

Evaluation of Corn Silage Hybrids in Temiskaming

Purpose:

To evaluate the performance of corn silage hybrids for suitability in the Temiskaming region of Ontario.

Methods:

With the improvement of drainage on farms, earlier maturing corn silage hybrids arriving on the market and a slight increase in the Corn Heat Units in the last decade more and more livestock producers are looking at growing corn silage in Temiskaming. Corn silage is an emerging crop in the district, which has been known primarily for cereal, canola and forage production. The average Corn Heat Units for the last 12 years is 2,461

The Temiskaming Crop Coalition found three co-operators for the corn silage trial at locations in Thornloe, Earlton and BelleVallée. Each site had two corn silage hybrids replicated at least 4 times to account for field variability in drainage, manure application, soil type and other variable factors. At harvest two loads of each hybrid were weighed and a composite sample was sent to a laboratory for feed analysis (wet chemistry).

On the following pages you will find the weather information for the 2005 growing season and the yield / quality results of the trials.

Pictures : axle scales purchased by the Temiskaming Crop Coalition in 2004



Weather of 2005: As we know corn yields correlate directly with the heat units. Heat units were good in 2005 with a total of 2,500 from May 1st to September 24th however moisture was the limiting factor to higher yields in the district. The frost free period was also longer than normal with 133 days from May14th to September 24th.

Results:

Figure 1.

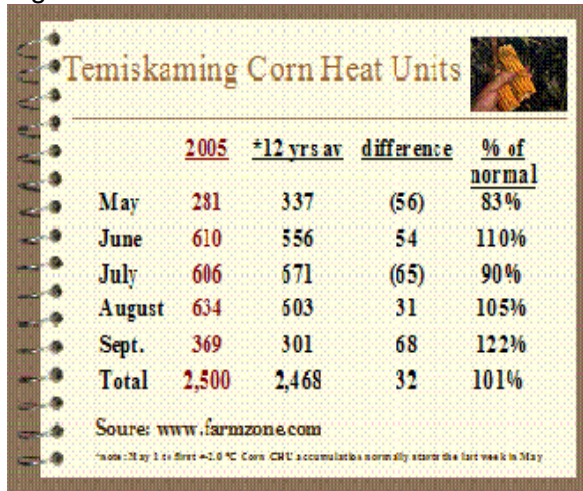
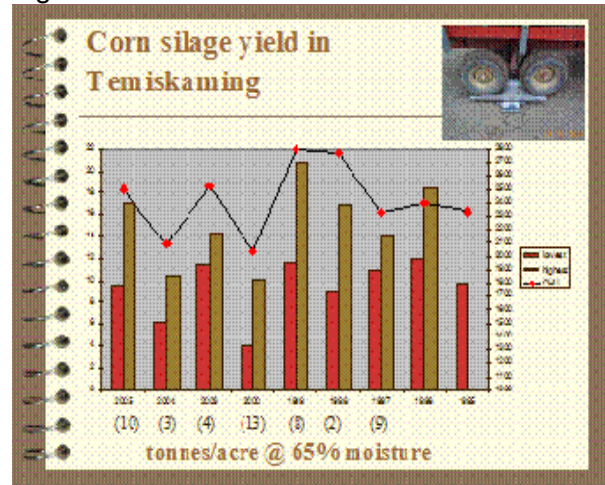


Figure 2.



Summary:

Observations and Comments:

- Precipitation recorded by township from May until the end of August by Agricorp was the following for the corn silage sites. Many sites were below the average season precipitation.
 - A) Kerns township (Thornloe site) 256mm or 78% of average season
 - B) Armstrong township (Earlton site) 365mm or 111% of average season
 - C) Hillard township (Belle Vallée site) 280mm or 85% of average season
- Yield obtained in 2005 were near or slightly above district average however lower than anticipated with the high heat units (2,500CHU) received.
- Corn Silage Hybrid Pioneer 39T67 had a slight yield advantage over the other hybrids on the three sites.
- Moisture levels at harvest were lower this year. Most years moisture levels can be high at harvest leading to silo seepage.
- Corn silage quality is excellent from the feed analysis performed by wet chemistry.

Crop Advances: OMAFRA Field Crop Project Reports

Table 1. 2005 Temiskaming Corn Silage Site Information and Results						
Site	Thornloe		Earlton		Belle Vallée	
Hybrid	Dekalb DK27-12	Pioneer 39T67	Dekalb DK26-78	Pioneer 39T67	Dekalb DK26-78	Pioneer 39T67
Moisture at harvest	67.15%	62.3%	59.9%	62.02%	69.82%	65.27%
Yield @ 65% moisture t/ha (t/ac)	30.33 (13.54)	33.02 (14.74)	27.50 (12.27)	31.94 (14.26)	21.17 (9.45)	25.85 (11.54)
Protein DM	8.51%	7.8%	8.03%	6.77%	8.38%	8.20%
A.D.F % DM	24.9%	24.93%	16.92%	20.27%	22.73%	24.42%
TDN % DM	68.26%	68.25%	72.72%	70.85%	69.48%	68.54%
Net Energy (Iac)Mcal/kg.	1.54	1.54	1.65	1.61	1.57	1.55
Previous Crop	Yr1 Barley, Yr2 Canola		Yr1 pasture, Yr2 hay		Yr1 corn	
Soil test	pH 7.2, P 22H, K 214VH		pH6.5, P9L, K184VH		pH6.2, P12M, K 68M	
Drainage	100ft parallel to rows		60ft perpendicular		100ft perpendicular	
Soil type	Ens sandy loam/ Hnc silty clay (east end)		Hanbury clay		Fac Falardeau Silty clay loam	
Seeding date	May 6 th 2005		May 9 th 2005		May 8 th 2005	
Seeding Rate	30,200 seeds/ac		30,000 seeds/ac		31,000 seeds/ac	
Fertilizer	8-32-16@95lbs		11-52-0 @95lbs		8-32-16 @150lbs + 46-0-0 @190lbs	
Manure applied	Lq dairy 3,600 gal/ac		Lq dairy 5,200gal/ac		None	
Total fertility applied in lbs	66-50-104		93-83-124		99-48-24	
Hybrids	Dekalb 27-12	Pioneer 39T67	Dekalb 26-78	Pioneer 39T67	Dekalb 26-78	Pioneer 39T67
CHU rating	2,250CHU	2,250CHU	2,150CHU	2,250CHU	2,150CHU	2,250CHU
Herbicide applied	1 app. 1L Round Up		1 app. 75L Round up		Round up	
# of replication	4 rows rep. 6 times		8 rows rep.9 times		4rows rep. 4 times	
Harvest date	September 12 th 2005		September 12 th 2005		September 9 th 2005	
Factors limiting yield in 2005	<ul style="list-style-type: none"> • Dry summer • Volunteer canola • Lack of Nitrogen 		<ul style="list-style-type: none"> • Dry summer • Quackgrass pressure 		<ul style="list-style-type: none"> • Dry summer • Seed placement • Vol canola & vetch 	

Table 2. 2005 Temiskaming Corn Silage Site Information and Results				
	Touzin Valley Farm (Touzin)	Rivadale Farm (Rivard)	Robertdale Farm (R.Robert)	Loranlee Farms (B.Loranger)
Hybrid	Dekalb 27-12	Dekalb 27-12	Pioneer 39T67	Pioneer 39T67
Heat Units Rating	Dekalb 27-15 2,250CHU	Dekalb 27-15 2,250CHU	2,250CHU	2,250CHU
Harvest date	September 8 th	September 9 th	September 12 th	September 15 th
Moisture at harvest	67%	67%	64%	66%
Yield @ 65% Moisture t/ha (t/ac)	34.16 (15.25)	32.30 (14.42) note cutting 16"	38.13 (17.02)	34.05 (15.2)
# of loads weighed	2 loads	2 loads	1 load	3 loads
Seeding date	May 18 th 2005	n/a	May 5 th 2005	n/a
Plants population	33,500	34,000	n/a	n/a
Fertilizer	73-130-0	n/a	n/a	n/a
Manure applied	Not known	n/a	n/a	n/a
Precipitation % of average season total	Casey 75%	Armstrong 111%	Armstrong 111%	Armstrong 111%

Next Steps:

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