FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID** 2494 **Year:** 2003

Personnel: J.G. Lauer, P. J. Flannery, and K. D. Kohn

Location: Arlington, WI **County:** Columbia

Supported By: HATCH

Site Information

Field: ARS412 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/03 **pH** 6.5 **OM (%)** 5.4 **P (ppm)** 112 **K (ppm)** 281

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/18/03

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	6-24-24	9 lbs/A	5 /3 /03
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Harness 2.5 pt/A
Hornet 3.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 5/3/03 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/17/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.275 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 27958 **plants per acre**

Factors/Treatments:

Hybrids:

Mycogen 2141
NK Brand N17R3
Carhart's Blue Top
CX8500A
Jung 6210
Dekalb DKC3947
Dekalb DKC4442
Pioneer 37R71
NK Brand N2555Bt
Pioneer 38T28
Dahlman 5102Bt
Cargill 4521Bt
Pioneer 35Y55
NK N58D1
Dekalb DKC5878
Jung 2710
Pioneer 33A14

Results: Table C-1 and C-2.

Table C-1. Determining Corn Hybrid Maturity - Comparison of Hybrids
Arlington, WI - 2003

								Grain Quality of Cleaned Sample					
Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Silking	Moisture	Test weight	Protein	Oil	Total Starch	Adjusted starch @15.5% moisture
		bu/A	%	lb/bu	%	$/A	doy	%	lb/bu	%	%	%	%
Mycogen 2141	81	121	17.9	61	0	238	204	4.6	60	10.7	5.0	61.0	68.9
NK N17R3	82	147	16.6	60	0	292	202	5.1	58	11.0	5.2	62.4	70.1
Carharts Blue Top CX8500A	85	173	17.7	58	0	340	207	4.4	58	10.7	4.5	62.4	70.6
Jung 6210	87	165	18.2	57	6	322	209	4.3	57	10.5	4.5	62.5	70.7
Dekalb DKC3947	89	171	18.5	58	1	333	206	3.6	57	8.2	5.1	63.1	71.9
Dekalb DKC4442	94	191	19.0	55	3	370	208	3.8	55	8.7	5.3	62.9	71.7
Pioneer 37R71	97	183	19.8	55	1	352	206	4.6	55	10.0	5.1	63.6	71.8
NK Brand N2555Bt	98	175	18.7	59	0	342	204	4.6	58	9.5	5.4	61.1	68.9
Pioneer 38T28	98	164	18.4	58	13	320	206	4.5	57	10.7	5.0	61.8	69.8
Dahlman 5102Bt	102	169	18.4	57	1	330	209	3.9	56	9.9	5.2	62.8	71.4
Cargill 4521Bt	104	162	18.8	56	13	313	211	3.9	56	10.5	5.4	61.3	69.8
Pioneer 35Y55	106	188	22.8	52	33	350	210	4.2	52	9.8	5.4	62.2	70.5
NK N58D1	107	193	24.6	54	12	352	210	4.2	56	9.3	4.4	64.3	72.9
Dekalb DKC5878	108	192	24.9	51	8	349	211	4.3	53	9.5	5.3	63.3	71.7
Jung 2710	112	191	25.7	53	9	344	210	4.0	55	9.0	5.2	62.7	71.3
Pioneer 33A14	113	174	28.8	54	15	303	212	4.1	56	8.9	4.7	64.7	73.4
Mean		172	20.6	56	7	328	208	4.2	56	9.8	5.0	62.6	71.0
Probability(%)													
Hybrid (H)		0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	9.3	16.6	11.2
LSD(0.10)													
Hybrid (H)		13	1.0	1	11	23	1	0.4	1	0.5	0.6	NS	NS
CV(%)		5	3	1	110	5	0	7	1	4	9	2	2

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids
Arlington, WI - 2003

Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			no./plant	no./plant	no./plant	inches
		150	1.7	2.9	4.0	4.9
		164	3.8	5.9	6.7	13.9
		176	6.9	9.5	11.3	40.8
		191	11.5	14.4	15.8	55.3
		203	16.5	16.9	17.9	96.0
		219	18.9	19.1	19.1	103.5
Mycogen 2141	81		9.9	11.3	12.2	47.1
NK N17R3	82		9.9	11.4	12.3	51.8
Carharts Blue Top CX8500A	85		9.2	11.3	12.0	52.7
Jung 6210	87		9.8	11.4	12.2	51.8
Dekalb DKC3947	89		10.3	11.6	12.7	51.8
Dekalb DKC4442	94		10.1	11.6	12.6	51.5
Pioneer 37R71	97		9.4	11.0	12.2	52.9
NK Brand N2555Bt	98		10.2	11.6	12.6	51.8
Pioneer 38T28	98		10.6	12.3	13.3	56.0
Dahlman 5102Bt	102		9.8	11.3	12.3	53.1
Cargill 4521Bt	104		10.1	11.8	12.9	55.3
Pioneer 35Y55	106		9.6	11.4	12.3	51.8
NK N58D1	107		10.0	11.8	12.7	51.8
Dekalb DKC5878	108		10.1	11.5	12.6	52.4
Jung 2710	112		9.7	11.2	12.2	54.5
Pioneer 33A14	113		9.4	11.0	12.1	51.7
Mycogen 2141	81	150	1.5	2.7	3.7	3.5
Mycogen 2141	81	164	3.3	5.3	6.3	8.6
Mycogen 2141	81	176	7.0	9.7	11.5	35.9
Mycogen 2141	81	191	12.0	14.7	16.2	55.2
Mycogen 2141	81	203	17.7	17.7	17.7	90.3
Mycogen 2141	81	219	17.7	17.7	17.7	89.0
NK N17R3	82	150	2.0	3.7	4.2	4.7
NK N17R3	82	164	4.0	6.5	7.5	13.8
NK N17R3	82	176	7.0	10.0	11.8	41.9
NK N17R3	82	191	12.2	13.8	15.5	59.5
NK N17R3	82	203	17.2	17.2	17.3	95.8
NK N17R3	82	219	17.3	17.3	17.3	95.2
Carharts Blue Top CX8500A	85	150	1.8	3.2	4.0	4.5
Carharts Blue Top CX8500A	85	164	4.0	6.0	6.3	13.8
Carharts Blue Top CX8500A	85	176	6.8	9.8	11.3	41.8
Carharts Blue Top CX8500A	85	191	11.3	14.3	15.3	56.2
Carharts Blue Top CX8500A	85	203	16.0	15.8	16.8	100.8
Carharts Blue Top CX8500A	85	219	15.3	18.3	18.3	99.0

continued

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids
(continued) **Arlington, WI - 2003**

Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			no./plant	no./plant	no./plant	inches
Jung 6210	87	150	2.0	3.0	4.0	5.2
Jung 6210	87	164	4.0	6.0	6.5	15.2
Jung 6210	87	176	7.0	9.7	10.8	40.2
Jung 6210	87	191	11.0	14.3	15.5	55.0
Jung 6210	87	203	16.0	16.5	17.5	96.3
Jung 6210	87	219	19.0	19.0	19.0	99.0
Dekalb DKC3947	89	150	1.7	2.7	4.0	4.6
Dekalb DKC3947	89	164	4.0	6.0	6.8	11.8
Dekalb DKC3947	89	176	7.2	9.3	11.5	39.8
Dekalb DKC3947	89	191	12.2	14.8	16.0	56.0
Dekalb DKC3947	89	203	17.5	17.7	18.5	95.7
Dekalb DKC3947	89	219	19.2	19.2	19.2	102.8
Dekalb DKC4442	94	150	1.7	3.0	4.0	4.7
Dekalb DKC4442	94	164	4.0	6.0	6.8	14.2
Dekalb DKC4442	94	176	7.0	9.7	11.7	42.9
Dekalb DKC4442	94	191	11.5	14.5	15.8	53.3
Dekalb DKC4442	94	203	16.8	16.8	17.8	94.5
Dekalb DKC4442	94	219	19.5	19.5	19.5	99.3
Pioneer 37R71	97	150	1.5	2.8	3.8	4.2
Pioneer 37R71	97	164	3.5	5.7	6.7	12.6
Pioneer 37R71	97	176	6.7	9.3	11.5	40.3
Pioneer 37R71	97	191	10.8	14.0	15.8	57.0
Pioneer 37R71	97	203	15.8	16.0	17.3	98.7
Pioneer 37R71	97	219	18.2	18.2	18.2	104.5
NK Brand N2555Bt	98	150	1.7	2.8	4.0	5.3
NK Brand N2555Bt	98	164	3.8	5.7	6.8	15.5
NK Brand N2555Bt	98	176	7.0	9.3	11.3	36.0
NK Brand N2555Bt	98	191	12.0	14.8	16.2	55.5
NK Brand N2555Bt	98	203	17.8	17.8	18.5	97.5
NK Brand N2555Bt	98	219	19.0	19.0	19.0	101.2
Pioneer 38T28	98	150	2.0	3.5	4.5	5.0
Pioneer 38T28	98	164	3.8	6.5	7.3	17.8
Pioneer 38T28	98	176	7.5	10.3	12.2	47.0
Pioneer 38T28	98	191	12.5	15.2	16.3	58.8
Pioneer 38T28	98	203	17.8	18.2	19.2	100.3
Pioneer 38T28	98	219	20.0	20.0	20.0	107.3
Dahlman 5102Bt	102	150	1.5	2.7	4.0	5.2
Dahlman 5102Bt	102	164	4.0	5.7	6.5	15.0
Dahlman 5102Bt	102	176	7.0	9.3	11.2	41.1
Dahlman 5102Bt	102	191	11.2	14.2	15.5	55.3
Dahlman 5102Bt	102	203	16.3	16.7	17.8	96.7
Dahlman 5102Bt	102	219	19.0	19.0	19.0	105.3
Cargill 4521Bt	104	150	1.5	2.7	4.0	4.9
Cargill 4521Bt	104	164	4.0	5.5	6.7	15.6
Cargill 4521Bt	104	176	7.2	9.8	11.5	41.9
Cargill 4521Bt	104	191	11.5	15.2	16.3	57.0
Cargill 4521Bt	104	203	16.5	17.5	18.7	100.5
Cargill 4521Bt	104	219	20.2	20.2	20.2	112.0

continued

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids
(continued) **Arlington, WI - 2003**

Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			no./plant	no./plant	no./plant	inches
Pioneer 35Y55	106	150	1.5	2.8	3.8	4.4
Pioneer 35Y55	106	164	3.7	5.7	6.3	12.6
Pioneer 35Y55	106	176	6.7	9.3	10.8	37.4
Pioneer 35Y55	106	191	10.8	14.3	15.5	53.8
Pioneer 35Y55	106	203	15.5	16.5	17.5	95.0
Pioneer 35Y55	106	219	19.5	19.5	19.5	107.7
NK N58D1	107	150	1.7	3.2	4.0	5.0
NK N58D1	107	164	3.7	5.7	6.7	11.4
NK N58D1	107	176	6.7	9.5	10.8	37.9
NK N58D1	107	191	11.5	14.8	16.2	51.3
NK N58D1	107	203	16.5	17.5	18.5	94.3
NK N58D1	107	219	20.2	20.2	20.2	111.2
Dekalb DKC5878	108	150	2.0	2.8	4.0	5.8
Dekalb DKC5878	108	164	3.8	6.2	7.0	15.1
Dekalb DKC5878	108	176	7.0	9.2	11.2	44.6
Dekalb DKC5878	108	191	11.2	13.8	15.7	53.3
Dekalb DKC5878	108	203	16.5	16.7	17.8	92.2
Dekalb DKC5878	108	219	20.2	20.2	20.2	103.2
Jung 2710	112	150	2.0	3.0	4.0	5.8
Jung 2710	112	164	4.0	6.0	6.8	16.3
Jung 2710	112	176	6.7	9.3	11.2	44.9
Jung 2710	112	191	11.0	14.2	15.3	55.5
Jung 2710	112	203	15.7	15.8	17.2	96.8
Jung 2710	112	219	18.8	18.8	18.8	107.5
Pioneer 33A14	113	150	1.5	2.7	4.0	5.1
Pioneer 33A14	113	164	3.5	5.5	6.3	12.4
Pioneer 33A14	113	176	6.7	8.8	10.7	39.7
Pioneer 33A14	113	191	10.7	13.5	14.8	51.7
Pioneer 33A14	113	203	15.0	16.3	17.7	89.8
Pioneer 33A14	113	219	19.3	19.3	19.3	111.5
Mean			9.9	11.5	12.5	52.4
Probability(%)						
Hybrid (H)			0.0	0.3	0.1	0.0
Day Of Year (D)			0.0	0.0	0.0	0.0
H x D			0.0	0.0	0.0	0.0
LSD(0.10)						
Hybrid (H)			0.4	0.4	0.4	1.7
Day Of Year (D)			0.2	0.2	0.1	1.0
H x D			0.9	0.6	0.5	3.8
CV(%)			7	4	3	5

FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID** 2495 **Year:** 2003

Personnel: J.G. Lauer, P.J. Flannery, and K.D. Kohn

Location: Hancock, WI **County:** Waushara

Supported By: HATCH

Site Information

Field: V18 **Previous Crop:** Soybean **Soil Type:** Plainfield Sand

Soil Test: **Date:** 10/15/03 **pH** 6.2 **OM (%)** 0.8 **P (ppm)** 112 **K (ppm)** 30

Plot Management

Tillage Operations: Moldboard Plow Disk

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	0-0-60	100 lbs/A	4 /3 /03
	Starter :	6-24-24	9 lbs/A	4 /24/03
	Post plant :	34-0-0	102 lbs/A (2x	6/16/03 & 6/20/03
	Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 0.75 lbs/A
Lasso 2.0 qt/A

Insecticide: None

Hybrid: See Factors

Irrigation: 19.6 Inches

Planting Date: 4/24/03 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/15/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.1375 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 28433 **plants per acre**

Factors/Treatments:

Hybrids:

Mycogen 2141
NK Brand N17R3
Carhart's Blue Top
CX8500A
Jung 6210
Dekalb DKC3947
Dekalb DKC4442
Pioneer 37R71
NK Brand N2555Bt
Pioneer 38T28
Dahlman 5102Bt
Cargill 4521B
Pioneer 35Y55
NK N58D1
Dekalb DKC5878
Jung 2710
Pioneer 33A14

Results: Table C-3.

Table C-3. Determining Corn Hybrid Maturity - Comparison of Hybrids
Hancock, WI - 2003

							Grain Quality of Cleaned Sample					
Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Sample moisture	Sample test weight	Protein	Oil	Total Starch	Adjusted starch @15.5% moisture
		bu/A	%	lb/bu	%	$/A	%	lb/bu	%	%	%	%
Mycogen 2141	81	154	20.1	60	3	296	4.0	61	9.5	4.0	65.5	74.4
NK N17R3	82	174	18.9	59	0	339	4.6	59	9.7	4.6	65.0	73.3
Carharts Blue Top CX8500A	85	199	18.9	58	2	387	4.3	59	10.1	4.5	64.5	73.0
Jung 6210	87	202	21.0	55	0	384	4.1	57	9.7	4.7	63.7	72.3
Dekalb DKC3947	89	212	19.9	57	0	407	4.2	57	8.4	4.4	66.5	75.4
Dekalb DKC4442	94	208	19.1	53	0	403	3.9	55	8.2	4.5	65.9	74.9
Pioneer 37R71	97	205	22.7	51	0	382	4.8	54	9.6	5.1	64.0	72.0
NK Brand N2555Bt	98	193	20.3	56	0	370	4.1	58	9.1	4.9	63.8	72.4
Pioneer 38T28	98	213	21.7	55	2	401	4.6	56	9.4	4.9	65.0	73.3
Dahlman 5102Bt	102	225	21.2	53	1	427	3.9	55	8.4	5.1	65.2	74.1
Cargill 4521Bt	104	228	22.6	53	1	427	4.4	55	9.3	5.4	64.2	72.7
Pioneer 35Y55	106	247	25.4	50	2	448	5.0	51	8.7	5.2	65.9	74.1
NK N58D1	107	237	26.6	51	4	425	4.4	54	8.4	4.4	65.7	74.3
Dekalb DKC5878	108	232	25.6	50	0	419	4.6	53	9.2	5.1	65.9	74.5
Jung 2710	112	235	27.4	51	2	417	4.9	53	7.9	4.9	66.7	75.0
Pioneer 33A14	113	230	29.2	52	3	400	4.3	55	8.3	4.8	65.7	74.4
Mean		212	22.6	54	1	395	4.4	56	9.0	4.8	65.2	73.7
Probability(%)												
Hybrid (H)		0.0	0.0	0.0	79.0	0.0	0.1	0.0	0.0	4.1	20.3	16.2
LSD(0.10)												
Hybrid (H)		17	0.7	1	NS	32	0.4	1	0.4	0.6	NS	NS
CV(%)		6	2	1	201	6	7	1	3	9	2	2

FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID** 2496 **Year:** 2003

Personnel: J.G. Lauer, P.J. Flannery, and K.D. Kohn

Location: Marshfield, WI **County:** Wood

Supported By: HATCH

Site Information

Field: 008-03C50 **Previous Crop:** Alfalfa **Soil Type:** Withee Silt Loam

Soil Test: **Date:** 10/6 /03 **pH** 6.5 **OM (%)** 3.4 **P (ppm)** 66 **K (ppm)** 109

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/19/03

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	6-24-24	9 lbs/A	5 /1 /03
	Post plant :	28-0-0	45 lbs/A	6 /19/03
	Manure:	Dairy	12872 gallons	Fall

Herbicide: Harness 1.8 pt/A
Hornet 2.4 oz/A
Atrazine 4L 1.1 qt/A

Insecticide: Force 4.4 lbs/A

Hybrid: See Factors

Irrigation:

Planting Date: 5/1/03 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/8/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.1375 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 17861 **plants per acre**

Factors/Treatments:

Hybrids:

Mycogen 2141
NK Brand N17R3
Carhart's Blue Top
CX8500A
Jung 6210
Dekalb DKC3947
Dekalb DKC4442
Pioneer 37R71
NK Brand N2555Bt
Pioneer 38T28
Dahlman 5102Bt
Cargill 4521B
Pioneer 35Y55
NK N58D1
Dekalb DKC5878
Jung 2710
Pioneer 33A14

Results: Table C-4.

Table C-4. Determining Corn Hybrid Maturity - Comparison of Hybrids
Marshfield, WI - 2003

								Grain Quality of Cleaned Sample					
Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Plant population	Sample moisture	Sample test weight	Protein	Oil	Total Starch	Adjusted starch @15.5% moisture
		bu/A	%	lb/bu	%	$/A	no./A	%	lb/bu	%	%	%	%
Mycogen 2141	81	53	29.7	52	0	92	7656	5.2	53	9.9	4.8	64.4	72.2
NK N17R3	82	125	28.5	53	0	219	17424	5.0	54	9.5	4.9	64.2	72.2
Carharts Blue Top CX8500A	85	157	27.2	52	0	278	24948	4.4	54	8.5	4.4	65.1	73.7
Jung 6210	87	137	33.6	51	0	226	24288	5.1	51	8.2	4.6	67.2	75.5
Dekalb DKC3947	89	117	31.0	50	0	200	15048	5.1	52	8.0	4.4	68.5	76.9
Dekalb DKC4442	94	146	33.0	50	0	242	19404	5.0	50	7.3	5.0	67.3	75.6
Pioneer 37R71	97	144	35.4	49	0	233	22176	5.3	50	8.1	4.7	67.8	76.0
NK Brand N2555Bt	98	120	32.3	51	0	201	10824	4.7	53	7.7	4.9	65.0	73.3
Pioneer 38T28	98	137	33.5	48	0	226	19404	5.8	50	8.4	4.8	67.3	75.0
Dahlman 5102Bt	102	114	39.0	49	0	176	18480	5.9	48	7.9	4.8	69.4	77.3
Cargill 4521Bt	104	114	39.0	48	0	175	15708	6.7	48	8.6	5.6	66.4	73.3
Pioneer 35Y55	106	143	42.7	47	0	210	21648	7.3	46	7.9	5.3	68.7	75.3
NK N58D1	107	103	43.1	48	0	150	16104	6.5	47	9.0	4.6	67.6	74.8
Dekalb DKC5878	108	129	42.8	47	0	189	24684	6.7	47	7.7	5.3	69.0	76.2
Jung 2710	112	113	42.6	46	0	165	15708	6.5	46	8.7	5.4	67.3	74.5
Pioneer 33A14	113	82	43.7	46	0	119	12276	6.6	46	8.1	4.7	68.4	75.6
Mean		121	36.1	49	0	194	17861	5.7	50	8.3	4.9	67.1	74.8
Probability(%)													
Hybrid (H)		0.0	0.0	0.0	66.9	0.0	0.0	16.2	0.0	0.0	0.9	0.0	0.1
LSD(0.10)													
Hybrid (H)		19	2.5	2	NS	33	3805	1.3	1	0.8	0.5	1.8	1.9
CV(%)		12	5	4	346	12	15	1	2	7	8	2	2