

## 2014 Massachusetts Corn Hybrid Evaluation

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Twenty five corn hybrids were evaluated for silage and grain yield in two separate locations at the University of Massachusetts Crops Research and Education Center, in South Deerfield, Massachusetts in 2014. Each hybrid was assigned to one of three groups based on relative maturity (RM) provided by the seed companies; Group I, early maturity group (RM 88-94 days), group II mid maturity group (RM 95-100 days), and group III, full season group (RM 101-114 days). All hybrids were planted on May 7, 2014. A cone type distributor mounted on a double disc opening corn planter was used in a conventionally prepared seed bed. Plots were planted at the rate of 37,000 seeds per acre in 30 inch rows. Weeds were controlled using glyphosate herbicide.

Plots consisted of 3 rows, 25 feet long, replicated 4 times. Silage and grain plots were in nearby fields at the same site. The site received 45 lb/acre of nitrogen and 40 lb/ acre of K<sub>2</sub>O fertilizer prior to planting, as recommended by an April soil test. No side-dress nitrogen was used.

Ten foot sections of the central rows were harvested by hand for evaluation of silage yield. Shorter- and mid-season hybrids were harvested on September 9, while full-season hybrids were harvested on September 25. Harvested hybrids were evaluated for silage and ear yield, percentage ears, and moisture content. Silage yield was adjusted to 70% moisture and earcorn yield to 25% moisture.

Plots allocated to grain yield evaluation will be harvested in November using a plot combine and results will be submitted in December.

Climate data for the evaluation site is presented in Table 1. Overall, in 2014 the corn crop experienced a favorable growing season. Temperature and rainfall were slightly above the norm for the experimental location.

**Table 1:** Climate data for 2014 in South Deerfield, MA.

	GDD <sup>1</sup>			Rainfall (inches)		
	2014	Norm <sup>2</sup>	Deviation	2014	Norm <sup>2</sup>	Deviation
May	259	226	33	3.53	3.60	-0.07
Jun	525	485	40	5.54	4.67	0.87
Jul	669	636	33	2.87	3.74	-0.87
Aug	565	593	-28	4.49	3.61	0.88
<b>Total</b>	<b>2018</b>	<b>1940</b>	<b>78</b>	<b>16.43</b>	<b>15.62</b>	<b>0.81</b>

<sup>1</sup> Growing Degree Days was calculated as:  $GDD = \sum(T_{max} + T_{min})/2 - 50^{\circ} F$

<sup>2</sup> Norm is based on average of 17 years, 1997-2013, at nearby Orange airport, Orange, MA

Comparisons of silage yields are given in Table 1. Hybrids are arranged within participant according to reported days to maturity. Summary of relationships between days to maturity and silage yields are shown in bold. Silage yield ranged from 22.1 ton/ac to 31.3 ton/ac, with days to maturity not a significant factor in the variation in silage yield. Earcorn, as measured separate from stover, yielded significantly more on the shorter-season hybrids than the mid-season hybrids. However, since the full-season hybrids yielded in between, it seems likely that the correlation is based on the specific hybrids

tested. Percent ears (weight of ears as a percent of total plant biomass) is sometimes given as an indicator of quality, with a higher ear percentage connoting a higher quality. The shorter- season hybrids had higher ear percentages than the mid- and full- season hybrids. Plant population is given as a matter of interest. Significant differences in plant population among hybrids were not observed.

Table 1. Silage corn yield 2014

Hybrid Number	Days to maturity	plants/ac . (000's) <sup>z</sup>	Silage ton/ac <sup>y</sup>	Earcorn ton/ac <sup>x</sup>	Pct Ears <sup>w</sup>		
1	93	37	27.1	7.0	64	DeKalb	DKC43-48RIB
2	94	32	25.5	6.4	62	DeKalb	DKC44-13RIB
3	96	30	26.0	6.6	63	DeKalb	DKC46-20RIB
4	97	32	23.5	5.2	58	DeKalb	DKC47-35RIB
5	100	35	23.8	5.5	57	DeKalb	DKC50-84RIB
6	102	31	24.4	5.4	54	DeKalb	DKC52-30RIB
7	104	32	27.6	6.8	61	DeKalb	DKC54-38RIB
8	107	31	25.7	6.2	60	DeKalb	DKC57-75RIB
9	107	31	27.2	6.1	56	DeKalb	DKC57-92RIB
10	110	35	28.8	6.7	57	DeKalb	DKC60-67RIB
11	111	33	29.2	6.5	55	DeKalb	DKC61-88RIB
12	112	34	28.2	6.4	57	DeKalb	DKC62-08RIB
14	97	32	24.9	6.0	55	TA Seeds	TA477-31
15	104	32	23.5	5.5	60	TA Seeds	TA544-28RIB
16	108	32	28.7	6.7	58	TA Seeds	TA583-22DPRIB
17	103	31	27.5	6.2	55	TA Seeds	TA683-13VPRIB
18	89	33	28.9	7.4	64	Doebler	Doebler® 328GRV
19	91	30	26.2	7.5	69	Doebler	RPM® 428AMX™
20	95	33	24.6	5.6	56	Doebler	Doebler® 455GRV
21	97	30	22.1	5.2	59	Doebler	RPM® 468AMX™
22	99	32	28.0	6.3	56	Doebler	RPM® 473HRQ™
23	103	27	29.7	6.5	54	Doebler	RPM® 537AMX™
24	105	28	31.3	7.4	59	Doebler	Doebler® 554GRQ
25	109	31	27.7	6.2	56	Doebler	RPM® 629AMXT™
26	113	34	25.8	5.3	51	Doebler	RPM® 5315AMXT™
LSD <sup>y</sup>			5.0	1.8	5.3		
<b>Short Season (&lt;95 days)</b>			<b>26.9 a<sup>u</sup></b>	<b>21.3 a</b>	<b>65 a</b>		
<b>Mid-Season (95-100 days)</b>			<b>24.7 a</b>	<b>17.2 b</b>	<b>58 b</b>		
<b>FullSeason (&gt;100 days)</b>			<b>27.5 a</b>	<b>18.9 ab</b>	<b>57 b</b>		

<sup>z</sup> Plots were seeded at 37,000 seeds per acre assuming 90% germination and survival to achieve density of 33,000 plants per acre.

<sup>y</sup> Silage yield is reported as US tons per acre of 70% moisture plant material at harvest .

<sup>x</sup> Earcorn is reported as US tons per acre of ears in the husk at 25% moisture.

<sup>w</sup> Percent ears is reported on a dry weight basis.

<sup>y</sup> LSD , least significant difference is the smallest difference between any two values in the above column which a difference is considered to be of statistical significance at odds of 19 in 20.

<sup>u</sup> Means in bold with the same letter within each column are not significantly different at  $P \leq 0.05$ .