What's Cropping Up?

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Expected Yield and Quality of Immature Corn Silage

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Unfortunately, the first growing season of the new millennium (assuming we start at the year 2000) was a disastrous one for most New York field crop producers. Unprecedented rains in April, May, and June resulted in delayed planting dates for many producers, especially dairy producers who rightfully harvested first-cut perennial forages in early June when there was an extended dry period. Consequently, many dairy producers planted some corn in late June or even early July. Following the wet spring conditions, July was the second coolest July on record for many locations in New York. Most of the corn that was planted in late June or early July was only at about the 10th leaf stage or chest-high by August 15. Even most of the corn planted in early June was only at the late silking stage as of August 15. The probability is quite high that the corn that was planted in late June or early July may only make the silking stage by the time of a killing frost. Likewise, some of the corn that was planted in early June may only make the denting to 1/2 milk-line stage if cool conditions persist and/or there is an early killing frost. What kind of silage yield and quality can we expect from such immature corn?

We conducted a study in 1990 and 1991 that examined silage yield and quality at silking, dough (pre-denting), and 1/2 milk-line stages. In 1990 and 1991, silage yields at silking averaged only 40 to 45% of the silage yields at the 1/2 milk-line stage (Table 1). Silage yields at the dough stage averaged about 65 to 70% of silage yields at the 1/2 milk-line stage. Obviously, dairy producers who could not plant corn until mid-June or later should expect only about 1/2 to 2/3 of the normal amount of corn silage that they produce.

The NDF concentrations at silking averaged 60.4% in 1990 and 57.6% in 1991 (Table 1). Surprisingly, the NDF concentrations at the dough stage decreased to only 57% in 1990 and 52.2% in 1991. At the 1/2 milk-line stage, however, NDF concentrations decreased to 43.1% in 1990 and 38.6% in 1991. Apparently, dairy producers who could not plant corn until mid-June or later should expect corn silage with NDF concentrations about 15 percentage units greater than normal.

Table 1. Corn silage yield (tons/acre at 65% H_20), neutral detergent fiber (NDF), and in vitro dry matter digestibility (IVDMD) concentrations at silking, soft dough, and ½ milk-line averaged across two locations (Aurora and Mt. Pleasant), two planting dates (late April and late May), and three hybrids (P3925, P3790, and Agway 261) in 1990 and 1991.

Growth Stage	Silage Yield		NDF		IVDMD	
	1990	1991	1990	1991	1990	1991
	---tons/acre----		-------%--------		-------%--------	
Silking	9.5	7.0	60.4	57.6	-	-
Dough	13.6	12.4	57.0	52.2	66.8	72.6
½ Milk-line	21.5	17.4	43.1	38.6	71.8	75.6

Source: Crasta, O.R. and W.J. Cox 1995. Crop Sci. 36: 341-348.

Unfortunately, we did not determine IVDMD concentrations at the silking stage in 1990 and 1991. At the dough stage, IVDMD concentrations averaged only 3 to 5 percentage units less than IVDMD concentrations at the 1/2 milk-line stage (Table 1). Consequently, the digestibility of the immature corn silage may not be too much less than normal.

What can corn silage producers do to deal with this situation? Corn silage producers should first contact local grain corn producers to inquire about the status of their crop. Grain producers may have immature grain corn this year because most of them planted only a portion of their acreage before May 10, and had to finish up in early-June. Most of the early-June grain corn should make the denting to 1/2 milk line stage...too immature for high-quality grain but close to the optimum stage for high-quality silage. Perhaps, dairy producers can harvest some of the corn of the crop producers for silage at a reasonable price. This type of deal could prevent a lose-lose situation.

Forage Management

Fall Forage Management

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Heading into the fall of 2000 it is unlikely that most New York State dairy farmers need additional dry cow forage. Poor weather conditions for forage harvesting through spring and early summer resulted in an unprecedented supply of low quality forage. With a general shortage of high quality feed, the temptation to harvest high quality fall-cut forage will be high. There may a larger window of opportunity to harvest fall forages this year, while waiting for corn to mature or at least to dry out enough for silage harvest.

Alfalfa and Alfalfa-Grass Stands

If a forage stand is at least 50% alfalfa, harvest scheduling should be based on alfalfa and not on any grass growing with it. Grass persistence is not greatly affected by fall harvest management so most concern with fall harvest centers around alfalfa. Alfalfa harvest management has been a controversial topic for many years.

Alfalfa must go through a process of hardening in the fall, with reduced growth coupled with accumulation of carbohydrate root reserves. In the past it was suggested to avoid cutting alfalfa 4-6 weeks prior to the first killing frost (26° F), so as not to disrupt the hardening process. This generally meant no harvest between Sept. 1 and Oct. 15. If there was a post-freeze harvest, a 6 inch stubble should be left to catch and hold winter snow. Stubble also may shade the soil to minimize thawing and may disrupt ice sheet formation.

Current Thinking

Considerable improvement has been made in breeding for improved resistance to the many diseases which shorten the life of an alfalfa stand, and today's alfalfa varieties are capable of withstanding a more demanding cutting management than older varieties. Recent research indicates that improved disease resistance of these winter-hardy varieties make them more resistant to negative effects from fall cutting, due to less total stress on the plants. Although harvest management in the past was strictly tied to stand persistence, we now have more flexibility to consider forage quality and the available supply of stored forage, when making fall harvest management decisions. This is particularly true if the forage is being fed to high-producing dairy cows.

In general, the risk to alfalfa stand life increases with increased stand age, risk also increases with increased number of cuts per season. Recent research, however, indicates that the length of the harvest interval prior to fall cutting is more important than the date of fall cutting for reducing the overall risk to an alfalfa stand. This means a rest period of at least 6 weeks is advisable between the last two cuts of the season. Risk also is reduced if fall cutting is not followed by an unusually early spring harvest.

Soil Fertility is Important to Alfalfa

Traditional wisdom indicates that persistence in grasses is influenced by level of fertility, particularly high soil potassium. Recent research has not backed this up. Alfalfa, on the other hand, is very sensitive to soil fertility. Adequate soil fertility, particularly high soil potassium, increases plant health and will increase alfalfa's tolerance to fall cutting. A high soil pH also reduces the risk of fall cutting.

Fall Harvest Priority Guidelines

There are factors we can not control that affect persistence of fall-cut alfalfa, such as temperature and temperature fluctuations throughout the winter, and precipitation through the fall and winter. Also at this point in the season we no longer have control many of the "controllable" factors affecting persistence of fall-cut alfalfa. These include variety, soil pH and soil drainage. A Table for calculating risk of alfalfa winter injury has been developed at the University of Minnesota and modified for Northeast conditions. For alfalfa and alfalfa-grass stands, fall harvest priorities should be:

1. Alfalfa stands that are likely to be rotated to another crop in 2001.
2. Fields with the longest interval since the previous cut.
3. Alfalfa stands in their 1st or 2nd year.
4. Established alfalfa stands in their 3rd year or older.

For grass stands, fields should be harvested based on amount of regrowth, with highest yielding fields harvested first. Pay attention to moisture content when wilting. Fall grass likely is lower in moisture than spring grass at cutting, but will dry more slowly.

Fall Forage Quality

What is fall harvested forage quality apt to look like? Fall-cut alfalfa it is likely to be low in NDF (possibly below 40%), high in CP (possibly above 20%). Fall-cut grass is likely to be relatively low in NDF (45-55% range) and also low in protein (10-15%, depending on N fertilization). Forage analysis and ration balancing will ensure a diet including fall alfalfa has sufficient NDF and a diet including fall grass has sufficient protein. Mixing of fall-cut forage with high fiber spring forage could generate reasonable ration options, but such mixing generally is not practical.

Other Forages in the Fall

Due to the inability to get in new seedings and/or corn acreage in 2000, the acreage of sorghum species (forage sorghums, sudangrass hybrids, sorghum-sudan hybrids) in NYS undoubtedly increased this year. Sorghum species have the potential for prussic acid poisoning if managed incorrectly when grazing or green chopping. Forage sorghum has the greatest risk, sudangrass the least risk. The prussic acid problem in silage is eliminated with ensiling so height or regrowth after frost becomes a non issue.

Nitrates also can be a potential problem in sorghums when the crop that has been heavily fertilized with nitrogen is under stress. Since we have had higher than normal losses of nitrogen this year due to wet weather, it is less likely that high nitrates will be a problem in the silo (silo gas), or when fed out. Sudangrass and hybrids with Sudan are 85% moisture, and may be cut and wilted to the proper moisture for ensiling. They will lose moisture quickly if put into a wide swath. A tight windrow likely will result in wet silage.

Some things to consider with fall harvest of sorghum species are:

1. Do not graze or green chop for 7-10 days after first frost.
2. Do not graze frost-damaged forage that has begun to regrow until new growth is 18" tall.
3. Get the moisture down if making silage.
4. For safety, do not feed silage until completely fermented, about three weeks after ensiling. Look out for possible silo gas during the fermentation period.

There is going to be much immature corn silage in NYS this fall that will look more like forage sorghum than corn. It will be difficult to make good corn silage prior to freezing weather. There will probably be attempts made to cut and wilt corn for silage, opening the rolls on the mower-conditioner and using a haylage head on the chopper. Getting it in a windrow and getting most of it into the pickup head would be a challenge. This should probably not be attempted on fields with stones that a chopper could pick up.

Summary

In general, any practice that will increase alfalfa plant health will decrease risk of winter injury. Although fall cutting does increase the risk of reduced stand life, appropriate management of controllable factors may make it an acceptable risk to take. Sorghum species should be wilted to the proper moisture before ensiling. Attempting to wilt immature corn for silage is risky, but so is waiting for a first frost and the wet fields that late fall often brings.

Calculating risk of alfalfa winter injury due to fall harvesting.

(Enter the score which describes your field and management)

1. What is your stand age?			
>3 yrs		4	
2-3 yrs		2	
<1 yr		1	
2. Describe your alfalfa variety (Part one):			
a. What is the winterhardiness (fall growth score)?			
Moderately winterhardy		3	
Winterhardy		2	
Very winterhardy		1	
3. Describe your alfalfa variety (Part two):			
a. What is the disease resistance?			
Moderate resistance to only bacterial wilt.		4	
Moderate resistance to bacterial wilt plus either Phytophthora root rot, Fusariam wilt, Anthracnose or Verticillum wilt.		3	
Moderate resistance to bacterial wilt plus 3 of 4 diseases above.		2	
Moderate resistance to all 5 diseases above.		1	
4. What is the soil pH?			
≤ 6.0		4	
6.1 – 6.5		2	
≥ 6.5		0	
5. What is soil test K?			
Very low		4	
Low		3	
Medium		1	
High or Very High		0	
6. What is your soil drainage?			
Somewhat poorly drained		4	
Moderately well drained		3	
Well drained		2	
Excellent (sandy soils)		1	
7. Describe your harvest frequency:			
Harvest interval	Last Harvest		
<30 days	Sept. 1 – Oct. 15	5	
	After Oct. 15	4	
	Before Sept. 1	3	
30 – 35 days	Sept. 1 – Oct. 15	4	
	After Oct. 15	2	
	Before Sept. 1	0	
>35 days	Sept. 1 – Oct. 15	2	
	After Oct. 15	0	
	Before Sept. 1	0	
8. For a mid- to late October harvest, do you leave 6 inches or more of stubble?			
No		1	
Yes		0	
Determine your total score (The sum of points from questions 1-8)			

(Source: Adapted from C.C. Sheaffer, University of Minnesota, 1990)

Fall cutting risk:	**If your score is:**	**Your risk is:**
	3-7	low/below average
	8-13	moderate/average
	14-20	high/above average
	>20	very high/dangerous

Disease Management

Mycotoxin Contamination of Grain and Silage

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Mycotoxins

Mycotoxin is a general term for *a poison produced by a fungus*. Only certain strains of certain fungi produce mycotoxins, and only under certain environmental conditions. Corn and small grain cereals are especially prone to accumulate mycotoxins in their seed tissues, although the stem (stover) fraction of these crops may also be invaded by toxin-producing molds. Molds may continue to grow and produce toxins in stored commodities under aerobic, high moisture conditions. However our most prevalent problems in the Northeast have been with mycotoxins produced in standing crops prior to harvest. Most contamination of corn in the Northeast involves mycotoxins (deoxynivalenol, zearalenone, and fumonisins) produced by fungi in the genus *Fusarium* (also known as *Gibberella*). Occasionally, corn grown in the warmest areas of the Northeast may be contaminated by aflatoxins (mycotoxins produced by the golden-colored mold *Aspergillus flavus*). Mycotoxin problems in wheat and barley in the Northeast have principally involved vomitoxin produced by the pink-colored mold *Fusarium graminearum*. Mycotoxins are only problematic when they occur in commodities above levels of concern established for humans and animal species (Table 1). Mycotoxin contamination is measured in parts per million (ppm) and parts per billion (ppb).

Table 1. **Main Mycotoxins Occurring in Corn in the Northeastern United States**

Mycotoxin:	Predominant toxigenic mold:	Lowest level of concern:	Common effects on animals:
Deoxynivalenol (vomitoxin)	*Fusarium graminearum* (*Gibberella zeae*)	1-3 ppm *	Feed refusal in monogastric animals; severity increases with level. Swine are the most sensitive species; adult cattle and poultry tolerate > 10 ppm.
Zearalenone	*Fusarium graminearum* (*Gibberella zeae*)	1-5 ppm	Hyperestrogenism and infertility. Swine (gilts) are most sensitive; adult cattle tolerate 50 ppm.
Fumonisins	*Fusarium moniliforme*	5-10 ppm	Brain deterioration, death (horses); liver damage (horses, swine, cattle, poultry, others).
		>100 ppm	Lung damage in swine
Aflatoxins	*Aspergillus flavus*	50 ppb	Highest level for dairy cattle to avoid illegal residue of 20 ppb in milk products for human consumption.
		100 ppb	Slowed growth of young animals (poultry, cattle, swine, horses)
		200-400 ppb	Slowed growth of adult animals
		> 400 ppb	Liver damage

*USDA recommends less than 1 ppm deoxynivalenol in finished food products and less than 2 ppm in unmilled grain destined for human consumption.

Mycotoxin situation in New York in 2000

Contamination of wheat by vomitoxin is a byproduct of Fusarium head blight (scab). Scab occurred in epidemic proportions in summer 2000 associated with wet weather during wheat flowering. Wheat that would ordinarily be marketed for flour is being marketed this year for feed and typically has vomitoxin concentrations of 2-5 ppm.

Mycotoxin contamination in Northeast corn is mainly a byproduct of occurrence of Gibberella and Fusarium ear rots. Gibberella ear rot, with its associated contaminants vomitoxin and zearalenone, is often severe in fields where 24 hours or more of continual leaf wetness coincides with silk emergence. Corn was just starting to silk at the time this article was written, so the risk to the New York corn crop had not been assessed.

Reducing the risk of mycotoxin contamination in corn

Risk is diminished by:

• Timely planting of locally adapted hybrids of appropriate maturity

• Avoiding continuous planting of corn under conservation tillage, especially where Gibberella/Fusarium stalk rot is prevalent

• Fertilizing based on soil test and avoiding excessive nitrogen

• Avoiding stress from insects, weeds, and excessively high plant populations

• Planning ahead for harvest and subsequent grain handling:

- Clean grain bins before putting in the new crop

- Harvest fields with delayed maturity or high lodging potential as silage or grain for anaerobic storage; or be prepared to rapidly dry grain down to 13.5% moisture content

- Aerate grain bins to prevent moisture migration caused by colder temperatures

Testing for mycotoxins

On-site test or laboratory test?

On-site test kits are available through commercial firms. Most are antibody-based and indicate contamination by a color change; other tests utilize thin layer chromatography (TLC) or minicolumns. On-site tests are quick and relatively inexpensive (depends on the number of samples run). They generally give accurate and reproducible results when used on dry grain samples; they are not reliable for high moisture grain or silage. Specific mycotoxins can be quantified relative to standards that are supplied with the kits. On-site tests are often used as diagnostic tests prior to confirming laboratory tests.

Commercial and government/university labs offer mycotoxin testing. Lab tests are expensive, comprehensive, and quantitative for many toxins, and are useful for wet and dry samples. Methods include high-pressure liquid chromatography (HPLC) and gas chromatography-mass spectrometry (GC-MS).

Sample collection and handling

Samples must be representative of grain in a truck or bin. Obtain many small samples at periodic intervals from a moving stream of grain or by probing all levels and areas of a stationary grain mass to make a composite 10 lb sample, that should be further mixed and subsampled to produce a 2 lb sample for shipping to a lab. Ship dry samples in breathable cloth or stout paper bags. Wet samples should be in sealed containers and be frozen or refrigerated during transit.

More information on on-site tests and/or laboratory analyses is available from:

• Cornell (College of Veterinary Medicine) Nutritional and Environmental Analytical Services Lab, Ithaca, NY. Phone 607-257-2345 (www.vet.cornell.edu/public/neas/)

• Dairy One Forage Lab, Ithaca, NY. Phone 1-800-496-3344 extension 172.

• Neogen Corporation. Phone 800-234-5333 extension 268 (www.neogen.com)

• Romer Labs, Inc. Phone 800-769-1380 extension 104 (www.romerlabs.com)

• Vicam LP. Phone 617-926-7045 (www.vicam.com)

• Diagnostix Ltd. Phone 800-282-4075 (www.diagnostix.ca)

Forage Management

Immature Corn Silage - Nutritional Considerations

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The 2000 growing season in New York has again deviated from "normal." In many areas of the state, corn silage planting was delayed due to wet weather. Corn for silage was still being planted in early July. For this corn to mature, a lot of GDU's (growing degree units) and a late frost will be needed. It normally takes 50-55 days from silking to maturity for most corn silage hybrids. An early frost will greatly increase the acres of immature corn silage harvested. Table 1 contains an approximate timetable from silking to one-half milk line and maturity, and the effect of maturity on whole plant moisture and silage yield.

Table 1. Days from silking to various developmental stages of corn plants.[a]

Stage of Maturity	Approximate calendar days to ½ milk line	Approximate calendar days to maturity	Whole plant moisture, %	Percent of maximum silage yield
Silking	35-45	50-60	80-85	50
Blister	25-35	40-50	80-85	60
Late Milk	15-25	30-40	75-80	70
Early Dent	5-15	20-30	70-75	80
½ Milk Line	0	10-15	60-70	100

[a]From Pioneer Dairy Update, Sept., 1996.

Days to maturity are estimated by assuming an accumulation of 20 Growing Degree Units per day (a high of 80 and low of 60, for example). If the weather is cooler, development will be slower; if it is warmer, the corn will mature faster.

The quality and maturity of the corn silage harvested depends on a large number of factors. These include hybrid, fertilization program, planting population, planting date, GDU's, rainfall and frost date. These factors will result in a large amount of variation in corn silage quality.

Table 2 contains nutrient composition data for corn silages with varying grain contents. Immature corn silage is high in NDF, low in NFC and low in predicted NE_l. Actual nutrient content of samples from specific farms can vary considerably from these numbers.
What About the Composition of the NFC?

Immature corn silage will contain a majority of the NFC as sugars with very little starch. As corn grain matures, the starch component will increase and the sugars will decrease.

When Should Immature Corn be Harvested?

Immature corn is low in dry matter content (Tables 1 and 2). If possible, harvesting should be delayed until the plant is > 30% dry matter. Harvesting the plant at low dry matter content will alter silage fermentation, increase silage runoff and potentially depress feed intake.

What if the Corn Gets Frosted?

A killing frost will cause the plant to lose leaves and begin to dry down. The stalk will contain most of the moisture and will dry down slowly. Samples should be analyzed for dry matter to determine the proper harvest time. The plant will often appear drier than it really is.

What About Silage Management Practices?

Silage management practices are critical to harvesting and storing immature corn. Dry matter content should be 30% or greater. Sharp knives will give a clean cut rather than tearing or shredding the plant. Packing, covering, and particle size guidelines used in harvesting "normal" corn silage need to be followed.

How Will Fermentation be Altered?

The immature corn plant will contain a high level of sugars to support fermentation. If a low level of lactic acid bacteria is present, a high acetic acid and low lactic acid silage may be produced. An extended fermentation due to the low dry matter content will also result in higher levels of soluble protein, ammonia and other nonprotein nitrogen compounds. A research proven inoculant should be used to improve fermentation efficiency and shift the fermentation towards lactic acid production. For any silage additive used, ask the company for data regarding application rates and efficacy for use with wet, immature forages.

Should Nonprotein Nitrogen (NPN) Sources be Added at Harvest?

NPN sources should not be added unless the plant has at least reached the milk stage. Adding NPN to wetter, immature forages can adversely alter fermentation and potential intake by the animal.

What About Fiber Digestibility?

Fiber digestibility is usually lower in corn silages grown in cool, wet years. Lignin will comprise a higher percent of the fiber fraction of the plant. This is probably related to moisture stress. The weather during the time period from tasseling to cob formation is the most critical phase of growth in determining potential changes in digestibility. Actual fiber digestibility will be difficult to predict with the highly variable weather patterns that existed during the growing season.

What Ration Adjustments Are Needed?

The nutrient composition data in Table 2 provides a starting point. The following points should assist in utilizing this forage:

1. Forage testing will be essential due to the large variation in nutrient content expected. Additional tests such as fiber digestibility, fermentation profiles, sugar and starch may be helpful. Wet chemistry analysis may be preferable unless the forage testing lab has recalibrated the NIR instrument for this growing season.

2. The portion of the energy provided should be from NFC sources such as soy hulls, beet pulp, hominy, corn gluten feed and other similar sources. Immature corn silage will probably have a higher level of residual sugars, which are rapidly available in the rumen. Added fat sources may also help.

Table 2. Nutrient composition and predicted milk production from corn silage.[a]

Grain % of DM	DM, %	CP, % of DM	NDF, % of DM	Lignin, % of NDF	NFC,[b] % of DM	NE_L Mcal/[c]	Milk[d] lbs
0 (immature)	25	9.0	60	5	23.4-29.4[e]	.57-.64	18.4-20.6
30	33	9.5	49	11	34.5	.67	21.6
40	33	9.2	45	8	38.7	.74	23.9
50	35	8.0	41	7	43.3	.77	24.8

[a]Source: Feed library, CNCPS V 4.0, Animal Science Mimeo 213, Cornell University, June, 2000.
[b]NFC, % = 100 – (CP, % + NDF, % + Fat, % + Ash, %)
[c]Predicted using the CNCPS V 4.0 model
[d]Predicted milk, on an energy basis, that could be produced if 10 lbs of dry matter from corn silage is fed.
[e]NFC varies due to ash content. Ash content of immature corn silage will range from 5 to 11% of total plant dry matter.

3. Immature corn silage may be higher in soluble and other NPN compounds if an extended fermentation takes place. This may require an adjustment in the protein mix to provide more undegradable protein.

Pricing Corn Silage Based on Maturity and Feeding Value Relative to 1/2 Milkline Corn

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Forage Management

Component	Class IC	Class IB	Class I	Class II	Class III	Class IV	Class V
Maturity Description	Black Layer - Unprocessed	Black Layer- Processed	Ideal (½ Milkline)	Full Dent	Early Dent	Late Milk	Silk/Blister to Earless
Dry Matter %	38+	38+	34 - 36	29 - 34	26 - 29	23 - 28	<23
Starch % DM	36.2	36.2	32 - 35	27 - 31	23 - 24	11 – 17	< 10
Grain % Feed	50	50	50	45	35	25	< 15
ADF % DM	23.9	23.9	19 - 21	23 - 24	26 - 28	30 - 32	30 - 36
NDF % DM	42	42	36 - 42	43 - 45	47 - 52	52	52 – 57
Lignin % NDF	5.8	5.8	4.4	4	4	3.6	-
NFC % DM	43.8	43.8	42	38	34	28	23
NE_L Mcal/lb.	.74	.76	.76	.74	.71	.69	.57 - .64
Sugars % DM	2.1	2.1	2.2	2.2	2.2	1.8	10
Total VFA % DM	6.4	6.4	5.5	7.5	9.0	-	18
pH	4.1	4.1	3.9	3.9	3.9	3.9	3.9
Eff. NDF % NDF	82	82	61 - 81	61 - 81	71 - 81	81 - 90	81 – 95
Intake DM Lbs./day	28.9	28.9	32.0	27.6	24.5	23.4	21.3 - 23.4
$ val. Milk/ton CS	206.6	212	200.9	171.4	143.7	129.4	92 – 113.6
$ val. % of Class I	103	105	100	85	71	64	46 – 56
Risk – DM loss	Moderate	Moderate	Low	Low	Moderate	Moderate	High
Risk – Leachate	Low	Low	Low	Moderate	Moderate	High	Very High
Risk – Clost. Ferm.	Low	Low	Low	Moderate	High	High	Very High
Risk – Bunk Life	Moderate	Moderate	Low	Low	Low	Low	Low

*Adapted from Ivor Bending, 1997 and Tom Tylutki, 1998

This chart merely provides a guide for pricing the many "descriptions" or "types" of corn silage available in fall 2000. Overmature (Class IC and IB) and undermature (Classes II – V) are positioned relative to "ideal" or ˚ milk line corn silage. Considerations for pricing include:

- A prevailing local price in $ per ton, as-fed has been established and agreed to. This price will reflect current supply and demand as well as a traditional neighborhood year-to-year price.

- The relative maturity of the corn can be accurately described.

- The "$ value % of Class I" line is an index of the dollar generating ability of an as-fed ton of the corn silage expressed as a percent of ideal corn silage. It is simultaneously adjusted for dry matter differences. The milk price used was $12.50/cwt. Prevailing price for ideal corn silage times the percent in a given column is a reasonable way to discount price. Example: Class I or "ideal" corn silage seems to be trading for $25.00/ton locally, placed into your storage. You can get a silo filled from a nearby field that is early dent and 28% DM. A fair correction for its milk producing ability would be $25.00 x .71 = $17.75/ton.

- Note that the drier corn silages index higher than ˚ milkline corn. That reflects the higher dry matter content of these forages. The 2% higher value for processed versus unprocessed reflects its better overall utilization.

- All Classes have some risk factors greater than Class I for dry matter losses during fermentation, leaching (particularly when acidic leachate can move to a stream), smelly and unpalatable clostridial fermentation and poor bunk life at feed out. Consider further discounts based on these risks. Given these considerations, you may decide to pay no more for unprocessed, drier corn silage, even though it was preliminarily valued at 103%.

- Corn that is mature and then sees a hard frost before harvest can take place, may be far drier than the "black layer" example. Leaf loss, grain shatter, incomplete fermentation, higher acetate as a percent of lactate, higher pH and poor bunk-life become liabilities. While processing may be an improvement over not processing, it is too difficult to predict the relative amounts of leaf, stalk, cob, husk and grain, not to mention grain hardness. The only way to get into the ballpark needed to price it relative to Class I is to run a full-blown analysis.

The most ideal means of pricing is to run an analysis on the corn silage, measuring as many of the parameters in the above table as possible. That takes the guesswork out of it, and is fairer to seller and buyer alike. Other dividends to having a robust analysis accrue in more accurate ration balancing. Contact your local County Extension Office, your Feed Company representative or Feeding Management consultant for details on corn silage sampling and analysis options.

Calendar of Events

October 24	Field Crop Dealer Meeting, Clifton Park, NY
October 25	Field Crop Dealer Meeting, New Hartford, NY
October 26	Field Crop Dealer Meeting, Batavia, NY
October 27	Field Crop Dealer Meeting, Waterloo, NY
November 1-3	Northeast Division of American Phytopathological Society Meeting, Cape Code, MA
November 5-9	ASA-CSSA-SSSA Annual Meeting, Minneapolis, MN
January 2-5	Northeastern Weed Science Society, Cambridge, MA
February 11-15	Weed Science Society of america, Greensboro, NC

What's Cropping Up? is a bimonthly newsletter distributed by the Department of Soil, Crop and Atmospheric Sciences at Cornell University. The purpose of the newsletter is to provide timely information on field crop production and environmental issues as it relates to New York agriculture. Articles are regularly contributed by the following Departments at Cornell University: Crop and Soil Sciences, Plant Breeding, Plant Pathology, and Entomology. **To subscribe, send a check for $8.00 along with the form at the right.**

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