
ALBERTA CORN COMMITTEE

2002 Corn Hybrid Trials

Trials were seeded at Brooks (2200 CHU), Bow Island (2400 CHU), Lethbridge (2100 CHU), and Vauxhall (2200 CHU). A randomized complete block design with four replicates was generated for each site. Plots consisted of two (2) - six metre rows for the silage trials and four (4) - six metre rows for the grain trials. Population densities were 60,000 plants/ha (24,000 plants/acre) for the irrigated grain tests, and 75,000 plants/ha (30,000 plants/acre) for the silage tests.

The weather for 2002 was certainly eventful with snow in June, periods of heavy rainfall, and a cool fall that delayed harvest. The corn heat units for this year were average, and in the case of Lethbridge and Vauxhall, above average. Water stress from flooding was experienced at Vauxhall, Brooks, and Bow Island, and Lethbridge endured a hailstorm in August. However, successful harvests were accomplished and data from all four sites was deemed acceptable.

Corn Heat Units, accumulated from 15MAY02 to the first kill frost (-2 degrees Celsius), were as follows: Lethbridge 2356 CHU, Vauxhall 2339 CHU, Brooks 2280 CHU, and Bow Island 2435 CHU.

Explanation of Variables

Harvest: grain yields were determined by harvesting all ears or cobs of the centre two rows in each four row plot. Silage yields were determined by harvesting all plants in the two row plot.

Yield: grain yield data, adjusted to 15.5 % moisture, is expressed as either g/plot or bu/ac. Silage yield is expressed as tonnes/ha or tonnes/ac on a dry matter basis. Expression of yield will vary depending on which table you are referencing. To convert tonnes/ac to tonnes/ha, multiply value by 2.471. Also, grams/plot in the grain data can be transformed to bu/ac by dividing value by 57.384. Bushels/acre is converted to kg/ha by multiplying value by the test weight (industry standard = 56 lbs/bushel) and dividing value by 0.892.

Grain moisture content: determination of grain moisture at all locations was calculated using a Dickey John GAC-II grain moisture computer.

Silage whole plant moisture content: determined by collecting a 300 g fresh weight of chopped material from the harvested plot which is dried down and weighed again to collect a dry weight.

Anthesis: first day of anther extrusion on at least 10% of the plants.

Silking: first day silks are visible on at least 50% of the plants.

Test Weight: expressed as kg/hl, determined by the GAC-II grain moisture computer at Vauxhall and Lethbridge. To convert to lb/bu multiply by 0.807. Test weights were adjusted to moisture at 15.5% using a method that adjusts for porosity changes.

Table a. 2002 Corn Hybrid Trial Co-operators

Location of test	Co-Operator	Supervising Agency
Lethbridge & Vauxhall	B. Beres	Agriculture & Agri-Food Canada
	Technical support:	
	A. Larson	
	R. Dyck	
	J. Michaelis	
	S. Kendrick	
	G. Larson	
Brooks & Bow Island	M. Bandera	AAFRD - Brooks
	Technical support:	
	A. Fox	
	J. Webber	
	D. Schuiling	
	R. Day	

Table b. 2002 Corn Hybrid Trials: soil profiles, seeding, and harvest dates

	Lethbridge	Vauxhall	Brooks	Bow Island
Soil Type	Loam	Sandy Loam	Silty Loam	Sandy
Soil Zone	Dark Brown	----- Brown -----		
Seeding Date	14 May	13 May	17 May	16 May
Harvest Date	Silage	Silage	Silage	Silage
	Sept 25	Sept 24	Sept 26	Sept 27
	Grain	Grain	Grain	Grain
	Nov. 7	Nov. 8	Nov. 6	Nov. 13

Table c. 2002 Corn Hybrid Trials - Crop management summary.

Location	Fertilizer Amendments	Pesticides Used	Irrigation Applied
<u>Lethbridge</u>			
Grain	Soil test: 184lb N, 120lb P *100 lbs 34-0-0 broadcast & disced preplant	Eradicane 8E (3.4L/Ac) Cocktail - Accent 10g/Ac Atrazine300ml/Ac, Banvel II 120 ml/Ac, Merge 325ml/Ac	4" Irrigation applied
Silage	Soil test: 184lb N, 120lb P *100 lbs 34-0-0 broadcast & disced preplant	Eradicane 8E (3.4L/Ac) Cocktail - Accent 10g/Ac Atrazine300ml/Ac, Banvel II 120 ml/Ac, Merge 325ml/Ac	4" Irrigation applied
<u>Vauxhall</u>			
	No Amendments required		
Grain	282 lbs avail N, 120 lbs avail P	Bladex (2L/Ac), Cocktail - Accent 10g/Ac Atrazine300ml/Ac, Banvel II 120 ml/Ac, Merge 325ml/Ac	8.5" Irrigation applied
Silage	640 lbs avail N, 120lbs avail P	Bladex (2L/Ac), Cocktail - Accent 10g/Ac Atrazine300ml/Ac, Banvel II 120 ml/Ac, Merge 325ml/Ac	8.5" Irrigation applied
<u>Bow Island</u>			
Grain	*500 lbs/Ac 34-17-0 broadcast/disc'd	Eradicane 8E (2L/Ac), Buctril M (400ml/Ac)	3.5" Irrigation applied
Silage	*500 lbs/Ac 34-17-0 broadcast/disc'd	Eradicane 8E (2L/Ac), Buctril M (400ml/Ac)	3.5" Irrigation applied
<u>Brooks</u>			
Grain	*500 lbs/Ac 34-17-0 broadcast/disc'd	Eradicane 8E (2L/Ac), Buctril M (400ml/Ac)	6.75" Irrigation applied
Silage	*500 lbs/Ac 34-17-0 broadcast/disc'd	Eradicane 8E (2L/Ac), Buctril M (400ml/Ac)	6.75" Irrigation applied