Growing Corn in Alberta Agronomy Update Lethbridge Ab

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DuPont Pioneer


PIONEER
P2088YHR
World Record Corn Yield
454.98 bu/acre
(28.55 ton/ha)
P2088YHR
David Hula
Charles City, VA
PIONEER
P2088YHR
08/14/2014

- Understanding Corn Maturity
- Hybrid Selection
- Plant Population
- Planting
- Fertility
- Weed Control
- Insects

Understanding Maturity

- **No industry standard**
- CHU, GDD, CRM
- Maturity to grain or silage
- Long Term Average CHU
  - Alberta Ag ACIS
  - Farm Zone


PIONEER
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FOCUS ON THE CUSTOMER

2001

Ponoka, AB

Plant Height

vs

DM Weight

Variety	A	B	C	D
Heat Unit Rating	2000	2150	2150	2600?
DM Weight (whole plant)	*210 grams*	*170 grams*	*145 grams*	*140 grams*

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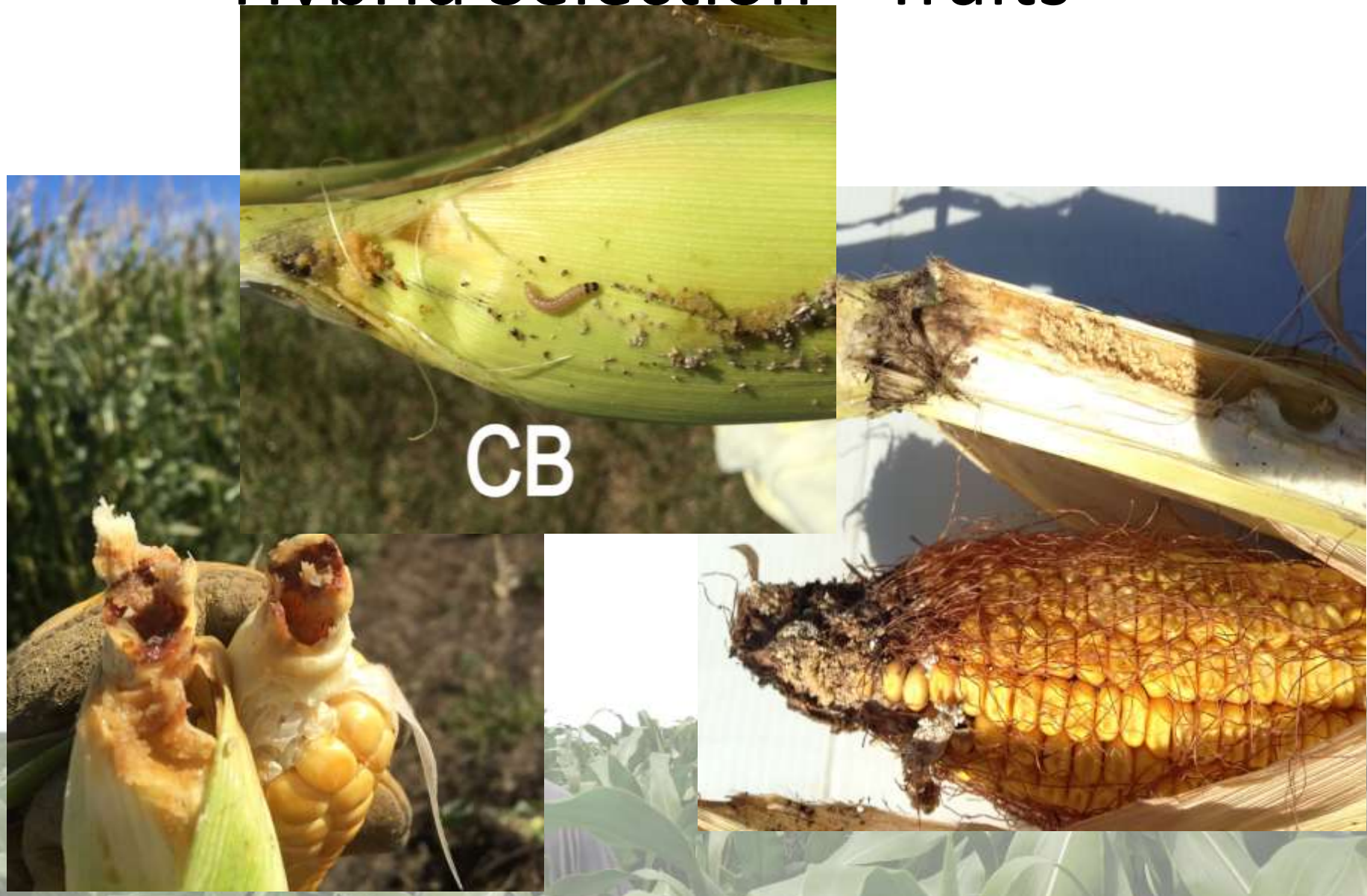
Hybrid Selection - Traits



Plant Populations

- Early corn responds better to higher populations.
- Depending on region and level of early stress – best results observed between 28,000 and 34,000 ppa.
- 32000 is the general rule
- Increase population by 10% if seeding in cold wet soils

Planter vs. Air Seeder Kenton, Manitoba - 2008

Product	Planting Method	Plant Population	Silage Weight (30% DM)	Whole Plant Moisture
Hybrid A	Planter	29,900 ppa	16.75	70.5%
Hybrid A	Air Seeder	29,900 ppa	14.80	71.9%
Hybrid B	Planter	29,900 ppa	16.80	66.8%
Hybrid B	Air Seeder	29,900 ppa	13.23	68.7%

Table 1. Nutrient uptake by the growing crop and removal in the harvested portion of selected crops.

Crop	Unit	Uptake (removal) N	P_2O_5	K_2O
Cereals				
Barley	lb/bu	1.53 (1.10)	0.61 (0.40)	1.46 (0.35)
Oats	lb/bu	1.38 (0.80)	0.40 (0.25)	1.60 (0.20)
Corn	lb/bu	1.18 (0.75)	0.63 (0.44)	1.41 (0.29)
Wheat				
10% protein[1]	lb/bu	1.55 (1.10)	0.67 (0.50)	1.47 (0.35)
12% protein	lb/bu	1.83 (1.30)	0.67 (0.50)	1.47 (0.35)
14% protein	lb/bu	2.12 (1.50)	0.67 (0.50)	1.47 (0.35)
Oilseeds				
Canola	lb/bu	3.12 (1.88)	1.30 (0.91)	2.05 (0.46)
Flax	lb/bu	2.58 (2.00)	1.42 (1.10)	2.00 (0.65)
Sunflower	lb/cwt	3.90 (2.80)	1.43 (1.10)	2.03 (0.60)
Soybean[2]	lb/bu	5.80 (4.00)	1.00 (0.80)	4.40 (1.40)
Pulses				
Field peas[2]	lb/bu	3.36 (2.40)	1.45 (1.20)	3.00 (0.71)
Lentils[2]	lb/bu	3.01 (2.00)	0.90 (0.62)	2.57 (1.10)
Root Crops				
Potatoes	lb/cwt	0.63 (0.35)	0.27 (0.15)	0.77 (0.56)
Sugar beets	lb/ton	9.57 (4.00)	2.49 (1.50)	17.82 (6.60)
Forages[3]				
Alfalfa[2]	lb/ton	56	15	60
Bromegrass	lb/ton	36	13	59
Fescue	lb/ton	38	18	52
Timothy	lb/ton	38	14	62
Barley silage	lb/ton	40	13	29
Corn silage (67% water)	lb/ton	8.30	3.60	8.30

[1] At same moisture content as grain yield measured.
[2] Legume crops obtain most of their N from atmospheric N fixation.
[3] Forage yield on a dry matter basis.

Safe Rates of Starter/Popup Fertilizer

Placement	Sandy Soils	Non-Sandy Soils
	10-34-0 (gal/acre) [6]	
With the seed (pop-up)	5	5
1/4 to 1/2 inch from the seed	10	10
1 inch from the seed	20	40
2 inches or more from seed	20+	40+

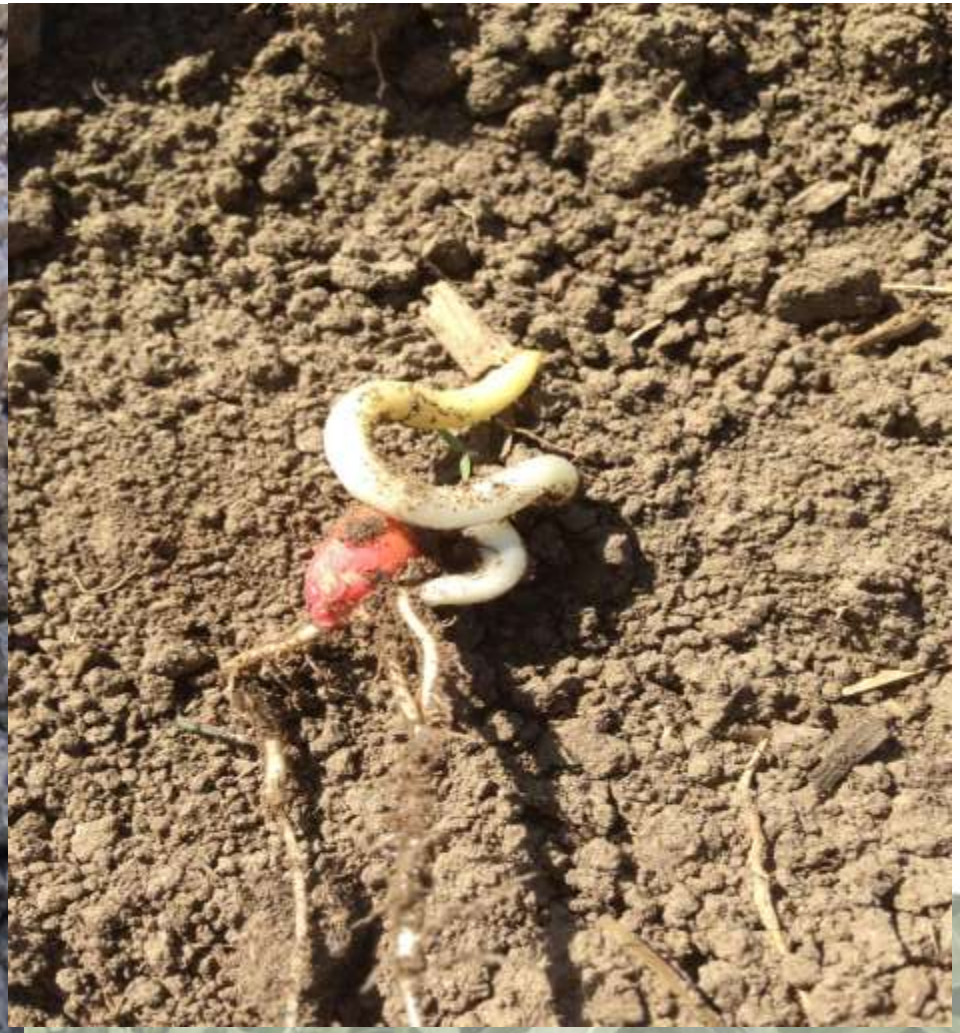
Product	Salt Index, lb/gal	Value Relative to 10-34-0
Ammonium polyphosphate 10-34-0	2.28	1
7-21-7	3.04	1.33
Urea ammonium nitrate 28-0-0	6.75	2.96
Urea ammonium nitrate 32-0-0	7.78	3.41
Ammonium thiosulfate 12-0-0-26	30.9	13.55


05/28/2013

Stand Establishment/ Emergence

- Minimum soil temperature 8-10C
- Seeding Depth – 1.5”- very imp
- 1-5 day weather – do not plant if expecting cold rain/snow
- Proper seed placement – spacing
- Even emergence – effect of runts
- Avoid if possible planting corn into canola stubble

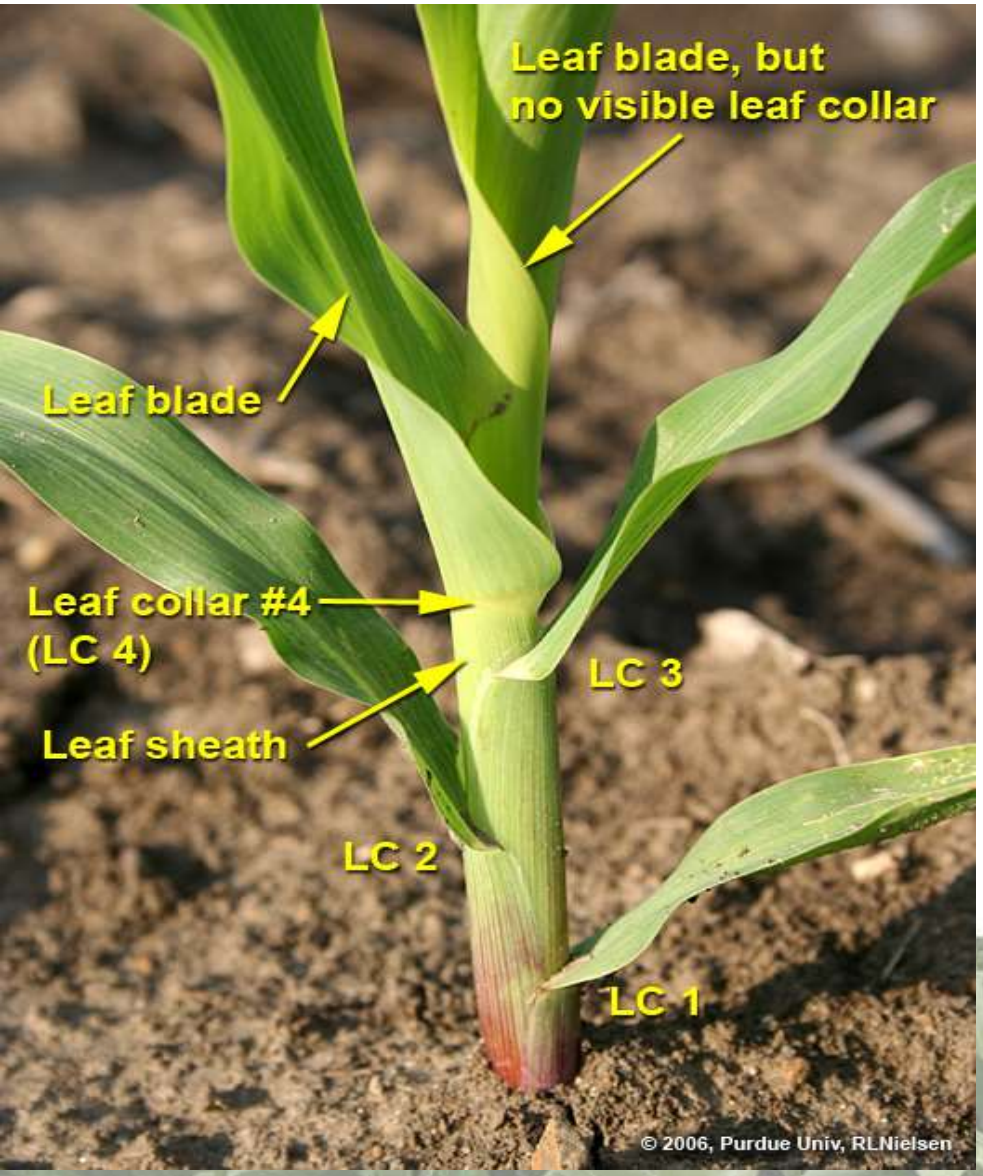
Cold Chill

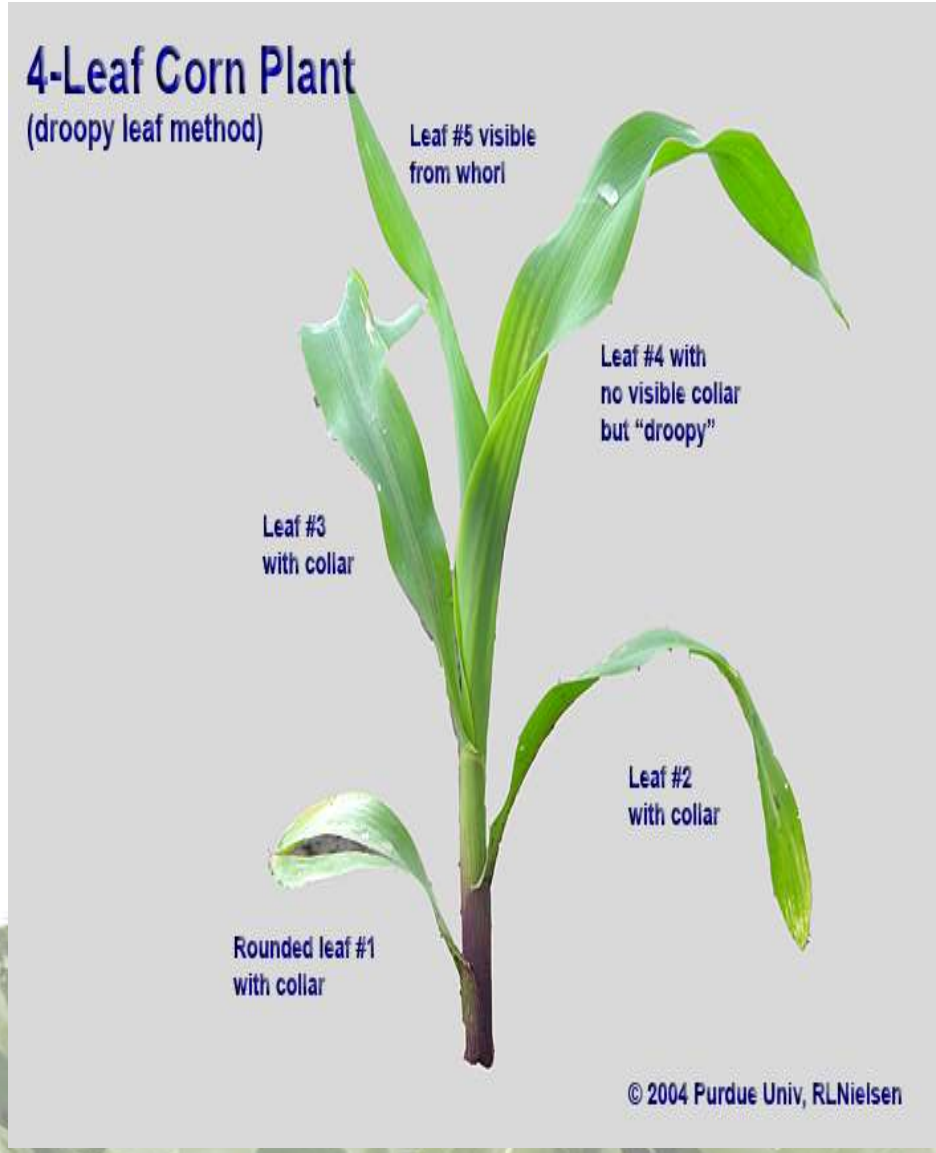



Normal vs 1/2"


3"
1.5"

How to Stage a Corn Plant



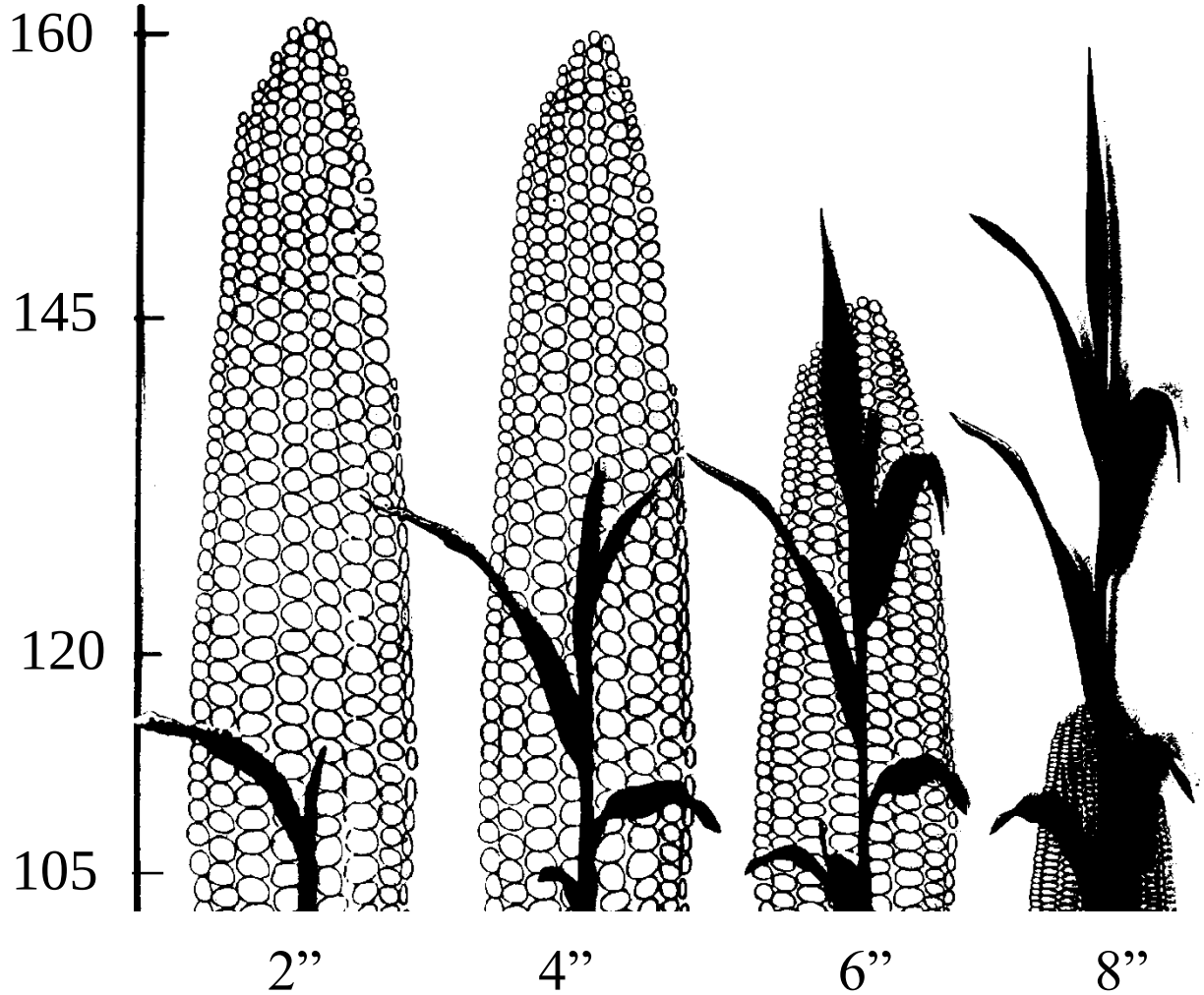


Early Season Frost

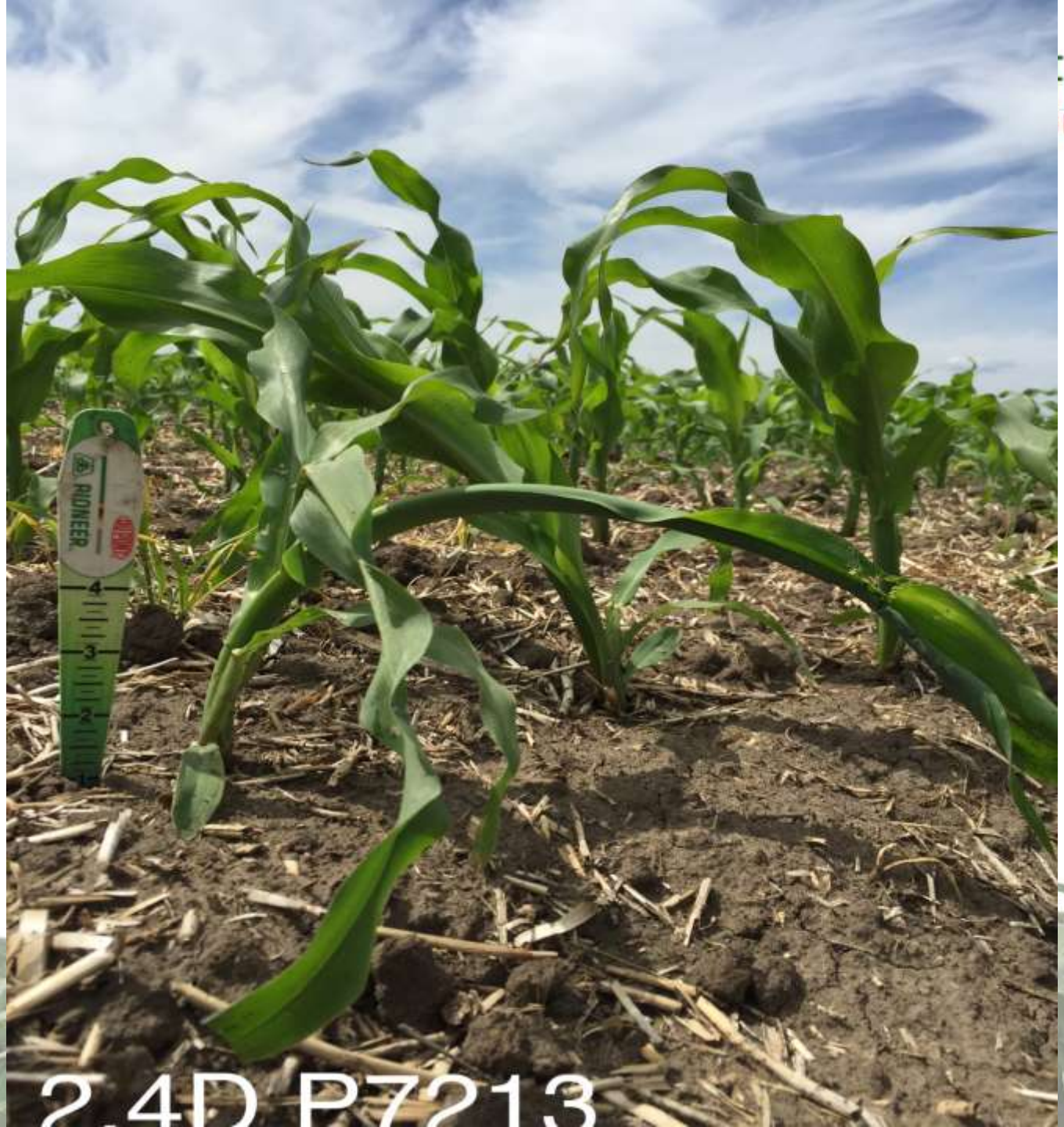

V2

Herbicide Timing effect on Corn Yield

- Weed competition in corn is most damaging early in the growing season.
- Corn yields are reduced when weeds are allowed to grow past 4”.
- Herbicide application needs to occur before weed canopy exceeds 4” for consistent weed control and maximum corn yield.



Weed Canopy Height At Herbicide Application



2,4D P7213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39V05
09/28/2012

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