

AGRICULTURAL NEWS

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Corn Maturity and Grain or Silage

Bill Cox

Department of Crop and Soil Sciences, Cornell

It looked like we had dodged a huge bullet when June opened up for us and we could plant corn and soybeans from June 1-June 15th, almost on a daily basis. Even better, it stayed warm throughout June and things weren't looking too bad by July 4th, given the wettest or 2nd wettest April-May period ever. Unfortunately, for most of us, July turned exceedingly dry (2nd driest ever at Aurora) and hot so the early-planted corn (May 9-12th window) was pollinating during the week from hell (literally July 17-23) and the late planted corn (June 1-10) was reduced greatly in stature.

So where are we now? Well, August has been somewhat cooler than July but it still is about a degree warmer than normal so far. Even better, it has been somewhat wet (especially after today). So this is what I would do if I was wondering which fields to harvest for silage or grain that was planted in May or June.

The May 9-12th planted corn has reasonable stature but small ears with very poor tip-fill (but I am amazed that we had as good a pollination that we did, given the physical appearance of the corn). **I would harvest the May 9-12 planted corn as silage** because we only lost maybe 5% in stover yield and 35% in grain yield for a total silage yield loss of 40%. So our corn silage plots at Aurora (our 86-95 day material was very well-dented with moistures probably 68% on Friday, August 19th) are weighing about 40% less than normal.

The June-planted corn was in the silking stage about August 1 (we have 98 and 99-day hybrids at four seeding rates on farms in Cayuga, Seneca, Livingston, and Orleans counties planted on 5/29, 6/1, 6/2, and 6/6, respectively, and both hybrids were silking from July 31-August 2 at all sites). A 100-day hybrid usually requires about 1100 GDD in NY from silking to black layer formation when planted in early May, but probably about 1050 GDD if planted in early June (with delayed planting, corn development is accelerated so it usually silks about 50 GDD earlier than normal and finishes up about 100 GDD earlier than normal). The June-planted corn is really short but it pollinated well and should fill-out well. I would estimate only a 25% hit on grain yield for June-planted corn. I would also estimate probably a 30% hit on stover yield for June-planted corn because of the very short-stature of the crop for a 55% hit on silage yield. **So I would harvest the June-planted corn for grain, if it makes it!**

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Cornell Cooperative Extension

Steuben County

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Coming Events

September 18-20 - New York State Maple Tour. Lewis-Jefferson Counties, Contact: Michele Ledoux, Cornell Cooperative Extension Lewis County, 5274 Outer Stowe Street, P.O. Box 72, Lowville, New York 13367, Phone: 315-376-5270.

September 24 – Farm-City Day. Situated among the rolling hills which surround the Canisteo Valley sits the Moss-Van Wie Dairy Farm, site of the 2011 Steuben County Farm-City Day. Cliff and Debbie Moss, along with Gerald and Jean Van Wie will be on hand to welcome you to their Dairy of Distinction farm just outside Canisteo.

The Moss-Van Wie Dairy Farm originated in 1932 when Gerald Van Wie and his father Bert purchased 32 acres of land and milked 12 cows by hand. Cliff and Debbie moved to the farm in 1988 and formed a partnership with Gerald. In 2009, Cliff and Debbie purchased the farm from the Van Wie's. Today, they are milking 120 cows and have 100 calves and heifers. They have over 300 acres of corn, 120 acres of soybeans and 80 acres of hay. The Van Wie's along with Cliff and Debbie invite you to join them September 24th as we celebrate Steuben County's number one industry....agriculture!

For more information visit the FCD webpage at www.steubencountyfarmland.com or check out their FB page for the latest updates.

November 7,8 – Northeast Silvopasture Conference, Watkins Glen Harbor Hotel, 16 N. Franklin Street, Watkins Glen, NY. Gain a greater understanding of silvopasturing and its applications in the Northeastern US. For more information contact Brett Chedzoy at 607-742-3657 or by e-mail at bjc226@cornell.edu. To register for the conference visit <http://nesilvopasture.eventbrite.com>.

continued from cover:

Will it make it? So, a 100-day hybrid will require about 1050 GDD, a 95-day hybrid about 1000, and a 90 day hybrid about 950 GDD, **if planted in June.** Table 1 shows the accumulated GDD from August 1-21, August 5-21, and August 21-September 30 at different sites in NY. I have also listed the total number of GDD from August 1 or from August 5th until September 30 at these sites, if we receive normal GDD from August 21-September 30. I am also assuming no killing frost at these sites until October 1 but who knows what will happen!

Based on the data, **I would predict that 95-100 day hybrids that were in the silking stage by August 1 will make it to black-layer formation at the listed locations west of I-81 (the first 6 sites listed in Table 1). At the**

remaining sites east of I-81 (bottom 5 sites in Table 1), 85-90 day hybrids should make it. For hybrids that did not attain the silking stage until August 5th, 90-95 day hybrids have a good shot at making black layer formation at sites west of I-81, but hybrids would have to be 80-85 day in length to make it at the listed sites east of I-81, provided we have normal GDD from here on out and no killing frost before October 1.

So there is hope for hybrids that attained the silking stage by August 1- 5th to make black-layer formations as long as the correct hybrid maturity was planted. I would be less bullish for any hybrids that were in the silking stage after August 5th.

Table 1. Approximate growing degree days from 8/1-8/21/2011, 8/5-8/21/2011, the 30-year average from 8/21-9/30 (1981-2010), and total number of GDD from 8/1-9/30 and 8/5-9/30, assuming normal GDD for the remainder of the growing season, at different sites in NY.

SITE	8/1-8/21/2011	8/5-8/21/11	8/21-9/30	8/1-9/30	8/5-9/30
	AVG.				
	GDD				
Dansville	465	365	620	1085	985
Batavia	455	365	620	1075	985
Canandaigua	465	370	615	1080	985
Geneva	455	350	600	1055	950
Auburn	450	345	600	1050	945
Aurora	450	345	600	1050	945
Watertown	415	330	535	950	865
Malone	380	310	530	910	840
Rome	415	330	530	945	860
Cooperstown	370	285	530	900	815
Glens Falls	400	320	535	935	855

Harvesting Immature Corn for Silage

Mike Allen, Department of Animal Science at Michigan State University
(Edited by Jim Grace)

Much of the corn harvested for silage in the region this year may be immature at harvest because of delayed planting due to the wet spring when many farmers were unable to get into the fields. Although silage from immature corn can be excellent forage, certain factors related to harvesting and feeding should be considered.

When to harvest

Immature corn is considerably wetter than normal and seepage from the silo will be extensive if harvested too wet. In addition, very wet corn silage may reduce dry matter intake if it is included in the diet at high levels. Moisture content should be less than 72 percent when stored in bunker silos and less than 65 percent when stored in upright silos. This is likely to require harvesting after a frost, particularly for corn planted in late June or early July. The best way to determine when to harvest is to harvest a representative sample of each field (not border rows) and determine the moisture content using a microwave or forced air drier. Do not decide when to harvest by just looking at the corn; leaves dry quickly and turn brown following a frost and the corn appears to be drier than it really is. Leaves are a small fraction (less than 15 percent) of the entire plant and the plant may still be too wet when the leaves are brown and dry.

Silage additives

Immature corn should ensile well if harvested at the appropriate moisture content. There will be a more than adequate supply of sugars for the microbes to ferment because less sugar has been translocated to the ear and converted to starch. Inoculants shouldn't be necessary if the corn is harvested during warm weather, but should be considered for corn forage harvested during cool weather late in the season. If the daily high temperature is less than 55 degrees to 60 degrees Fahrenheit for several days prior to harvest, inoculants should be considered because the naturally occurring microbes which are desirable may be low in number.

Length of cut

Chopping coarsely will increase the effectiveness of fiber at stimulating chewing and salivary buffer flow into the rumen. Immature corn forage can be chopped more coarsely than mature corn for silage because the ears are much less developed and kernels, if present, are soft and do not need to be ruptured during harvest to be digested. Cob disks will also be less of a problem with immature ears.

Feeding value

The feeding value of silage from immature corn depends partly on the degree of maturity at harvest. In general it will have higher fiber, slightly higher protein, and slightly lower energy content than normal corn silage. The fiber content may exceed 55 percent Non-Digestible Fiber (NDF) for very immature corn silage or for wet corn silage that has had extensive seepage. Digestibility might be 10 percent to 15 percent lower for very immature corn silage because of the higher fiber content; and diets based on these forages must be adjusted with higher concentrate levels.

Silage from corn that is only slightly immature may have fiber levels that are close to normal even though the grain content may be considerably lower. This is because grain filling occurs by translocating sugars from the stover and the total sugar plus starch content of the plant may change little during grain



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filling. Slightly immature corn silage has similar or even higher digestibility than mature corn silage. This is because digestibility of starch and fiber decreases as the corn plant matures. Although the grain content increases, the grain becomes harder and more kernels pass through the cow undigested. The non-structural carbohydrates of immature corn are highly digestible sugars and starch. The digestibility of fiber decreases as the corn plant matures giving an advantage to immature silage. Although silage from immature corn may require more grain in the diet than normal, if it is harvested at the appropriate moisture content, it might improve milk production because of higher starch and fiber digestibility.

Placing a Value on Immature Corn Silage

Jim Grace

Extension Educator

What's the value of 2011 corn for silage? Pricing this year's crop will offer some challenges given the fact that stands were thinned by May rains and many fields were planted late. One thing is certain: pricing standing corn silage by the acre is likely going to result in either the buyer or seller getting a bad deal. Most producers like a pricing structure that is simple, yet has some scientific basis. Perhaps the method that best fits the criteria is to value normal corn silage and then discount immature corn silage accordingly based on reduced feed quality.

The question is what is normal corn silage worth this year? The table below has a price of standing corn at \$48.85 per ton for standing corn and \$67.22 out of the silo. These prices are what are needed to bring in the same net income as if the crop was sold for grain. Immature corn is worthless. Table two below gives a value to immature corn silage for livestock, based on the above prices.

Table 1* Normal Corn Silage Price

bu grain / ton silage(15.5% moisture)	7
corn silage yield - tons/ac (65% moisture)	20
grain price per bushel (fall harvest price)	7.00
Total harvesting costs	63.20
percent moisture "normal" grain corn	22
value /acre minus grain harvesting, drying, & storage costs	787.00
value P&K removed in stover (@ \$9.50/ton silage)	190
Value Standing Corn	
per acre	977.00
per ton	48.85
Per lb of dry matter	0.070
Value In Silo	
plus silo filling @ 9.60 per ton**	192
value shrink and storage loss	8.77
value out of the silo	67.22
per lb of dry matter	0.096

*The complete version of the spreadsheet is available at: <http://www.putknowledgetowork.com/>

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Based on Wisconsin research that encompassed multiple years, harvest dates, and hybrids, the following are reasonable discounts:

Table 2* Immature Corn Silage Value

Description	Value as a % of Normal Corn Silage	Standing corn \$/ton	Out of the silo \$/ton
Silk	75	36.64	50.415
Milk	85	41.52	57.137
Dough	90	43.97	60.498
Dent (50% Milk)	100	48.85	67.22

*University of Wisconsin Cooperative Extension

If the dry matter varies from 35% an adjustment should to be made to the price to be fair to both seller and buyer.

Haste Makes Waste

Ev Thomas

Miner Institute

I travelled across Northern NY several times in August and saw a lot of corn that will need warm weather and no killing frost in September to make quality silage. Since then it's been pretty darned hot, so instead of the "silk to silage in six to seven weeks" guideline, a lot of corn might make this much progress in five weeks. Holding off on harvest is often a

gamble: Wait until the crop matures as much as possible and risk fall rains turning corn fields into mud, or get it while the getting's good even if it's immature. Many farmers across the Northern U.S. really need a good corn crop because first cut forage quality was terrible. This may make it worth taking some added fall weather risk. Until a frost completely kills the plant, every day corn sits in the field it's putting on more grain, and with grain prices as high as they are—and will almost certainly remain high for the indefinite future—high quality corn silage will be a very valuable commodity.

Two points to consider: *First*, you should be able to wait longer on tilled or well-drained fields than on fields that could turn into mires with the first big fall rain. Of course, it's these latter fields that were probably planted last and therefore need more time to mature! *Second*, waiting for a killing frost before beginning harvest is a bad idea if it takes several weeks to harvest your corn. Once the plant is fully dead it doesn't take long—sometimes only a week—before ear molds begin to develop. Therefore I wouldn't recommend intentionally letting any more corn get frosted than you can harvest in a week or less.

Some farmers intentionally let late planted, immature corn get hit by a frost or two, in an effort to dry the crop and thereby reduce silage effluent. However, the leaves of a corn plant die first, and leaves are only 10-12% of the total dry matter content of the plant. Most of the yield is in the ear and the bottom half of the

stalk, both which are much less susceptible to a moderate frost. We often see frosted corn going into the silo at much higher moisture contents than the farmer expected. This goes for drought-affected corn, too. Do dry matter tests on these fields *before commencing harvest* so you know the situation instead of just guessing. Knowledge is power!

Editor's Note: If you run out of time and some fields are still too wet to chop and store try to find some drier corn to mix it with from another field.

Harvesting Drought Affected Corn for Silage

Ev Thomas
Miner Institute

Corn with yields reduced by drought will be lower in energy and often higher in protein, but it also may be higher in nitrates. "The book" says that if you ensile high-nitrate corn you'll reduce nitrate concentration by about one-third, suggesting that it could still be a problem. Perhaps, but I've been in this business for 45 years and when I find a sample of fully fermented corn silage with a high nitrate concentration *it will be my first*. Same with problems in feeding high nitrate silage, but this is perhaps because most dairy farmers feed several forages in their rations, thus diluting the rare high nitrate silage. Heavily manured corn fields affected by drought would be the best case for high nitrates.

In tower silos "silo gas" can be a serious health problem for the first month or so after ensiling. Stay out of these silos for at least a month, and even after one month run the blower for a few minutes before entering the silo. Having been involved in the investigation of a death due to silo gas in an upright silo (just up the road from Miner Institute in Champlain, NY), I take this issue very seriously. The person climbed down into the silo of corn silage and succumbed before anyone even knew there was a problem.

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Some agronomists recommend leaving at least a foot of stalk in the field since nitrates concentrate in the bottom of the stalk. However, many farmers already leave almost a foot of stalk in the field and want to harvest as much as possible of what is already a low-yielding crop. If this is the case be sure to follow the silo safety precautions stated in the previous paragraph. Between late planting and drought, high-chopping some of the corn I've seen might result in the head passing completely over the nubbin ear, resulting in a silage that I've somewhat infamously referred to as "tasselage".

Editor's Note: Problems with high nitrate levels in drought stressed corn are more likely if the crop is chopped within 3-days following a ground soaking rain.

Triticale Grain in Swine Diets

R.O. Myer and R.D. Barnett

University of Florida

Triticale is a grain developed by crossing durum wheat with rye in order to combine the grain quality, productivity, and disease resistance of wheat with the vigor, hardiness, and high lysine content of rye. Triticale is higher in protein and essential amino acids than corn, with 50% higher lysine content (Table 1).

Table 1. Comparative nutrient composition of triticale, corn, and wheat (as-fed basis).

Nutrient	Triticale ^a	Corn	Wheat ^b
Crude protein, %	12.5	8.3	11.5
Lysine, %	.39	.26	.30
Crude fiber, %	2.8	2.5	2.4
Crude fat, %	1.8	3.9	1.9
Calcium, %	.05	.03	.04
Phosphorus, %	.33	.28	.39
ME, kcal/lb ^c	1450 ^d	1550	1500

^aTriticale grown in the Southeast.
^bSoft red winter wheat.
^cME = metabolizable energy.
^dEstimated.

Lysine content is important because swine, like most simple-stomached (nonruminant) animals, do not require protein *per se*, but instead require specific levels of certain compounds that make up protein. These compounds are called amino acids. Some of these amino acids, termed "essential amino acids," must be present in the diet for pigs to grow and perform well. A few essential amino acids tend to be limiting in typical swine diets. One essential amino acid, lysine, is usually the most-limiting (or first-limiting) amino acid. This term means that if a diet is formulated to supply the correct amount of lysine, then generally the levels of other essential amino acids will be adequate. Therefore, lysine content is an important consideration when comparing grains.

Although appearance might suggest triticale to be high in fiber, its crude fiber content is actually similar to that of wheat or corn. (Phosphorus, crude fat, and energy concentrations are similar to those of wheat.) Triticale kernels are usually larger than wheat kernels, but not as dense. The test weight of triticale is 48 lb/bu, compared to 60 lb/bu for wheat.

Results of feeding experiments indicate that pigs fed triticale-based diets had rates of gain and feed efficiencies similar to those of pigs fed corn-based diets. This research also indicates that triticale can satisfactorily replace part of the soybean meal (up to 100 lb of 44% soymeal per ton of mixed diet) and all of the corn in adequately fortified corn-soybean meal diets for swine.

Use of Triticale in Swine Diets

Triticale contains more protein than corn, but diets must be formulated to meet essential amino acid requirements (especially lysine) rather than the crude protein requirement of the pig. When both diets contain equal levels of lysine, the crude protein content of a triticale-based diet is usually higher than that of a comparable corn-based diet. If diets containing triticale are formulated to meet crude protein requirements *only*, lysine levels will be inadequate to support maximum performance.

	Starter (20 to 50 lb)	Grower (50 to 125 lb)	Finisher (125 lb to market)
Ingredient, lb/ton			
Ground triticale	1485	1655	1800
Soybean meal (44%) ^a	450	300	160
Base mix: ^b			
Dicalcium phosphate ^c	25	15	12.5
Limestone, ground	20	20	17.5
Salt	10	5	5
Vitamin-trace mineral premix ^d	10	5	5
Total	2000	2000	2000
Calculated composition (as-fed basis):			
Crude protein, %	18.8	16.5	14.4
Lysine, %	.96	.77	.60
Calcium, %	.75	.62	.55
Phosphorus, %	.64	.53	.48
Metabolizable energy, kcal/lb	1420	1435	1450
^a Can replace 10 lb of 44% soybean meal with 9 lb of 48% soybean meal and 1 lb triticale. ^b A complete mineral-vitamin premix, or a complete mineral premix and separate vitamin premix can be substituted for the suggested base mix. Follow manufacturer's guidelines. ^c Defluorinated phosphate or mono-dicalcium phosphate. If available, can be substituted for dicalcium phosphate. If substitution is made, however, diets must be reformulated because these products do not contain the same concentrations of calcium and phosphorus as dicalcium phosphate. ^d Amounts shown are typical for many commercial products. Follow manufacturer's guidelines.			

vitamins that the supplement provides in the diet. Such reduction could lead to inadequate mineral and vitamin levels in the diet, resulting in poor swine performance.

Triticale should be ground or rolled for use in swine diets. A medium grind is preferred. Finely ground triticale is not desirable because it readily absorbs moisture from the air and from the pigs' saliva, which can result in feed spoilage and reduced feed intake.

Relative Value of Triticale

Triticale is worth approximately 4 to 8% more than the purchase price of corn on an equal-weight basis because

Because of triticale's higher lysine content, producers who mix their own diets using a soybean meal-premix can save 100 lb soybean meal (44%) per ton of diet over comparable corn-based diets. Example diets formulated with triticale are given in Table 2. The example diets are also formulated to take advantage of the higher phosphorus concentration in triticale. This saves 5 lb dicalcium phosphate per ton of diet over comparable corn-based diets, which gives further advantage to producers who mix their own diets from "scratch."

Producers using a commercially available complete protein-vitamin-mineral supplement should consider triticale equal to corn and substitute triticale for corn on an equal-weight basis when mixing swine diets. However, decreasing the amount of a complete supplement to take advantage of the higher lysine and protein concentrations in triticale would reduce the essential minerals and

triticale not only replaces all of the corn in a typical swine diet, but also part of the soybean meal (or other protein supplement). For producers who mix their own diets using a complete protein-vitamin-mineral supplement, however, triticale is worth no more than the purchase price of corn on an equal-weight basis. So, when complete supplements are used, triticale should replace corn on a pound-for-pound basis only.

Special Considerations

Care must be exercised in storing triticale. Because it is highly nutritious, stored-grain insects multiply rapidly in it; steps should be taken to protect grain that is to be stored over a long period of time. Also, triticale-based diets may cause self-feeders to "gum-up" a little, in which case proper adjustment and frequent checking may be required. The problem can be minimized by mixing triticale with corn or grain sorghum (however, mixing triticale with wheat will *not* help this problem).

Summary

1. Triticale has been found to be a palatable grain and can be used as either the partial or sole grain source in diets for all classes of swine.
2. Diets containing triticale should be balanced to meet lysine rather than crude protein requirements. (Triticale-soybean meal diets are higher in crude protein than comparable corn-soybean meal diets.)
3. Triticale has higher lysine content than corn, so producers who mix their own diets using a soybean meal-premix program can save 100 lb soybean meal (44%) per ton of mixed diet.
4. Producers who mix their own diets using a complete protein-vitamin-mineral supplement should think of triticale *only* as a replacement for corn, and not as a partial replacement for the complete supplement.
5. Triticale should be ground (medium to coarse) or rolled for use in swine diets.
6. Triticale is worth 4 to 8% more than the price of corn on an equal-weight basis for those producers who can take advantage of triticale's higher lysine content. Otherwise, triticale is worth the same price as corn.

Editor's Note: Triticale is a winter grain that produces a significant straw crop. Producers who target the straw market might do well to give it a try. Plant around September 15th at higher elevations and between then and October 1st at protected lower elevation fields. A typical fertilizer application would be 100 lbs per acre of a 10-20-20 or a 6-24-24. Heavily manured fields should not require any additional fertilizer. Start with a spring nitrogen topdress of about 40 lbs of actual nitrogen per acre, unless the field has a history of manure application and then you might want to drop back to about 25 lbs of nitrogen per acre to reduce your risk of lodging.

Silvopasturing

Brett Chedzoy

Extension Educator

The practice of silvopasturing is causing quite a buzz these days. It was a fairly new concept to me until a year and a half ago, a concept that brings together forestry management and grazing management into one single system of sustainable woodland grazing. It can diversify income by tapping into products of trees, tree products, forage, and livestock. Trees can be introduced to the pasture or pasture introduced to the trees. Management is the key to reduce the likelihood of soil compaction, debarking of trees, and trampling and browsing of regeneration.

In the modern world of invasive plants, high land ownership costs, and other challenges to healthy and sustainable woodlands, it is worth taking another look at livestock grazing as an acceptable and valuable tool for the management of some woodlots. The purposeful and managed grazing of livestock in the woods, known as silvopasturing, differs from woodlot grazing of the past, in that the frequency and intensity of the grazing is controlled to achieve the desired objectives. New fencing systems, a better understanding of animal behavior and the evolution of "management intensive grazing" have enabled us to gain the necessary level of control over livestock to achieve positive impacts from woodland grazing.

Silvopasturing isn't for every woodland owner or every woodlot as it requires a commitment to caring for animals and enclosing portions of the woods with a secure fence to keep your animals in and predators out. Wooded areas on poor growing sites, rough terrain, or with difficult access would obviously have fewer advantages for successful silvopasturing than the converse. But the most important key for success is skilled management of the system. This requires considerable knowledge of both silviculture and grazing. If grazing and silviculture are the "artful application of science", then combining the two systems in certainly a fine art! But this shouldn't

discourage the novice from exploring the potential of silvopasturing on their property, even though results are likely to improve with increased skill and experience.

Cornell Cooperative Extension is looking to assist in providing an educational opportunity to learn more about the art of silvopasturing. A 2-day conference will be November 7 and 8, 2011 at the Watkins Glen Harbor Hotel, 16 North Franklin Street, Watkins Glen, Schuyler County. The goals of the conference are to broaden a collective understanding of silvopasturing and its applications in the Northeastern US across multiple professions and stakeholders, identify opportunities and challenges to its implementation, and develop networks for collaborative research, learning and promotion of silvopasturing activities. It is open to the public, with land use and conservation professionals, foresters, graziers, woodland owners and members of the academic community are especially encouraged to attend.

The multistate list of presenters represents areas of in the East where the practice is in place. Highlights, though not all the speakers include John Hopkins, Consulting Forester from Bloomsburg, PA will discuss restoration and revitalization of an Appalachian farm. Charles Feldrake with USDA Agricultural Research Service's Appalachian Farming Systems Research Center in Beaver, West Virginia, will talk about their applied research there. Mike Jacobson with Penn State University will cover great opportunities and challenges in the Northeast. Three of our speakers are coming from University of Missouri Center for Agroforestry. Dusty Walters, Larry Godsey, and Gene Garrett will at length focus on silvopasture design, implementation and impacts. Doug Wallace is the NRCS Lead Agroforester at the USDA National Agroforestry Center in Lincoln, Nebraska will provide an overview of current resources and assistance available for practitioners and researchers. Brett Chedzoy, CCE, is a forester and practitioner of the silvopasturing. He and his wife, Maria, will host the field tour/discussion portion and conclusion

of the conference. We will see first-hand their system in place. This is by no means a complete overview of the conference!

Every attempt is being made to keep the cost of the conference as reasonable as possible with support coming from National Agroforestry Center, Upper Susquehanna Coalition, Cornell's Department of Natural Resources, Cornell's Small Farms program, as well as others in the works. An agenda and registration for the event can be found online at <http://nesilvopasture.eventbrite.com>. A block of rooms are reserved at the hotel; contact them on the web at www.watkinsglenharborhotel.com or 607-535-6116.

For more information on the event, contact Brett at 607-742-3657 or bjc226@cornell.edu.

Feed Efficiency: Improve Your Profit Margin by Increasing the Milk Made by Every Pound of Dry Matter Fed **Daryl Mulfair and Jud Heinrichs**

Dept. of Dairy and Animal Science, Penn State

Feed efficiency is increasingly important during times of high input and low output costs. Feed efficiency (FE), or dairy efficiency as it is sometimes called, is a simple measure to determine the relative ability of cows to turn feed nutrients into milk. In the simplest terms it is the pounds of milk produced per pound of dry matter consumed. This measure should always be a consideration of dairy diets and becomes increasingly important during times of high input and low output costs. A way to combat decreased profit margins is to increase the milk made from every pound of dry matter fed. An added benefit to increasing cows' feed efficiency is that fewer nutrients will be excreted in manure, so feed efficiency affects both economic and environmental efficiency. This is of considerable importance to dairies struggling with manure application management.

There are two ways to improve feed efficiency, one is to increase milk yield for the same dry matter intake and the other is to decrease dry matter intake and maintain the same milk yield. Most things that increase milk yield will also increase feed efficiency. This is generally true because as the cow produces more milk, the proportion of energy used for maintenance becomes smaller. In other words, the “fixed costs” of the animal are spread out over more pounds of milk, making the animal more cost and energy efficient. Once the fixed costs are achieved, producing additional milk takes less energy and protein. However, a problem arises with these “fixed costs;” they are not exactly fixed. As dry matter intake increases there is a decrease in feed digestibility. So the cow becomes somewhat less efficient at extracting energy from the ration. This decrease in digestibility grows larger as intake increases and becomes a real issue in high producing dairy cows with high intakes. Therefore, it is important to optimize rather than maximize dry matter intake in the cow. However, in many situations, getting more dry matter intake in a producing dairy cow is a good thing to do.

There are several important factors to consider when measuring and calculating feed efficiency.

Use Actual Dry Matter Intake (DMI): Accurate DMI data is vital for accurate estimates of FE. This means weighing not only what was fed but also refusals. DMI can be measured for herds or groups, even for individual cows in tie-stall barns.

Measure DM of Ration Components: It is important to monitor the DM content of the TMR and the forages used in the ration to obtain accurate FE estimates. Fermented forages and TMR should be checked for DM content weekly.

Convert to Energy-Corrected Milk (ECM): It is very common to standardize FE by using ECM yield. This standardization allows for comparison across breeds or dairies that vary substantially in milk composition.

Recommended feed efficiency (FE; lb milk/lb DMI) for various lactation groups and stages of lactation

Group	Days in Milk	FE
One group, all cows	150 to 225	1.4 to 1.6
1st lactation group	< 90	1.5 to 1.7
1st lactation group	> 200	1.2 to 1.4
2nd + lactation group	< 90	1.6 to 1.8
2nd + lactation group	> 200	1.3 to 1.5
Fresh cow group	< 21	1.3 to 1.6
Problem herds/groups	150 to 200	< 1.3

Source: M. Hutjens, University of Illinois

*These recommendations are based on DMI not ECM values.

The following formula should be used to convert to ECM yield:

$$ECM = (12.82 \times \text{fat lbs}) + (7.13 \times \text{protein lbs}) + (0.323 \times \text{milk lbs})$$

To further improve the accuracy of calculating FE, intake could be corrected for energy content much like milk production is. Corrected feed DM to a standard Mcal/lb would increase the accuracy of calculating FE and



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allow for comparisons between rations of different compositions. Or perhaps FE could be calculated as the Mcal of milk produced per Mcal of feed consumed. Determining FE this way would eliminate the variability associated with the energy density of the TMR and forage digestibility. This method would put a greater focus on the cows' ability to produce milk efficiently, rather than FE being a product of the feed. This would be a more effective approach when comparing animals for genetic selection, which may become more common in the future.

Highlights of Calf Research Presented at ADSA Meeting

Coleen Jones

Department of Dairy and Animal Science,
PennState

The 2011 annual meeting of the American Dairy Science Association took place in New Orleans, Louisiana in July. Scientists from around the globe gathered to share their research and learn the latest developments in all aspects of animal science. The following summary provides a few highlights on topics related to calf feeding and management.

Calf Health

Calves entering a commercial heifer raising facility were studied to evaluate the effects of treatment tulathromycin (Draxxin, Pfizer Animal Health) on calf health and growth in the first 8 weeks of life (Stanton et al.). The calves received tulathromycin or a placebo when they arrived at the facility and were housed in groups. Calves that received the placebo were 1.8 times more likely to be treated for scours, 3.7 times more likely to be treated for one-sided ear droop, and 1.7 times more likely to be treated for two-sided ear droop than calves that received tulathromycin on arrival. In addition, the tulathromycin calves gained 0.07 lbs more per day than the placebo calves.

Researchers observed that calves with failure of passive transfer (defined as total protein less than 5.4 mg/dL) gained 0.09 lbs less per day than calves with successful passive transfer. Average daily gain was reduced by

0.22 lbs in calves with respiratory disease and 0.15 lbs in calves with non-specific fever (defined as rectal temperature greater than 103.1 °F, off-feed, listless, dull with normal respiratory rate and no nasal discharge).

Fatty Acid Supplementation

Scientists from the Nurture Research Center (Hill et al.) presented the results of several studies investigating fatty acid supplementation. In one trial, calves were fed milk replacer with or without 1.25% of a blend of butyrate, coconut oil, and flax oil that provides medium chain fatty acids and linolenic acid (NeoTec4, Provimi North America). Calves fed NeoTec4 had greater average daily gain, starter intake, feed efficiency, and hip width change and an improved response to BVD and PI3 vaccination than control calves. In a second trial, calves fed 0.5% NeoTec4 in calf starter before weaning had greater average daily gain and hip width change than control calves or calves fed NeoTec4 plus soy oil. In another trial, the addition of 0.5% NeoTec4 to a grower diet, fed from 8 to 16 weeks of age, improved average daily gain compared to three other diets (control, 0.25% Flaxtech (Virtus Nutrition), or 1.5% soy oil).

In a final study, conducted in cooperation with Michigan State University, calves were fed milk replacer containing 1% NeoTec4. After weaning the same calves were fed a diet with no NeoTec4 for 28 days, and then half the calves were fed NeoTec4 for 28 days. Prewearing average daily gain, feed intake, and feed efficiency were greater in NeoTec4-fed calves than in control calves. In addition, calves fed NeoTec4 had fewer days with scours and improved response to vaccination compared to control calves. No differences were observed between treatments in the first 28 days after weaning, but when NeoTec4 supplementation resumed, calves had better average daily gains and feed efficiency than calves receiving no NeoTec4. These results support previous research that shows that calf diets, which are typically high in linoleic acid from corn and soybeans, can be improved by the addition of linolenic acid. Part of the reason for improved calf performance when

linolenic acid is fed may be due to enhanced immune responses that help to reduce scours and improve weight gain and feed efficiency.

Milk Replacer Feeding Rate

University of Minnesota researchers in collaboration with Milk Products Inc. and Hubbard Feeds (Carlson et al.) studied several strategies to capture some of the growth benefits of higher milk replacer feeding rates without sacrificing starter intake. This group had previously attempted to feed greater amounts of milk replacer during the first 2 weeks of life and found that did not improve calf performance. Therefore, this study evaluated feeding higher rates of milk replacer for 21, 28, or 35 days. All calves were fed a 20% protein, 20% fat milk replacer and 18% crude protein, textured starter. The control treatment was fed 1.25 pounds of milk replacer powder per day through 35 days of age. The other treatments were each fed 1.5 pounds of powder, but the length of feeding was 21 days (ENH-21), 28 days (ENH-28), or 35 days (ENH-35). At 21 and 28 days respectively the ENH-21 and ENH-28 calves began receiving 1.0 pound of powder per day through 35 days of age. At 35 days of age, all calves had their current feeding rate cut in half to facilitate weaning at day 42. Calf body weight at 56 days was 8 pounds greater for ENH-35 and ENH-28 calves than for control calves, and average daily gain tended to be greater for ENH-35 calves compared to control calves (0.2 lbs/d advantage). Hip height change was also 0.5 inch greater in calves fed the ENH-35 or ENH-28 treatments compared to control calves. All calves had similar starter intake, which indicates feed efficiency was improved for calves on ENH-35 and ENH-28. Calf health was not affected by different feeding rates in this study. The authors concluded that conventional milk replacer could be fed at 1.5 pounds per day for 28 to 35 days to improve calf growth and maintain starter intake. Presumably this should result in a smoother transition to a dry feed diet at weaning, but the transition period was not included in this study.

Replacing Corn in Calf Diets

Minnesota researchers (Ziegler et al.) also

presented the results of a study investigating glycerol as a partial replacement for corn in calf starter and grower diets. Glycerol is the primary byproduct of biodiesel production. In the first phase of this study, 120 calves were fed one of four starters: textured control, pelleted control (same ingredients as textured feed), pellet with 3% glycerol, or pellet with 6% glycerol. Calf growth and feed intake were similar for all four treatments; however, treatment costs per calf from day 1 to 56 were \$1.23 higher for calves on the 6% glycerol treatment compared to the other treatments. In the second phase of the study, the same calves were randomly reassigned to three grain mixes (control, 3% glycerol, 6% glycerol) fed with free-choice hay. The grain mix contained cracked corn and a pellet, and glycerol partially replaced corn. Over 112 days, calf growth, total dry matter intake, and feed efficiency were not affected by the addition of glycerol to the grain mix. Hay intake was slightly higher (0.23 lb/d) for calves fed the control grain mix compared to calves fed glycerol.

Effect of Dry Period Length on Calves

Research from the USDA's Animal Improvement Programs Laboratory (Norman and Hutchison) looked at the effects of the dry period length on factors affecting calves and heifers. The researchers examined calving difficulty, stillbirth rate, age at first breeding, and heifer survival to first calving using calving and breeding records for Holsteins from January 1997 through December 2010. Actual calving dates were required to be within 10 days of expected calving dates to ensure that the dry period lengths measured were intentional. Records were divided into 12 categories of days dry.

Calving difficulty increased linearly as dry period length increased up to 66 days dry. More stillbirths occurred with dry periods less than 35 days or greater than 71 days; the lowest stillbirth rates were observed with dry periods of 51 to 65 days. Heifer age at first breeding increased by 5 days when the dam's dry period was 0 to 30 days compared to 56 to 60 days. Heifer survival to the first lactation

was reduced when the dam's dry period was 0 to 30 days or 91 to 120 days compared to 56 to 60 days. Dry periods of 56 to 65 days maximized the number of heifers that survived to their first calving. This study documents the risk of extreme dry periods, whether short (less than 35 days) or long (greater than 71 days), relative to calf and heifer survival.

Officials Announce Tree Survey Efforts in Ohio Due to the Discovery of Asian Longhorned Beetle

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) and the Ohio Department of Agriculture (ODA) are conducting surveys near Bethel, Ohio after the detection and identification of the Asian longhorned beetle. Bethel is located 30 miles southeast of Cincinnati.

First discovered in the United States in 1996, Asian longhorned beetles attack several species of trees including maple, willow, horsechestnut, buckeye and American elm. While in its larval stage, the Asian longhorned beetle (ALB) kills trees by tunneling into large branches and the trunk. Ohio is the fourth state to detect ALB, which APHIS confirmed in Bethel after a citizen reported finding unusual damage in three maple trees to an Ohio Department of Natural Resources Division of Forestry service forester. Previous infestation sites, where the beetles are being successfully contained, include Illinois, Massachusetts, New Jersey and New York.

APHIS and ODA inspection crews are surveying the southern portion of Bethel and the surrounding area to determine the extent of the ALB infestation. Crews will inspect host tree species susceptible to ALB for signs of the wood-boring beetle using ground surveyors and specially trained tree climbers.

APHIS and the ODA are working cooperatively with the Ohio Department of Natural Resources, Ohio State University Extension, the USDA Agricultural Research Service, the USDA Forest Service, and the town of Bethel to evaluate the scope of the infestation and to inform the public about this invasive pest.

Adult ALB are usually large, distinctive-looking insects measuring 1- to 1-1/2 inches long, not including antennae. Their white-banded antennae can be as long as the body itself in females and almost twice the body length in males.

Signs of infestation include perfectly round exit holes (about 3/8 to 1/2 inch in diameter) made by adult beetles when they emerge from trees; the pockmarks on tree trunks and branches where female beetles deposit eggs; frass (wood shavings and saw dust) produced by larvae feeding and tunneling; early fall coloration of leaves or dead branches, and running sap produced by the tree at the egg laying sites, or in response to larval tunneling.

For more information, please visit www.aphis.usda.gov and www.agri.ohio.gov.

Thousand Cankers Disease of Black Walnut Detected in PA

Thousand Cankers Disease has been detected for the first time in Pennsylvania, and a quarantine restricting the movement of wood from Bucks County and other states known to have the disease is effective immediately.

The disease is caused when Walnut Twig Beetles, which carry a fungus, tunnel beneath the bark of walnut trees, causing small cankers to form. As more beetles attack the tree, the number of cankers increases, slowly starving the tree of nutrients and causing the tree to die within 10 years of initial infestation. There is no known cure.

The disease was found on a black walnut tree in Plumstead Township, Bucks County, and reported by the property owner to Penn State Cooperative Extension. The sample was verified by the state and federal Departments of Agriculture. "Thousand Cankers Disease poses a significant threat to Pennsylvania's \$25 billion hardwoods industry," said Agriculture Secretary George Greig. "To help ensure this disease does not spread to other regions throughout the state, I urge Pennsylvanians to comply with the quarantine restricting the movement of wood from Bucks County."

The quarantine restricts the movement of all walnut material including nursery stock, budwood, scionwood, green lumber and firewood. It also covers other walnut material -- living, dead, cut or fallen -- including stumps, roots, branches, mulch and composted and uncomposted chips. Due to the difficulty in distinguishing between species of hardwood firewood, all hardwood firewood is considered quarantined.

The quarantine also restricts the movement of walnut material and hardwood firewood from states known to have Thousand Cankers Disease, including Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Tennessee, Utah, Virginia and Washington. Nuts, processed lumber and finished wood products without bark are exempt from the quarantine. Failure to follow the quarantine order could result in criminal penalties of up to 90 days imprisonment and a fine of up to \$300 per violation, or a civil penalty of up to \$20,000 per violation.

Since many species of wood-boring insects, including the Walnut Twig Beetle and Emerald Ash Borer, can be spread through transport of infested firewood and logs, campers and homeowners are encouraged to use only locally harvested firewood, burn all of it on-site and not carry it to new locations.

Thousand Cankers Disease was first diagnosed in walnut trees in Colorado in 2003, and has caused widespread death of black walnut trees in many western states. Other species such as Arizona walnut, English walnut and California walnut have shown varying degrees of susceptibility to the fungus.

Adult walnut twig beetles, native to the southwestern United States and Mexico, carry spores of the *Geosmithia* fungus, which is introduced to the tree as they bore under the bark. The beetles are extremely difficult to detect as they are dark brown and similar in size to a poppy seed.

Early symptoms of the disease are yellowing of leaves and foliage-thinning of the upper crown of the tree. As the disease progresses, larger limbs are killed followed by the trunk.

The Pennsylvania Department of Agriculture will work with other state and federal agencies and Penn State to survey for walnut twig beetles to slow the spread of Thousand Canker Disease.

Black walnut trees, which make up less than half of one percent of hardwood trees in Pennsylvania, produce high-valued lumber used in woodworking and furniture-making. The nuts of the trees are consumed by humans and wildlife. You can help protect the Northeast's urban, suburban, and forested areas from nonnative invasive forest pests and diseases by doing the following:

- Buy/burn locally cut firewood
- If you have already brought firewood from another area, BURN IT. Do not leave it. Do not take it with you.

Encourage your friends and neighbors not to move firewood distances greater than 50 miles.

For more information about Thousand Cankers Disease, visit www.agriculture.state.pa.us.

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What Does it Look Like?



The Beetle

Seeing spots? You may have ALB. While the ALB may appear threatening, it is harmless to humans and pets. The adult ALB is a distinctive-looking insect with the

following unique characteristics:

- 1 to 1 ½ inches in length
- Long antennae banded with black and white (longer than the insect's body)
- Shiny, jet black body with distinctive white spots
- Six legs
- May have blue feet

Adult beetles are most active during the summer and early fall. Throughout the summer, they can be seen on tree branches, walls, outdoor furniture, cars and sidewalks. If you see the beetle or any signs of infestation, you need to report it immediately.

You won't see the beetle after the first frost until it emerges again in the summer. During the winter months, the beetle's larvae tunnel deep into the trees they infest. Although you can't spot it, you can still be a beetle buster by not moving firewood. Moving firewood can spread the beetle, its larvae and its eggs to healthy trees. So buy it locally and burn it locally, and don't move firewood off of your property.



The Signs

Throughout its life cycle, the ALB leaves obvious signs of its presence in and around host trees. The adult female chews 35-90 oval depressions, called oviposition

sites, into the bark of the host tree. She lays a single egg beneath the bark at each site.



The beetle then hatches into a white caterpillar-like larva that tunnels deeper into the tree, where it feeds and develops over the winter.



As the beetle tunnels, the ALB often pushes sawdust-like material, called frass, out onto the ground or tree branches.



Infested tree.



In the spring, beetle larvae inside the host tree build a hard case for themselves called a pupa and develop within it. In the summer, the adult beetles chew their way out, leaving dime-sized (1/4" or greater), perfectly round exit holes.

Looks Like ALB, But It's Not.

The Whitespotted pine sawyer beetle is often mistaken for the ALB. Here are the telltale differences:

- The Whitespotted sawyer has one white dot between the top of its wings. ALB does not have this dot.
- The Whitespotted sawyer's wings are rough and bronzish-black as opposed to the ALB's shiny smooth black wings.

Whitespotted Sawyer

Asian Longhorned Beetle



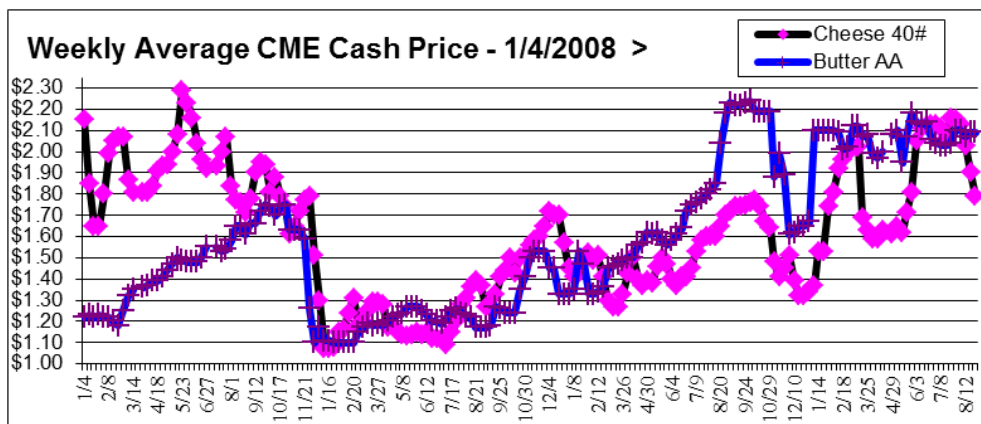
For more photos of the Whitespotted pine sawyer, and other insects similar in appearance to the ALB, go to: [USDA APHIS site Asian Longhorned Beetle Public Identification](http://www.usda.gov/aphis/pep/pep.htm)

Dairy Market Watch

Milk Component	Milk Class Prices						Statistical Uniform Price & PPD					
	Month	Butterfat	Protein	I(Boston)	II	III	IV	Jamestown, NY	Albany, NY	Albany \$/gal. to farmer		
July10	\$1.90	\$2.05	\$18.91	\$17.10	\$13.74	\$15.75	\$16.28	\$2.54	\$16.88	\$3.14	\$1.46	
Aug10	\$2.03	\$2.38	\$19.02	\$16.98	\$15.18	\$15.61	\$16.59	\$1.41	\$17.19	\$2.01	\$1.48	
Sep10	\$2.40	\$2.31	\$18.75	\$17.60	\$16.26	\$16.76	\$17.18	\$0.92	\$17.78	\$1.52	\$1.53	
Oct10	\$2.44	\$2.47	\$19.83	\$17.57	\$16.94	\$17.15	\$17.46	\$0.52	\$18.06	\$1.12	\$1.56	
Nov10	\$2.20	\$2.24	\$20.49	\$17.21	\$15.44	\$16.68	\$17.02	\$1.58	\$17.62	\$2.18	\$1.52	
Dec10	\$1.79	\$2.17	\$20.21	\$15.77	\$13.83	\$15.03	\$15.76	\$1.93	\$16.36	\$2.53	\$1.41	
Jan11	\$2.02	\$1.76	\$18.45	\$16.79	\$13.48	\$16.42	\$15.86	\$2.38	\$16.46	\$2.98	\$1.42	
Feb11	\$2.30	\$2.56	\$19.14	\$17.97	\$17.00	\$18.40	\$17.60	\$0.60	\$18.20	\$1.20	\$1.57	
Mar11	\$2.29	\$3.30	\$21.48	\$18.83	\$19.40	\$19.41	\$19.13	\$0.27	\$19.73	\$0.33	\$1.70	
Apr11	\$2.21	\$2.50	\$22.68	\$19.66	\$16.87	\$19.78	\$19.23	\$2.36	\$19.83	\$2.96	\$1.71	
May11	\$2.25	\$2.31	\$23.00	\$20.63	\$16.52	\$20.29	\$19.64	\$3.12	\$20.24	\$3.72	\$1.74	
June11	\$2.37	\$2.98	\$23.57	\$21.37	\$19.11	\$21.05	\$20.94	\$1.83	\$21.54	\$2.43	\$1.86	
July11	\$2.25	\$3.83	\$24.28	\$21.29	\$21.39	\$20.33	\$21.61	\$0.22	\$22.21	\$0.82	\$1.91	

June Utilization (Northeast): Class I = 39%; Class II = 25%; Class III = 25%; Class IV = 11%

[Class I = processed as beverage milk; Class II = soft products, cream, yogurt and cottage cheese; Class III = cheese (American, Italian), evaporated and condensed products, Class IV = butter, nonfat and whole milk powder.]



Dairy Commodity Markets (USDA Dairy Market News):

Butter: Friday CME cash prices: 7/22 \$2.04, 7/29 \$2.10, 8/5 \$2.10, 8/12 \$2.07, 8/19 \$2.09, and 8/26 \$2.09. Churning activity is increasing as available cream volumes build as ice cream production declines. More cream is also appearing as standardizing for school milk programs increases.

Cheese: Friday CME cash prices (40# blocks): 7/22 \$2.16, 7/29 \$2.15, 8/5 \$2.13, 8/12 \$2.03, 8/19 \$1.90, and 8/26 \$1.79. The cheese market took a tumble at the end of the month after high prices for several weeks. Orders for the reopening of schools/Labor Day promotions are in transit. The question is whether enough milk will be available to fill pent up demand as school milk needs continue to expand.

Dry Products: Nonfat dry milk markets domestically are steady to generally weaker, as are buttermilk powders. Whey powder markets are steady to firm.

Fluid Milk: Milk production across the country continues to trend seasonally lower. Milk production in the Northeast is good with cooler weather, but in the Southeast, hot temperatures are impacting production. The Pacific Northwest has milk production well above year ago levels. The arrival of Hurricane Irene had an impact on fluid sales up and down the Eastern Coast.

Milk Production: Milk production in the 23 major states during July totaled 15.4 billion pounds, up 0.8 percent from July 2010. Production per cow in the 23 States averaged 1,824 pounds for July, 5 pounds below July 2010. The number of milk cows on farms in the 23 States was 8.47 million head, 93,000 head more than July 2010 and 8,000 head more than June 2011.

Milk Income Loss Contract Payments for 2011: January, NO PAYMENT; February, NO PAYMENT; March NO PAYMENT; April NO PAYMENT; May NO PAYMENT; June NO PAYMENT; July NO PAYMENT.

Comments:

According to the University of Wisconsin's Dairy Situation and Outlook, milk prices have been well above a year ago through July. The Class III price set a record high in July at \$21.39, \$7.65 higher than a year ago. All other class prices have been significantly higher on average this year than in the past few years. The July U.S. All Milk Price was \$22.10, also a record and \$6.20 higher than a year ago. For the first seven months the U.S. All Milk price averaged \$19.81, \$4.44 higher than a year ago. While milk prices have been well above a year ago so have feed prices; compared to a year ago the price of corn is about 85% higher, soybeans 37% higher and U.S. average alfalfa hay 62% higher with hay prices more than double in Idaho and almost double in California. So higher milk prices have been needed for dairy producers to experience favorable returns over feed costs.

Penn State's Dairy Outlook reports that the Northeastern corn crop is extremely variable. Some was planted late, some was planted early, but the wet spring hurt root growth, some is very dry, and some has had recent rains. The USDA rates New York's crop as 49% poor or fair.

The value of the U.S. dollar remains at low levels due to world financial markets, which are uncertain with European economies failing. The U.S. suffered a lower government bond rating from S&P, which further shook up the world economy. The U.S. dollar is only 70% of its January 2006 value. This means that things we buy with dollars from these countries are relatively more expensive for us, and things they buy from us are relatively cheaper. Since New Zealand, the European Union, and Australia are our main competitors in dairy exports, this means that in 2009 we were much less competitive than we are today. The export data reflects this and so does the milk price.

For the first time this year, milk per cow was lower than a year ago at 0.2% lower in July. Contributing to this lower milk per cow was high grain and concentrate prices reducing the amount fed to dairy cows and extreme heat in the Northeast and Upper Midwest which depressed milk per cow. The level of milk production for the remainder of the year, of course, will be a major factor where milk prices will end up. USDA's estimated milk production for the month of July shows milk production continues above year ago levels, but the increase continues to slow. For the U.S. as a whole USDA estimated July milk production just 0.7% higher than a year ago compared to a 1.0% increase in June and increases of 2% plus during January through March.

Futures prices, which generally settle at fairly average prices that far out, indicate that the first half of 2012 will average \$20.00/cwt. This price can obviously change quite a bit between now and then, but that price is over \$1.50/cwt. lower than the forecast 2011 average. If feed costs remain high, margins will be even tighter in 2012.

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1830 Perry Road ▪ North Java, NY 14113

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Dairy Herd Improvement Association Listing

Market Manager: Randy Perkins 607-227-6528 Area Technicians: Dave Prutsman
607-973-2586; Joe Summers 585-813-4273; Katie Thomas 814-848-9808

Producer	Rolling Milk	Rolling Fat	Fat %	Rolling Protein	Protein %
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Steuben County

DEUSENBERY FARMS	29547	1111	3.8	929	3.1
SMITH STOCK FARM	28834	1021	3.5	856	3.0
SMITH GERARD M.	25571	969	3.8	831	3.2
DAMIN FARMS LLC	28081	951	3.4	811	2.9
STONE RISE FARM	25803	988	3.8	802	3.1
SCHUMACRES & ASSOCIATES	25871	981	3.8	779	3.0
BEACH THOMAS JR.	24207	945	3.9	775	3.2
ROGER DUNN	24658	913	3.7	745	3.0
CLARK EDWARD JR.	23130	906	3.9	736	3.2
JA WA FARMS	22887	853	3.7	716	3.1
ARCHER BRUCE	22063	845	3.8	700	3.2
BURNS FAMILY FARM LLC	23057	827	3.6	696	3.0
PRICE TOM	22654	786	3.5	695	3.1
BARBR FARMS	22993	834	3.6	691	3.0
DAMIN FARMS LLC	20744	873	4.2	686	3.3
KIMBLEDALE	21967	807	3.7	684	3.1
KARR DAIRY FARMS LLC	22673	822	3.6	677	3.0
DWI BET FARMS	22803	822	3.6	675	3.0
ELLISON FARMS	20783	743	3.6	637	3.1
BENTON HOLSTEINS	20914	809	3.9	636	3.0
WADE LYLE & JEAN	19756	667	3.4	631	3.2
FIDE FARMS	19807	737	3.7	618	3.1
NICHOLS DAIRY	18653	738	4.0	598	3.2
ATHERTON FAMILY	18218	657	3.6	573	3.1
KRAMER DAVID & KIMBERLY	18189	712	3.9	564	3.1
EDWARD SOPOROWSKI	18818	710	3.8	554	2.9
CHARLES P. WATERS	17971	620	3.5	546	3.0
SCHENCK MARVIN & JANINE	18145	644	3.5	534	2.9
STEWART DAVID & KATHY	16798	639	3.8	512	3.0
WHISPERING WINDS FARM	15876	570	3.6	460	2.9

Producer	Rolling Milk	Rolling Fat	Fat %	Rolling Protein	Protein %
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Chemung County

LANTLAND FARMS LTD.	23884	922	3.9	746	3.1
BOOR DAVID	22040	858	3.9	696	3.2
BLAKEMORE LANCE&GINA	22528	831	3.7	696	3.1
TANNER FARMS LLC	20657	756	3.7	616	3.0
TURNER DAVID	19193	697	3.6	594	3.1
GRACE FARMS	11671	541	4.6	417	3.6

Schuyler County

GAIGE FARMS	26966	1022	3.8	848	3.1
SENECA VALLEY FARM	27375	1054	3.9	839	3.1
BURR CHARLES AND KEN	24545	987	4.0	784	3.2
GLENVIEW DAIRY LLC	25851	995	3.8	778	3.0
BERGEN FARMS	25072	958	3.8	762	3.0
HOSTETLER MARK & MARYEL	23930	856	3.6	723	3.0
BURR CHARLES AND KEN	20404	897	4.4	675	3.3
LONE OAK FARM	19380	699	3.6	591	3.0
ALLEN THOMAS R.	18135	703	3.9	550	3.0
KARL CHRISTIAN	16653	672	4.0	511	3.1
NICK AND ERICA WOOD	13067	610	4.7	462	3.5