairy Cows

Corn silage has long been a staple on commercial dairies. Use of corn silage continues to increase due to high per acre yields of dry matter and energy, high degradability of alfalfa protein, potential for more consistent forage, more timely harvesting, along with manure management issues. In addition, crop budgets depict it may be the most profitable crop on most Iowa dairy operations if managed well and the best hybrids are chosen.

The high energy requirements of high producing cows increase the difficulty of meeting animal needs for both energy and fiber. Its length of cut and processing determines the effectiveness of corn silage fiber at stimulating the rumen. Unprocessed and coarsely chopped silage will stimulate more chewing and salivation per pound of fiber than processed or finely chopped. However, it will not pack as well in the silo, will have fewer kernel coats broken and will have larger pieces of cob which allows sorting and possibly refusal than processed and/or finely chopped corn silage. Sorting can drastically change your ration.

Wetter corn silage (>62%) can be chopped coarser and with less benefit of kernel processing than drier corn silage. Drier kernels require a finer chop or processing to break kernels that helps maximize starch digestibility. In addition, wet corn forage chops more consistently than drier corn silage. The chopper knives shred dry leaves rather than cut, decreasing the uniformity of particle size and allowing further sorting by cows. More milk per ton of forage favors the higher moistures and processing.

Corn silage contains up to 35% starch and needs to be supplemented differently, especially when fed at high levels due to the high starch content. Excessive starch can lead to digestive upsets and rumen acidosis. Thus, corn silage can be a dairy operation's highest profit crop but it needs to be managed well.

By Dawn Stendel, Dairy Intern, Life in Iowa Program, ISU Extension

Corn Silage Harvest Height is typically set at 4 inches.

Increasing the height to improve silage quality may not be profitable since the improvement in quality may not offset the yield loss. In a Wisconsin study, increasing the harvest height from 6 inches to 18 inches, reduced yields up to 0.6 tons per acre while reducing the NDF from 59.9 to 59.4% and milk per acre 3%. When high nitrates are expected, increasing harvest height 6 to 8 inches may be good as nitrates accumulate in the lower portion of the stalk.

Corn Silage Moisture for the best lactation performance by dairy cows occurs at 65%-70% whole plant moisture. Harvesting higher increases seepage losses and acidity which reduces dry matter intake and yield. In upright silos, it may need to be a bit drier than 65% to minimize seepage. But, research has consistently shown reduced fiber and starch digestion along with reduced lactation performance when harvested below 60% moisture or less. Corn silage harvested below 60% will need to be either fine chopped or processed to minimize losses in starch digestion and milk yield.

High Corn Silage Diets

By Larry Tranel, adapted from Dr. Randy Shaver, UW-Madison.

Corn silage is often the highest yielding, highest quality and most profitable forage for dairy. So, how does one supplement high corn silage diets?

Recommended minimum allowances for NDF and ADF are 27%-30% and 18%-21% on a dry matter basis, respectively.

Researchers have observed DM intake and milk yield response to feeding high corn silage diets containing 19%-21% NDF from forage compare to 24% NDF from forage. Both milk fat test and rumen pH were reduced slightly at lower forage NDF. An exception is brown mid-rib corn silage where 23-24% may be more appropriate.

The use of whole cottonseed may allow minimum dietary NDF from forage to be reduced 2%-3% but milk fat test and hoof health should be well monitored.

TMR's should contain a minimum of 8% of particles on top screen of Penn State-Nasco shaker box. This is especially important for early lactation cows, and may necessitate feeding 25%-30% of the forage DM as long or coarsely processed hay. Cottonseed shows up on the middle screen and may allow the minimum recommended to be 2% lower.

Recommended dietary allowances for NFC and starch are 35%-40% and 25%-30% of dry matter, respectively. Ruminal starch degradability should be evaluated and where it is low (i.e. coarse dry corn or unprocessed corn silage) diet formulation should be to the high end of these ranges. Where ruminal starch is high, (immature, wet or highly processed high-moisture corn) formulation should be on low end of ranges.

With high corn silage diets, high dietary fat especially from non rumen-inert sources may cause milk fat depression. Diet crude protein should be in the 16.5%-18% range for mid-late lactation cows. Sufficient degraded intake protein is needed to support rumen microbes and should comprise 60%-65% of dietary CP. Undegraded intake protein should be 35%-40% of crude protein or 6.5% of dry matter. Close attention should be paid to the amino acid profile of UIP supplements.

Corn by-products, corn gluten meal, distillers dried grains and brewers grains should not be emphasized in the protein formulation of high corn silage diets due to their low lysine content. Heat processed soybeans, heat processed soybean meal, fish meal, blood meal and meat meal are better UIP sources in protein supplements for high corn silage diets. Among these, quality control and cost are important considerations.

Corn silage, relative to alfalfa, is inherently low in calcium, magnesium, potassium and sulfur. The recommended calcium allowance is .8% - 1% (DM basis) with calcium carbonate as the primary calcium supplement. The magnesium allowance is .30%-.35% (DM basis) with magnesium oxide as the primary magnesium supplement. Dynamate (11% Mg-18%K-22%S) is a source of magnesium, potassium and sulfur making it a popular ingredient in high corn silage diets. Other common sources are potassium chloride (Dyna-K); and potassium carbonate (K-Minus) and calcium sulfate (gypsum), respectively.

Recommended allowances for potassium and sulfur are 1-1.2% and .20-.25% (DM basis). In heat stress situations, the potassium allowances rise to 1.2%-1.5% (DM basis). Salt should be supplemented at the rate of .50% of lactation TMR dry matter. Use of sodium bicarbonate as a buffer may necessitate the use of potassium chloride rather than sodium chloride to balance sodium, potassium and chloride concentrations. Phosphorus recommendation is **.35%-.40%**. Producers should not exceed this level due to environmental phosphorus issues and lack of increased milk production and dry matter intake above that level.

With high corn silage diets, sodium bicarbonate (or 3:1 mix of sodium bicarbonate and magnesium oxide) is recommended at 1% of lactation TMR dry matter. Potassium carbonate can also substitute. Calcium carbonate works as a post-ruminal buffer to improve starch digestion. Free choice sodium bicarbonate may benefit early lactation, high producing or heat-stressed cows but salt may be needed to limit intake. Sodium or potassium buffers should not be fed to dry cows.

Yeast products have shown to increase DM intake and lactation performance in high corn silage diets, particularly in transition and early lactation. If aflatoxins are suspected, it appears betonite products at 150 grams per day may help.

Lastly, the feeding of high corn silage diets is feasible but may be dependent on cropping plans and residue issues and willingness of producers to use after harvest cover crops to reduce soil erosion.

A Model Beginning Dairy Producer

Are you or someone you know interested in beginning a dairy career? Despite the loss of producers for many reasons, new producers are getting started with minimal resources. Many beginning dairy producers are following a general model being used in many Mid-western states. What are they Using?

- 1) **Use of beginning farmer loan programs.** New producers are encouraged to check out programs to assist beginning farmers acquire financial resources to get started dairying.
- 2) **Use of financial analysis.** Budget your operation carefully and compare your budget to other financially successful model farm operations. Dairies use a wide variety of production techniques for success. Dairy TRANS, FINPACK and other programs are available through ISU Extension.
- 3) **Use of lower cost milking systems.** The next generation will probably not milk in stall barn operations due to labor efficiency and ergonomics. Low cost remodeling of stall barns and older parlors whether owned or rented, is a means to milk more cows or harvest more hundredweights per person per hour. Combining a labor efficient milking and grazing systems are allowing some to handle 70-80 cows per one full labor equivalent.
- 4) **Use of limited machinery resources.** Beginning farmers are seeking means of getting started with a tractor, spreader and skid steer and

looking to minimize crop production machinery needs by judicious use of custom harvesting, machinery sharing, rotational grazing and limited crop acres.

- 5) **Use of land bases for forage production.** The focus is often an acre or so per cow in rotational grazing along with one-third of an acre of corn silage (owned, rented or purchased out of the field). Other alfalfa forage is purchased or raised depending on land available and the production costs involved.
- 6) **Use of rotational grazing to reduce input costs.** Many Midwestern states now have on-farm data showing grazing is as or more profitable than average confinement dairies. Grazing is being chosen for reasons of quality of life, reduced machinery needs, reduced manure handling issues, labor efficiencies, environmental stewardship, less tillage and annual planting of crop, reduced pesticide and energy use and simply because they like it. Some graziers in NE Iowa are producing milk in the \$9.50-\$11.00 per hundredweight range with mediocre production averages, yet with great returns to labor and assets.
- 7) **Use of corn silage contracts.** Purchasing a high energy forage out of the field at around 1/3 of an acre per cow is a goal. The dairy producer asks Mr. Corn Grower to purchase standing corn for market price per bushel less \$25 or so per acre for not having to combine it. Mr. Corn Grower saves all drying, harvesting, storage and transportation costs. The dairy producer pays for the custom harvesting and bagging, etc. and provide 10-20 tons of dairy manure to pay for the stalk taken off. This corn silage provides for a large volume of high energy forage. Check ISU Publication LT-130 for more information on silage contracts.
- 8) **Use of Extension, grazing network, and peer group resources.** Many people are available for advice to get beginning producers started. Develop relationships with neighbors, family and others to share resources, ideas, etc.
- 9) **Use financial and production resources relative to risk.** Large investments in new facilities while building equity may be risky. Remodeled facilities, though often not ideal, can reduce risk and improve ability to build equity. Budget out carefully so as to not sacrifice long term profits with short term savings.
- 10) **Use of lender's who understand your operation.** Find a lender who not only is willing to work with you but also is informed about the type of operation that you want to implement.
- 11) **Use of various technologies to maximize dry matter intake and cow comfort.** Other issues pale in comparison. Every pound of dry matter increase above maintenance equals 2.5 lbs of milk and cows make milk lying down with good ventilation, cooling and quality water access.

Larry Tranel, Dairy Field Specialist, ISU Extension. *Larry has devoted much of his Extension career to assist beginning dairy farmers by means of grazing, building relationships, remodeling facilities and use of the Dairy TRANS financial and budget analysis.*

ISU Extension School for Beginning and Transitioning Dairy Producers

Mission: *To provide education, skills and aspirations to beginning, transitioning and retiring dairy producers to seek profits through the use of management intensive grazing.*

Sessions: all sessions run from 1:15 pm to 3:15 pm, Cost is \$10 per session or \$50 for the course. A certificate of completion will be given to those completing the course. Beginning producers will be assisted in getting lined up with retiring producers interested in working with a beginning producer via cash rental or sharemilking arrangements. **Registration is open to all producers interested in how dairy grazing works.**

1. Thursday, November 6th: Can We Really Make Over \$50,000 Grazing Cows?

Larry Tranel and experienced dairy grazier, Jerome Gaul (Epworth, IA) will detail financial pictures of Model Grazing Farms netting \$35,000-\$70,000 per person annually.

2. Wednesday, November 12th: The Basics of Management Intensive Grazing

Larry Tranel and experienced dairy grazier, Charles Opitz (Mineral Point, WI) will detail grass management strategies. Brian Lang, ISU Extension crops specialist will detail seeding rates, practices and varieties.

3. Thursday, November 20th: Nutrition Management Strategies

Dale Thoreson, ISU Extension dairy specialist and graziers, Dan Vosberg, (South Wayne, WI) and Jim Hageman (Calmar, IA) will provide feeding options to supplement pasture and winter rations.

4. Thursday, December 4th: How I Got Started Grazing

Larry Tranel and a panel of graziers, Heidi Lantzky (Wautoma, IA) and Dan Pfab (Bernard, IA) will detail their paths of beginning their dairy career via sharemilking and rent/buy feed options. Robert Tigner, ISU Farm Management specialist will discuss other issues on getting started on less than \$10,000.

5. Thursday, December 11th: Maintaining Quality of Life through Labor Efficiencies

Larry Tranel and graziers Dale Gaul (Peosta, IA) and Vance Haugen (Canton, MN) will detail low-cost parlors and other strategies to reduce labor and capital needs.

6. Thursday, December 18th: Putting a Grazing Plan Together

Larry Tranel and grazier Joel Kurtenbach (Monmouth, IA) will describe various arrangements for getting started. Robert Tigner, ISU Extension Farm Management Specialist will lead a discussion on working with a banker and Farm Service Agency beginning farmer loan options.

Location: Dubuque County Extension Office, 14858 West Ridge Lane, Dubuque, IA--half way between Dubuque and Peosta on Hwy 20 just west of Namasco Steel and just east of IOCO truck stop. Turn south on North Cascade Road or in front of Namasco Steel to get to the West Ridge Business Center.

REGISTRATION FORM – ISU Extension School for Beginning and Transitioning Dairy Producers

Name _____ Address _____

City _____ State _____ Zip _____ Phone _____

Please register me for the following sessions: (please check all that apply)

Thursday Wednesday Thursday Thursday Thursday Thursday
Nov 6th ____ Nov 12th ____ Nov 20th ____ Dec 4th ____ Dec 11th ____ Dec 18th ____

Mail registration form to: Larry Tranel, ISU Extension
14858 West Ridge Lane, Suite 2
Dubuque, Iowa 52003

Checks payable to: ISU Extension
For more information call or e-mail:
563-583-6496 or tranel@iastate.edu

Contracting Corn Silage for Your Dairy

The dairy industry continues to change as cow numbers relative to tillable crop acres continues to increase. This precipitates a need for off-farm forages such as corn silage to be purchased and a need for dairy manure to be exported off the farm in many cases.

Corn silage buy-sell contracts are becoming more popular. The corn silage buyer benefits with the purchase of high volume of energy-rich feed that can be harvested and stored in a very timely fashion for a cost per ton of dry matter that is competitive with other forage alternatives, including raising their own corn silage. It may also give an avenue to apply excess manure nutrients for dairies needing additional land for manure spreading if team cropping with a neighbor.

The corn silage seller benefits by attaining a local market price with less labor and without harvest, dry down, transportation or storage costs. In addition, if the dairy is looking to apply manure, the cash crop producer can increase soil nutrient values over time in trading the value of the corn stalks for dairy manure. As Table 1 shows, cash crop producers can gain by teaming up with neighboring dairy producers to engage in a win-win situation for improving profitability for both.

Fact Sheet LT-130 by Larry F. Tranel, Iowa State University Extension Dairy Field Specialist; David B. Fisher University of Illinois Extension Dairy Educator; Robert C. Tigner, Iowa State University Extension Farm Management Specialist; and Dale Thoreson, Iowa State University Extension Dairy Field Specialist.

Table 1. Comparison of Returns: Grain versus Forage (per acre)¹

	Corn for Grain ² for Cash Sale	Adjustment for Corn Silage ⁴
Gross Income		
Crop Sales (160 bu.x \$2.35)	\$376	
Farm Program payments ³	\$80	
Total Gross Income	\$456	
Cash Production Costs		
Seed	\$33	\$36
Fertilizer	\$65	\$75
Chemicals	\$44	\$44
Machinery Costs	\$88	\$63
Drying Costs	\$25	none
Gross Returns	\$201	\$238
Returns after land charge (\$150/acre)	\$51	\$88
Return after labor charge (\$10/hour)	\$25 ⁵	\$68 ⁶

Accordingly, a cash crop producer can increase net profits by \$43 per acre or \$0.27 per bushel in this example by selling to a dairy producer. In addition, machinery and labor costs are saved by not needing to harvest, transport, store and/or dry the corn. The only issue needing attention is the lessened amount of residue left in the field from an environmental perspective. However, timely application of dairy manure bartered in the transaction could and should reduce this issue to a negligible level.

The trading of the corn stalk for dairy manure is also a win-win situation. Twenty tons of dairy manure would put back up to 240 pounds of nitrogen per acre, 120 pounds of P2O5 and 240 pounds of K2O (each ton of dairy manure contains approximately 8-12 lbs Nitrogen, 4-6 lbs P2O5 and 8-12 lbs of K2O). Twenty two tons of corn silage removes an estimated 77 pounds of P2O5 and 143 pounds K2O, about half which would have been removed already just by harvesting the grain. Thus, the replacement of dairy manure is more than enough to replace the nutrient values contained in the corn stalks. In fact, a rate of 10-12 tons of dairy manure per acre would probably suffice for the replacement value of both the stalk and grain.

Corn silage contracts must be equitable for both buyer and seller.

¹ Table 1 prepared by Robert Tigner, Dale Thoreson and Larry Tranel, Iowa State University Extension.

² 160 bushel yields

³ maximum payments possible for 2002 farm bill

⁴ 22 tons per acre actual corn silage yield

⁵ 2.6 hours

⁶ 2 hours

Sample Dairy Corn Silage Contract

This buy-sell agreement is between _____, buyer and _____, seller. Buyer agrees to purchase approximately _____ tons or _____ acres of corn silage from the field located at/near _____. The buyer agrees to purchase the corn estimated at _____ bushels per acre multiplied by a market price of _____ per bushel (or the local market price on day of harvest) less a custom combine harvest cost per acre of \$_____ (usually \$22-\$30 per acre). The buyer agrees to purchase the silage as is with no other harvesting, drying, transportation or storage costs to the seller. The buyer agrees to harvest the silage and pay for all costs incurred in the harvesting and storage of the silage. In addition, the buyer agrees to return approximately _____ tons per acre of dairy manure (6000 gallons liquid manure would supply nitrogen needs for 160 bushel yield) to compensate the seller for the nutrient content of the stalk. The buyer and seller would need to sign and date the contract.

Example Form Calculating Net Values to Seller per bushel and per acre

		Yours
Selling Price for shelled corn (@ 85% dry matter)	= \$2.35/bushel	_____
Minus harvesting cost (\$28/acre / 160 bushel)	= - \$.16/bushel	_____
Drying, handling, storage (\$25/acre / 160 bushel)	= - .16/bushel	_____
Net Value to Seller	= \$2.03/bushel	_____
160 bushels corn @ \$2.03 bushel	Net Value to Seller = \$325.00 / acre	_____ with manure
*Plus P & K removed	= +\$21.00/acre	_____
*only if manure is not to be returned to the land.	Net Value to Seller = \$346.00/acre	_____ w/o manure

Example Form Calculating Net Values to Buyer per ton

Number of tons of corn silage harvested at <u>35</u> % dry matter (20)	= \$16.25/ton	_____ with manure
Cost for harvesting, transporting and bagging	= + \$9.00/ton	_____
(this \$25.25 per ton equals \$72 per ton dry matter)	Net Value to Buyer = \$25.25/ton	_____ with manure

Payment to the Seller can be based on either a per bushel basis or per ton of silage harvested basis. The per bushel of corn harvested would require a pre-harvest yield check. If the payment is based per ton harvested, it is critical to have accurate dry matter tests and yield estimates. This will require moisture testing representative samples daily or by field and weighing all representative loads of silage across a scale. Price adjustments will be needed for corn silage at varying moisture levels. For example, in the value above on 35% dry matter silage equals \$16.25 per ton or \$0.023 per pound of dry matter. Therefore, silage at 40% dry matter is valued at \$18.57 (800 lbs. dry matter x \$.023) and silage at 30% dry matter is valued at \$13.80 (600 lbs. dry matter x \$.023). This assures that the grower will receive the same gross payment regardless if the buyer harvests at varying moisture levels.

The buyers cost of chopping, hauling and ensiling the corn silage is estimated at \$6 per wet ton (\$5-\$7 range), based on cost estimates. Another \$3 per ton is typical for storage costs. Therefore, the total 35% corn silage value to the cow would be \$25.25 (\$16.25 + \$9.00). This does not include the shrinkage due to fermentation and feeding losses.

Inoculants for Corn Silage

Inoculants have been successful less frequently in corn silage than in haylage. Research shows improvement about 40% of the time in corn silage compared to 67% of the time in haylage. Corn silage produces 10 times the natural population of lactic acid bacteria than alfalfa. Thus, with such good natural fermentation, it is difficult to improve.

When the inoculant does improve fermentation, reductions in bunk stability have been observed but dry matter losses from the silo decrease 1-2%. While these products are often marketed as improving bunk stability, research generally shows little effect.

Increases in animal performance have been observed more often than increases in intake. Times when inoculants are more likely to be successful are immature corn, overly dry corn and the day after a killing frost as the natural population may be less competitive than inoculants.

If deciding to use an inoculant, one should buy a product that applies at least 90 billion live lactic acid bacteria per ton of crop or 100,000 per gram of crop. The most common is *Lactobacillus plantarum*. Other *Lactobacillus* or *Pediococcus* may be present; also *Enterococcus faecium* is common. Be skeptical of products that contain other species. And, be sure to buy only a product labeled for corn silage. Liquid products applied at the chopper is best but if your water is chlorinated above 1 ppm, the chlorine can kill inoculant bacteria.

By Larry F. Tranel, ISU Extension Dairy/Beef and Forage Field Specialist, adapted from Dr. Richard Muck, USDA Forage Research Center, UW-Madison.

Dairy Peer and Dairy Women Groups

Purpose: Despite the efficiencies gained through modernized facilities and electronic communications, dairy producers and managers still work long hours, especially during expansion or start-up projects. "Tunnel vision", isolation, and decreased access to updated information can result. Dairy producer groups are local, informal groups that can foster net-working, support, and information –sharing.

Scope: Currently there are 5 active Dairy Peer Groups functioning in northwest Iowa. Thirty-seven farms are represented by peer group members. Farm size ranges from 50 cows to 3000 cows. Two of the current groups are attended by men, although not formally designated as "men only." Three groups are called "Dairywomen Peer Groups". Efforts are in progress to re-start a previously active group, and to join forces with a local veterinary service to form a group for their clients.

Recent or current items of discussion or interest in the peer groups:

- Managing stress; Strategic Business Planning applied to dairies; Cost of Production; Improvement of facilities to achieve cow comfort; Exchange of marketing strategies information; Improving labor efficiency and chore organization.
- Developing ways to improve/build a positive image for the dairy industry; Improving family/work crew communications; improving quality of life through relief workers, through short, inexpensive get-a-ways for family members.

Observation on results or impacts:

- Producers are becoming de-isolated; evidence of network building, friendships forming, increased phone & e-mail communications between farms; producers are connecting into previously untapped resources.
- Small group discussions of topics presented at Dairy Days or 4-State Extension meetings; provide venue for other Extension programs or efforts – i.e. Cost of Production project; Strategic Planning; Family Resources; Connects dairy community to non-Extension resources in their region.
- Increasing a sense of a "Dairy community" or "dairy industry" – perhaps building the base for an Iowa Dairy Producer organization?
- Some members expressing sense of increased self-confidence, empowerment. The spouses encourage each other to go to their peer group meetings; they've expressed that the peer group was a good thing for their spouses.

Reported by: Chris Mondak, DVM, ISU Extension Dairy field specialist, Northwest Iowa, 712-737-4230, cmondak@iastate.edu

Producers interested in ISU Extension coordinating a small peer group of dairy producers or a dairy women's group in their area or community are asked to call the dairy field specialist in your area. As one can see from above, both groups have benefited by getting off the farm and discussing issues in a small peer group. We all learn from others.