

Evaluation of Corn Hybrids in Massachusetts

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Corn hybrids submitted by contributing companies in 2002 were tested by the Department of Plant & Soil Sciences, University of Massachusetts. Hybrids were evaluated for yield of silage and earcorn, percentage ears, and moisture content. The trials were planted in the Connecticut River Valley at the UMass Agronomy Research Farm in South Deerfield, Massachusetts. The results are presented and have been incorporated into the long term results (3 or more years including one of the previous 3 years) of the testing program. Results of these trials are made available to farmers, extension agents, seed distributors, seed salesmen and others upon request. Tables should not be reproduced if any portion is omitted or if order of data is changed.

The trials were planted May 3, 2002. A cone type distributor mounted on a double disc opening corn planter was used in a conventionally prepared seed bed at each site. Each plot was planted at the rate of 32,000 seeds per acre in 30 inch rows. Plots were 25 feet long and 3 rows wide. Each hybrid was replicated four times. Weeds were controlled with a pre-emergence application of 1 quart atrazine (AAtrex 4L) plus 1 quart metolachlor (Dual 8E) per acre. Pre-plant fertilization was at the rate of 100 lbs N/acre. Plants were side dressed on June 30 with ammonium nitrate at the rate of 85 lb/acre of nitrogen.

In early stages of growth during the months of May and June weather conditions were cooler and wetter than normal conditions (Table 1). For example, May had 43 growing degree days below normal and 1.25 inches of rain above the norm. July and August had warmer than normal temperatures, and had less than normal rainfall. The month of September had 121 growing degree days above the norm. For the entire growing season of 2002, there were 214 growing degree days above the norm. However, the overall rainfall in 2002 was 0.83 inches below the norm, including a deficit of 2.65 inches during the critical months of July, August, and September.

The abnormally cool and wet start to the growing season, combined with an abnormally hot and dry end to the season, had an adverse effect on ear yield of the corn hybrids evaluated in this study. Dry conditions in the month of August may have had an adverse effect on the yield potential, since this period coincided with silking and pollination.

Corn plots were harvested when all entries were beyond the full dent stage. Harvest dates are shown at the top of each table of results. Ten feet of central row from each plot was taken for yield estimation. Silage yields were adjusted to 70% moisture and earcorn yields to 25% moisture. Moisture content is reported as a percentage of corn harvested as silage.

Table 1: Climate Data for 2002 in South Deerfield, MA

	<u>Growing Degree Days</u>		<u>Rainfall (inches)</u>	
	<u>2002</u>	<u>Norm</u>	<u>2002</u>	<u>Norm</u>
May	239	282	5.14	3.89
June	503	533	4.32	3.75
July	759	697	2.63	3.91
Aug.	744	638	3.47	4.10
Sept.	502	381	3.05	3.79
Total	2745	2531	18.61	19.44

Table 2: Average Corn Yield from University of Massachusetts South Deerfield Trials*

<u>Brand</u>	<u>Hybrid</u>	<u>No. of Years</u>	<u>Silage¹ T/ac</u>	<u>Earcorn² T/ac</u>
<u>AGWAY</u>	AG6191	4	30.2	6.1
	AG773	3	29.9	6.5
<u>MONSANTO</u>	DK567	3	28.4	6.7
	DKC61-24	3	28.1	5.5
<u>SEEDWAY</u>	E390L	6	28.8	6.2
	E624	4	32.4	7.5
	E774	4	33.6	6.7
	E409L	3	27.7	5.1
<u>SYNGENTA</u>	N58-D1	3	29.1	6.1
	N3030BT	4	26.6	6.1
<u>TA DOEBLER</u>	S707Q	3	29.9	5.6

¹Silage @ 70% moisture ²Earcorn @ 25% moisture

*Averages based on the number of years

Table 3: Early Hybrids - Harvested October 10, 2002

BRAND	HYBRID	Silage ¹ T/ac	Silage %Moist.	Earcorn ² T/ac	Earcorn %Moist.	Ears %
MONSANTO	DKC51-43	29.8	59	4.5	34	39
SEEDWAY	E538	29.1	56	4.5	34	39
SYNGENTA	N3030Bt	28.9	50	5.3	32	46
SEEDWAY	E390L	28.4	60	5.2	36	46
MONSANTO	DKC53-34(RR/YG)	26.0	61	4.8	33	46
SEEDWAY	E398	24.5	62	4.6	32	48
SYNGENTA	N35-R7	24.3	59	4.3	30	45
SEEDWAY	E409L	24.0	51	4.0	34	42
SEEDWAY	E475	22.0	56	3.8	36	43
Mean		26.3	57.2	4.6	34.0	43.5
LSD _{.05}		5.3	11.1	0.9	4.6	5.1
CV(%)		13.9	13.3	13.6	9.3	8.0

Table 4: Late Hybrids - Harvested October 10, 2002

BRAND	HYBRID	Silage ¹ T/ac	Silage %Moist.	Earcorn ² T/ac	Earcorn %Moist.	Ears %
SEEDWAY	E705	33.0	67	5.5	41	42
SYNGENTA	N58-D1	29.8	66	5.5	40	46
MONSANTO	RX730RR/YG	29.7	63	5.1	44	43
SYNGENTA	N51-Z7	29.3	67	5.5	36	47
SEEDWAY	E620RR	29.2	68	5.3	37	45
MONSANTO	DKC58-78(YG)	28.3	63	5.4	38	47
AGWAY	AG 6191	27.4	67	4.7	42	43
TA DOEBLER	649XRR	26.7	63	4.9	42	46
SEEDWAY	E695	26.5	63	4.5	42	42
MONSANTO	DKC61-24	26.5	63	4.6	40	43
TA DOEBLER	S707Q	26.3	64	4.6	40	46
AGWAY	AG 6001	25.9	66	5.1	41	49
SYNGENTA	N45-T5	25.6	63	5.3	30	53
MONSANTO	DKC59-08	25.3	63	4.9	38	48
TA DOEBLER	HC350	25.2	66	4.3	38	43
AGWAY	AG 6515	24.2	63	4.2	41	43
SEEDWAY	E709RR	23.6	59	3.7	42	40
TA DOEBLER	509X	23.0	63	4.3	33	49
MONSANTO	RX708YG	22.6	65	4.0	41	44
SEEDWAY	E731	22.5	66	4.1	43	45
Mean		26.5	64.0	4.8	39.0	45.0
LSD _{.05}		5.8	5.1	1.0	2.7	6.5
CV%		15.6	5.6	15.0	4.8	10.1