# ISU Extension View

*News from ISU to NE Iowa Dairy and Beef Producers*

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This summer provided a great opportunity for dairy and beef producers to pick up a few strategies from many of the meetings which were held over the summer.

The Dairy Options Pilot Program (DOPP) provided some basics on being more proactive at pricing milk. This is a topic which may be more and more of a concern over time.

Other field days such as the dairy and beef pasture walks provided great opportunities to better devise cost reducing plans forage harvest through management intensive grazing.

To top it all off, the 4-State Dairy Management Conference in Dubuque with the 260 attendees generated some thought-provoking discussions on management areas pertinent to maintaining efficiency through some depressed milk prices.

Thanks to all of you who participated.

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## *Pasture Walks Provide Opportunity*

We learn best by observation, demonstration and discussion which has been the success of pasture walk opportunities as discussions swelled in many topic areas for reducing forage costs using management intensive grazing. From learning about various grass/legume varieties and species to heat stress management on pasture and milking parlor design to name a few. Walks begin at 12:30 pm. Walks coming up for your welcomed participation include:

September 6th—**Lee Kurtenbach,** 236 Hwy 30 Mechanicsville
Lee has a large jersey herd in the middle of corn-soybean country. Topics will include low-cost parlor construction which Lee and his brother have built in the Tri-State area. The farm is located on Hwy 30 halfway between Lisbon and Mechanicsville.

September 20th—**Don Baker**, 30999 Kale Road, West Union
Don has a seasonal grazing herd converting to organic production with improved lanes and multi-species pastures. Topics will include a representative from Organic Valley speaking of organic production.

October 25th—**Jim Hageman**, 1459 Hwy 150, 1.5 miles S of Calmar
Jim has a high producing holstein herd. Topics will include late season-grazing on stockpiled hay ground.

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## *Words of Wisdom*

An instructor put several large rocks into a glass jar, then added smaller rocks, then gravel and asked his class if it was full. "Yea," they replied while he added smaller pebbles, then sand to fill some cracks and finally added water, much to their amazement how much he could fit in. "What's the point of all this?" he asked. Of course, the time management students replied "no matter how full your schedule is you can always fit something more."

**"No!" he replied**, "The point is that if I would have put the large rocks in last they would not have fit." The same is true for life. What are the big "rocks" in your life—your Family, Faith, Farm or Friends? Whatever it is, put them in first so the important things and people in your life don't get left out. Make a list of the most important "rocks" in your life. Are they your focus? If not, why not?

## *Dairy/Beef and Forages Calendar*

**September**

6 Pasture Walk, Lee Kurtenbach, 236 Hwy 30, Mechanicsville, 12:30 pm, Topic: Low Cost Parlors
7 Tri-State Ag and Dairy Expo, Decorah

13 Employee Management Meeting, Iowa City
14 Employee Management Meeting, Nashua with Don Tyler, presenter. For information, call 319-425-3331.

16 Youth Dairy Classic, West Union, 319-267-2707
20 Pasture Walk, Don Baker, 30999Kale Road, West Union 12:30 pm, Topic: Organic Dairy Production

**October**

11 Practical Farmers of Iowa Field Day, Matt Stewart, 15435 25th St., Olwein
25 Pasture Walk, Jim Hageman, 1459 Hwy 150 Calmar, 12:30

**November**

20-21 Iowa Management Intensive Grazing Seminar, Pella, IA

# Packing a Bunker Silo – How Much is Needed?

The density of corn or hay crop silage in a bunker or pile will dictate the amount of dry matter loss. Historically, the more dense the silage is, the less the losses.

But what density is adequate? And, how do we change the density if we're not achieving optimum results?

A recent field trial done on 168 bunker silos in Wisconsin helps provide some answers. Twenty Wisconsin County Agents used a 2-inch diameter core on 168 bunker silos to measure density.

Several other items were also recorded including number of packing tractors, tractor weight, tires per tractor, tire pressure, tire condition, number of drive wheels, silage delivery weight, packing time per day, harvest time per day, filling time, filling technique, initial layer thickness, silo dimensions, maximum silage height, crop, crop maturity, and theoretical length of cut.

Cores were taken at chest height and four locations across the bunker face.

## *Results of Core Samples from 168 Bunker Silos*

| | Haycrop Silage (87 Silos) | | Corn Silage (81 Silos) | |
|---|---|---|---|---|
| | Avg. | Range | Avg. | Range |
| Dry Matter % | 42 | 24 – 67 | 34 | 25 - 46 |
| Wet Density, lbs/ft$^3$ | 37 | 13 – 61 | 43 | 23 - 60 |
| Dry Density, lbs./ft$^3$ | 14.8 | 6.6 – 27.1 | 14.5 | 7.8 – 23.6 |
| Avg. Particle Size, in. | 0.46 | 9.26-1.23 | 0.43 | 0.28 - 0.68 |

Densities were positively correlated with the height of the silage above the cores. So to arrive at a common density, they were adjusted for silage height. Then dry matter density was positively correlated with **average packing tractor weight**, **packing time** and **dry matter content**. Density was **inversely correlated with the initial depth of the crop layer**.

The other factors, such as crop, length of cut, tire pressure, and single or dual tires were not correlated with bunker density. Cornell researchers have developed a chart for dry matter losses influenced by silage density.

| Density (lbs. DM/ft$^3$) | DM Losses, 180 days (%) |
|---|---|
| 10 | 20.2 |
| 14 | 16.8 |
| 15 | 15.9 |
| 16 | 15.1 |
| 18 | 13.4 |
| 20 | 10.0 |

Based on this information we should be shooting for a dry matter density of at least 14 lbs./ft$^3$. Some methods to increase the density include:

1. Increasing tractor weight
2. Spreading the crop in thinner layers.
3. Reduce the delivery rate (special concern with custom chopping)
4. Adding packing tractor(s)
5. Increase depth of bunker silage
6. Pack for additional time
7. Increase dry matter. Although this may be counter productive to ideal fermentation in corn. Silage which occurs at a dry matter between 30-40%

An Excel spreadsheet is available to calculate expected bunker densities at http://www.uwex.edu/ces/crops/uwforage/dec_soft.htm or give your local county extension director a call to access it.

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***Fact Sheet by Dale Thoreson, ISU Field Specialist – Dairy/Beef/Forages, August, 2000.***

# Storing Forage: What Does it Really Cost?

Dairy farms that expand often must decide what type of storage to construct for the additional forage added cows will require. Filling and removal rates and cost of storage are considerations in the storage chosen. Dairy farms that need to replace storage facilities have exactly the same considerations. A study by Brian Holmes, University of Wisconsin-Madison agricultural engineer, can help in making the decision. Eight systems of storing forages were considered:

- Steel/Glass tower silos: new and reconditioned
- Cast-in-place top unloading tower silos
- Concrete stave tower silos
- Bunker silos
- Packed silage piles
- Bag silos
- Wrapped baleage

The results of the study are in the following table. The numbers are annualized per ton dry matter cost and include both capital costs as well as annual operating costs and likely dry matter losses.

There are several conclusions that can be drawn from Holmes' work. First, non-permanent storage systems, silage bags, silage piles and wrapped baleage, are the most economical based on total annual cost per ton of dry matter. Second, none of the oxygen-limiting tower silos are economically competitive with other silage storage systems until very large quantities of forage are in play. Third, well managed bunker silos are cost competitive with concrete stave silos. Usual dry matter losses for a well-managed top-unloading concrete stave silo are approximately 10% while a bunker silo losses will be about 13% when well-packed, covered with plastic and fed out carefully. If a bunker silo is poorly managed, dry matter losses can exceed 40%.

Cost is certainly one of the factors in deciding on a storage system. Several others go into the decision as well. For example, one must dispose of all the plastic from bags and baleage and have a site that is easily accessible in mud and snow. A silage pile must be well managed also. If not, large dry matter losses will eat up any savings due to reduced annual cost of silage piles when good management takes place. Feed out rate is another consideration. Bunker silos have high feed removal rates. A tower silo may not, thus increasing labor costs to feed a dairy herd.

Choosing the system to use is a balancing act. The possible cost of a storage system is a starting point.

If producers want to individualize forage storage costs for their farm, a computer spreadsheet template exists for Microsoft Excel. Contact Robert Tigner at 641-394-2174 at the Chickasaw County Extension office for a copy and assistance in using it.

Table 1: Total Annual Cost/Ton DM for Four Total Quantities

| *QUANTITY STORED* | *384TDM* | *768TDM* | *1536TDM* | *3072TDM* |
|---|---|---|---|---|
| Storage Type | I | | | |
| Steel/Glass tower new | 82 | 60 | 59 | 58 |
| Steel/Glass tower recondition | 55 | 41 | 40 | 39 |
| Cast-in-place concrete tower | 58 | 41 | 40 | 40 |
| Concrete stave silo | 46 | 36 | 35 | 34 |
| Bunker: 13% DM loss | 45 | 37 | 35 | 32 |
| Bunker: 18% DM loss | 49 | 41 | 39 | 37 |
| Bunker: 25% DM loss | 55 | 47 | 45 | 43 |
| Packed silage pile | 37 | 32 | 30 | 29 |
| Silo bag | 38 | 32 | 28 | 27 |
| Wrapped baleage | 36 | 32 | 29 | 28 |

Adapted from 4-State Forage and Feeding Conference 1998, Brian Holmes, UW-Madison

***Fact Sheet by Robert Tigner, ISU Farm Management Field Specialist***

# *Extending the Forage Season by Stockpiling*

If forage grows 6-7 months a year, how can cows graze for 8-9 months? Stockpiling has allowed many to do just that.

Stockpiled forage is forage that is allow to grow for use at a later time. Extending the grazing season or reducing machine harvest of hay ground by using stockpiled forage has proved to be an economical way to feed dairy, beef and other livestock—even if only for another 3-6 weeks.

***Most Common Stockpiling Practices*** are those that allow forage to accumulate during the last 70 or so days of the growing season just prior to frost dates. The forage that grows during this autumn period is leafy and high in nutritive value. In NE Iowa, this means the forage is cut or harvested around August 1 and the forage allowed to accumulate until frost dates.

Stockpiling research in southern Iowa and southwest Wisconsin shows that about one ton of dry matter per acre can be stockpiled over a 70 day period. Longer periods of stockpiling resulted in better forage yields, but forage digestibility and protein were greatly reduced.

*Dairy Cows and Heifers grazing stockpiled forages to extend grazing or assist summer slump.*

***Strip Grazing*** extends forage quality more than continuous grazing. If given unrestricted access to a pasture or hayfield, livestock will selectively graze plant parts highest in digestibility and protein concentration first and greatly reduce forage uniformity over time. To increase uniformity of forage nutritive quality, erect temporary electric fencing which allow strip grazing.

***Stockpiled hay stands or other crops*** can work for extending the grazing season as many alfalfa stands are grazed in latter crops around the country. Grazing-type alfalfa varieties are typically better able to withstand the hoof traffic. Other crops such as oats or winter rye after an early corn silage harvest have also been used along with other crop residues (i.e. corn stalks). The winter rye can also provide spring forage for haying or grazing.

Some grass species stockpile better than others. For instance, tall timothy, smooth brome and quackgrass are most suitable for fall grazing. Late maturing orchardgrass is best used by December. Tall fescue, early maturing orchardgrass and reed canarygrass are best for late-winter grazing. Yields in a Wisconsin study showed Tall fescue and orchardgrass stockpiling the highest yields while smooth brome and quackgrass stockpile were the lowest. Other species such as reed canarygrass and timothy yielded in between.

***Fertilization of Stockpiled Forage*** depends on legume content but can be a valuable for forages that are primarily grass or have a moderate mixture of legumes. Applying 40-50 lbs of nitrogen in early August can boost the forage dry matter 50% or one-half ton.

***Extending the Forage Season can have disadvantages as well.*** Untimely rain, sleet or snow can lead to forage losses or reduction in nutritional value of stockpiled forages. Yields are typically able to be harvested in the October to December time frame. However, if stockpiled forage is to be used in the January to March time frame, yields tend to be reduced by half. The physical effect of snow on grazing stockpiled forages may not be as great as might be expected. While snow will restrict access to forage, cows are willing to graze through up to 9" of snow. On the other hand, as little as ¼ inch of ice on top of snow may totally halt grazing.

It is important to be flexible and be able to manage through adverse weather periods. Grazing on frozen soil causes minimal pasture damage, but when soil conditions are muddy it can lead to soil compaction and long-term damage to pasture or alfalfa sod.

Stockpiled areas should be carefully considered as to accessibility to supplemental feeding, water and livestock handling. On farms where corn crop residues are available for gleaning, weathering losses and nutritional considerations indicate corn-crop residue fields should be grazed first, followed by stockpiled forage. A sound supplemental feeding program is needed to meet the nutritional needs of various livestock classes eating stockpiled forages without excessive costs. Thoughtful planning of stockpiling forages can be an economical part of a livestock enterprise.

Fact Sheet produced by Larry Tranel, ISU Field Specialist, Dairy Beef and Forages. Adapted from work of Dr. Stephen Barnhart, ISU Agronomist.

## *Meeting the Needs of Farm Families*

The traditional farm family has undergone numerous changes in recent decades and some of those changes have been stressful. Because of this individual and family strengths are becoming increasingly important.

Youth development research emphasizes the importance of meeting four basic human needs for family members – ***Belonging, Mastery, Independence, and Generosity***. Family members who have these four needs met can better withstand stressors throughout the family life cycle and be able to bounce back following a period of difficult time.

The Need to ***Belong*** ---All family members need to know they are cared about by others and feel a sense of connection to others in their family. To build a sense of ***Belonging*** in your family:

- Create opportunities for family members to interact with each other during mealtime, chores, games, etc.
- Develop and maintain family traditions and rituals like always celebrating birthdays in a special way or holidays, packing a picnic lunch and going for a family drive once a month, playing a game as a family once a week, etc.
- Encourage family members by asking them to share their accomplishments.
- Eat a meal together as a family at least once a day and involve family members in mealtime tasks.

The Need to ***Master***----Youth need to feel and believe they are capable and experience success at solving problems and meeting challenges to develop their self-confidence. To build a sense of ***Mastery*** in your family:

- Spend time working alone on a project or chores with each child at least once a week.
- Provide stimulating learning experiences at home or in your community.
- Model and teach that failure or frustration is not a disgrace but a part of the learning experience.
- Be fair and consistent when setting and enforcing family rules.

The Need to be ***Independent-***----Youth need to know they are able to influence people and events through decision-making and action. By exercising independence, youth mature in self-discipline and responsibility, and learn to better understand themselves. To build ***Independence*** in your family:

- Give youth opportunity to lead simple tasks and then progress to more difficult ones.
- Recognize, teach and support family members who are ready for more responsibility.
- Avoid jumping in to help unless you are really needed, encourage young family members to overcome obstacles on their own.
- Encourage, motivate and praise youth who have successfully taken on additional responsibilities and shown leadership.

The Need to be ***Generous*** ----Youth need to feel their lives have meaning and purpose. By exploring community service and citizenship activities, family members can connect to communities and learn to give back to others. To build ***Generosity*** in your family:

- Be flexible and open to family members' ideas of service projects.
- Have family members adopt a specific service project that fits everyone's interests and abilities and meets a community need.
- Encourage family members to consider the feelings of others.
- Set up mentoring opportunities where younger family members can learn from older family members.

Families will always have challenges to face. Helping family members meet the four basic needs of ***Belonging, Mastery, Independence and Generosity*** can minimize the stress these challenges can create. All families have strengths. By working together, family members can build and maintain close relationships that can help them face times of stress.

Authored by: Brenda Ranum, Youth and 4-H Field Specialist,
Iowa State University Extension, August, 2000.

***An Amish Lesson: Quality of Life for Families Begins at the Dinner Table!***

## *Producer Profile:*

## *Rick and Jayne Reuter*

began dairying in 1975 with his father on an 80 cow operation and maintained a 70-80 cow registered herd up to 1997. The Reuters' then built a 240 cow freestall barn and a double 8 herringbone parlor with take-offs.

The cows maintain a 24,000 plus rolling herd average on 50 lbs of corn silage, 12 lbs of hay, 6 lbs of cottonseed, 12 lbs or dry corn and 12 pounds of protein, fat, mineral and vitamin supplement 365 days a year. Dry matter intake, fresh feed, fresh water and fresh air are noticeably important walking into the Reuter's freestall barn. "If I don't like working in there the cow doesn't either," say Rick. "The cow needs a good working environment to produce milk as much or more than we do because if it doesn't feel good to them, it affects production."

The Reuters farm 260 acres, 200 of which are corn silage, the balance alfalfa and buy all their grains and additional hay needs.

Rick and Jayne have remodeled an old stall barn for transition cows by turning the tie stalls into freestalls, adding mattresses and then sand on top. "The dry cows seem to adjust much better with the sand rather than the sawdust as evidenced by fewer mastitis problems at dry-off and just prior to freshening," remarks Rick. Transition cows is an area the Reuter's would like to improve on as just about every farm finds difficulty with transition cows.

Rick and Jayne's children, Dan, Sarah and Tricia fill in on the farm for an additional labor resource.

## *Big Bale Barn Busters*

Big bales are heavier than most people think. During 1999, a fellow Wisconsin Extension Agent received three calls in less than a week from producers who had either broken through the barn floor or had broken beams under the floor while stacking big square bales.

A typical big bale weighs about 850 pounds with a density of approximately 14 pounds per cubic foot. Small square bales, on the other hand, weigh about 40-50 pounds with a density of about 7 pounds per cubic foot.

So, why are big bales barn busters? With a density about double that of small bales, luck is being pushed if big square bales are being stacked more than half the height of the comfort level for stacking small square bales.

## *Dairy Reproduction Benchmark Goals*

Complete and accurate herd records should provide the tools necessary to define past herd performance, assist in establishing goals for the benchmarks being evaluated, and allow monitoring to determine the impact of the plan developed to reach the goals.

Eight benchmarks and levels where intervention is recommended are shown in the table below. These goals must be applied with caution and may not be appropriate for intervention on an individual cow basis. It is also important to be practical and reasonable in applying these goals especially in cases where vast improvement in present performance is recommended.

| **Parameter** | **Goal** | **Intervention** |
|---|---|---|
| Days Open | 115 | 160 |
| Calving Interval, months | 13 | 14.5 |
| Days to 1st Service | 75 | 100 |
| Conception Rate, 1st service, | 55% | 30% |
| Conception Rate, all services | 50% | 30% |
| Heat Detection Rate | 70% | 40% |
| Reproduction Culls per lactation | <8% | 15% |
| Abortions | <5% | 10% |

It has long been known that there is an important economic advantage to be gained by efficient reproduction. The ability to use records effectively is a cornerstone of reproductive success.

*Adapted from Dairy Pipeline*

## *CHANGES FOR AUG 2000 GENETIC EVALUATION*

1) **Genetic base will be updated for all breeds.** The US dairy industry continues to make tremendous strides in genetic progress. This progress translates into more profitable dairy cows for producers. Also, this progress means that PTAs are larger and larger for successive generations of both cows and bulls. For example using the current base, the average PTA for Milk (PTAm) for cows born in 1990 is zero; for cows born in 1997, this figure is 1837 lb. To keep PTA values within a reasonable range of values, the USDA updates genetic base or the zero point for genetic evaluations every five years.

The new base used for the August 2000 will define the zero point for genetic base as the average PTAs for all cows born in 1995 (instead of 1990 - the current base). This shift will mean an equal drop within each breed in PTAs for all cows and bulls. Drops for breeds will range from 367-668 lb. PTAm, 12-22 lb. PTA Fat, 11-21 lb. PTA Protein, and .3-.9 PTA Productive Life. For PTA Somatic Cell Score, the change for breeds includes the average change in genetics and environment and ranges from an increase of .14 to a drop of .22. Overall, these drops to our new genetic base for PTAs indicate that the breeds are making genetic progress for yield traits, productive life, and to some extent, towards lowering SCS.

2**) PTA Protein (PTAp) will reflect True Protein instead of Crude Protein.** The dairy industry in the US has been slowly transitioning to using True Protein in place of Crude Protein when producers are paid for milk protein. Thus, USDA wants genetic evaluations to be based on what producers are paid for, and so will begin reporting PTAp as values for True Protein. True Protein is a measure of the true protein content in milk. To contrast, Crude Protein measures all nitrogen in milk – most nitrogen in milk is a component of protein, however a small fraction of milk nitrogen is not bound in protein such as milk urea nitrogen. Non-protein nitrogen has no nutritional value to people. The PTAs for protein % are exactly the same when True and Crude Protein are used. However, values for PTAp pounds will move closer to zero for all cows and bulls of all breeds.

3) **The genetic selection indexes Net Merit Dollars (NM$), Fluid Milk Dollars (FM$), and Cheese Merit Dollars (CM$) have been revised and updated.** These three indexes rank cows and bulls based on their superiority for total profitability in a commercial dairy herd. The NEW formulas account for genetic estimates of income and cost factors that contribute to Lifetime Profit (Lifetime Profit = milk income + income from salvage value + income based on value of calves - rearing costs – feed energy costs - feed protein costs - health costs - breeding costs). Traits included in predicting new NM$, FM$, and CM$ include milk, protein, fat, productive life, somatic cell score, udder traits, foot and leg traits, body size traits. For genetic selection of bulls, cows, and heifers, producers should select the appropriate index based on how they are paid for their milk. The NM$ index is appropriate for most producers in the Upper Midwest who are paid on a multiple component pricing system. Producers who are paid on a true cheese yield formula, and so are penalized for the carrier or water portion of milk should use the CM$ index. The FM$ index is appropriate for producers who receive essentially no premium for milk protein.

4) **PTA for Productive Life (PTApl) has been updated for all breeds to include information from more traits.** New PTApl includes information for milk, protein, fat, somatic cell score, udder composite, foot and leg composite (for protein breeds, foot angle was used), and body size composite. PTApl is a measure of genetic transmitting ability for length of productive life measured in months. Cows and bulls that have larger values of PTApl are genetically superior for this trait and are expected to produce progeny that remain in the herd and productive for longer than those with lower PTApl.

5) **Genetic base will be updated for type traits of Ayrshire, Brown Swiss, Guernsey, Jersey, and Milking Shorthorn.** Most of these type traits will see a drop in PTAs for all cows and bulls; however, for some breeds a few traits will see increases in PTAs due to this base change.

***WHAT WILL NOT CHANGE FOR THE AUGUST 2000 GENETIC EVALUATION**

1) **USDA will NOT implement phase 1 of the USDA test-day model.** Earlier, USDA had planned to use a new and more precise method for Genetic Evaluations called the USDA test-day model in the year 2000. Since USDA's initial announcement, the Cornell University Research Foundation has informed USDA that the USDA use would infringe on the Foundation's patent rights. Several other countries such as Canada already use a test-day model for their genetic evaluations. I sincerely hope that US dairy producers and breeders are NOT put at a worldwide disadvantage as a result of the patent dispute that is alleged by the Cornell Research Foundation.

2) **Heritabilities used to compute Brown Swiss and Jersey evaluations will not be changed for the August 2000 evaluation.** The USDA wants to study further the outcome of this impending change on the Interbull international evaluations. The new projection for updating heritabilities used for these breeds is the November 2000 evaluation.

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# *Understanding Milk Price Basis for Contracting*

Until just a few years ago dairy producers had no need or ability to manage price risk. During the early 1990's university and futures exchange representatives worked on developing and refining tools that the dairy industry could use to reduce price risk. The most successful tool to date has been the Basic Formula Price (BFP) cash settlement contract. Dairy producers need to understand the concept of basis to use the BFP contract as well as options and forward contracts that resulted from the futures contracts

**Definition of Basis**

Basis is the difference between a cash price at a specific location and the price of a complementary futures contract. Basis for raw milk is the difference between a dairy producer's "mailbox price" and the BFP futures contract.

Each dairy producer must calculate their own basis. Milk basis is individualized due to the differences in quality and volume discounts or premiums received by each milk producer.

**Use of Basis**

Basis calculation has at least three uses for dairy producers. These include: analyzing a forward cash price, analyzing the possible outcome of a hedge and calculation of a target options strike price.

Several dairy plants operating in Iowa offer dairy producers forward milk price contracts, monthly, yearly and three years milk production. Knowing your monthly milk basis allows you to determine if the forward price offered in a contract will be profitable or as good as the outcome of a hedge. To do this, add the basis calculated to the cash price being offered. Compare the result to your cost of production and/or the outcome of a hedge. The cash price should be a little less, 5-7 cents per hundredweight, than if you were to place a hedge. The lower price is due to the costs a dairy plant will have in offering a cash contract.

Basis is also necessary to calculate the strike price that a dairy producer may want to use for an options purchase. A dairy producer will first set a price goal. Subtract the expected basis from this price goal. The result is a price that can be used as the strike price at which a dairy producer may purchase an option.

Lastly, basis will help predict the cash outcome of milk hedging. By adding the expected basis to a hedge price, a dairy producer can estimate the cash price that will be received.

A term "basis risk" needs to be explained here. Basis risk refers to the possibility that the real basis isn't equal to the predicted basis, it may be more or less. The cash price earned will vary by the change in basis. You can get a sense of basis risk by looking at the variability of monthly basis over a three year period. Basis may vary as much as $3 per hundredweight during the same month in different years. A higher than expected basis will yield a higher than expected cash outcome while the opposite is true as well.

**Calculating Milk Basis**

Basis calculation should be made for each month of the past three years. This recommendation is made due to the variability of basis from year to year. As mentioned earlier basis may vary by $3 per hundredweight. An average of three years basis calculations for each month will reduce the possibility that the basis used will vary from the basis that actually takes place.

Table 1 is an example of the calculation of milk price basis. A worksheet that dairy farm mangers can use to easily calculate and save their basis is available. Use a separate sheet for each year. A separate paper, 'Dairy Base Prices' is also available which provides the historical price necessary to calculate basis.

Iowa milk is used for both manufacturing dairy products and fluid milk (Class I). Iowa's average utilization of milk for bottling during the past has been approximately 34%. This utilization number is important in calculating basis.

Table 1. Calculating YOUR Basis

| | |
|---|---|
| Your Mailbox Price | $10.45 |
| Class III Price | $9.54 |
| Your Basis | $0.91 |

Thus, your basis is the relationship between YOUR monthly mailbox price and the announced Class III price. Different federal marketing orders have different basis. Each producer needs to monitor and know historical basis for their farm in order to use futures and options effectively in managing price risk.

By Robert Tigner, Farm Management Specialist, ISU Extension

## *Calving Your Beef Cows Outside the Box*

Beef cow/calf producers in the Midwest are quite traditional in their fondness for late-winter calving and selling feeder calves off pasture come fall. That tradition can be questioned as to whether that is the best practice for a particular farm, according to Ben Bartlett, a Michigan State University Livestock Agent.

Winter feeding is the crux of the beef cow business. However, the midwest also has advantages of being able to grow lower cost forages, access to low cost grain and energy alternatives along with a variety of marketing alternatives.

Thinking "outside the box" to design a cow-calf operation for the purpose of making money is to realize our winter feed and part-time labor with our strength of quality feed. How can a system be designed to minimize the negative and accentuate the positive? One option may be to calve in late May or early June.

By calving later, one can minimize the amount of stored feeds that are needed to maintain the cow. Calving in warmer weather can also lead to fewer calf losses and less labor. Later calving cow can spend more time scavenging for winter feed on corn stalks and stockpiled pasture as a lactating cow has almost double the needs of a dry cow in mid-gestation.

Moreover, later calving is also matched up nutritionally with early pasture which is ideal for meeting the needs of cows in late-gestation. The decrease in labor requirements and calf death loss from later calving are due to reduced stress and less frequent checking. Nebreska research has shown reduced calf birth weights for less calving difficulties.

Cows also have a quicker return to estrus as days lengthen. A cow calving in January at a body score of 6 requires 84 days to return to estrus versus returning to estrus in 31 days if calving in June. This could increase opportunities for the cow to become pregnant and stay in the herd.

The downside to pushing calving into late spring is the smaller calf to sell. But, who says one needs to sell the calf in the fall? Using the strength of high quality forage and access to grains may be an opportunity to winter this lighter weight calf in a cost-effective way. Then, one would have a 700 pound yearling to go to spring pasture to assist with the spring pasture growth and then market or finish at 800-850 pounds in July—not a traditional marketing period but feedlots are often looking for cattle to put on feed at this time. So, in reality, a late-calving producer has a six month window to manage when to market best suited to cash flow needs, feed inventories and labor availability.

Wintering those calves is not without the concerns of weaning, sickness and housing. Demonstrated research in Alberta, Canada on fence-line weaned right on pasture gained almost two pounds per day. The University of Missouri has fence-lined weaned for 12 years on 2,400 calves. Leaving calves to wean on good fall pasture can result in lower stress to the calves and producer.

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