

## FIELD EXPERIMENT HISTORY

**Title:** Population and Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1443 **Year:** 1999  
**Personnel:** J.Lauer, P. Flannery, K. Kohn, R.G. Hermann and H. Darby  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** Hatch

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### Site Information

**Field:** 358 **Previous Crop:** Soybean **Soil Type:** Plano  
**Soil Test:** **Date:** N/A **pH** 6.8 **OM (%)** 3.1 **P (ppm)** 45 **K (ppm)** 240

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Soil Finisher 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 46-0-0 **Rate lbs/A:** 325 **Date:** 4 /23/99  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /10/99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Frontier @ 1.5 pt/A **Insecticide:** none  
Bladex @ 2.2 lb/A **Hybrid:** Cargill 4111  
**Irrigation:** none  
**Planting Date:** 5/10/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/18 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.37 A  
**Harvest Plot Size:** 20' x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Plant Spacing</u>	<u>Standard Deviation</u>
10000	5.5"	0.0"
20000	7.0"	1.0"
30000	11.0"	2.0"
40000	22.0"	3.0"

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**Results:** Table E-57.

**Table E-57. The Effects of Plant Density by Variability on Corn Yield  
Arlington, WI - 1999**

Population plants/A	Target		Actual		Yield bu/A	Moisture %	Lodging %	Test Weight lbs/bu	Grower Return † \$/A
	Standard Deviation inches	Target Spacing inches	Standard Deviation inches	Actual Spacing inches					
	0.0	7.0	3.0	11.4	169	23.5	0.9	54.4	\$419
	1.0	7.0	2.7	11.3	167	23.8	1.1	54.4	\$413
	2.0	7.0	3.2	11.2	172	23.7	1.2	54.1	\$425
	3.0	7.0	3.4	11.1	172	23.6	1.0	54.3	\$425
10000		22.0	3.9	21.4	128	26.4	0.4	53.4	\$311
20000		11.0	3.1	10.8	164	25.3	0.6	53.5	\$402
30000		7.0	2.8	7.0	190	21.9	1.3	54.5	\$476
40000		5.5	2.5	5.8	197	21.1	1.8	55.8	\$494
10000	0.0	22.0	4.0	21.4	128	25.5	0.4	54.1	\$313
10000	1.0	22.0	3.6	21.9	130	26.8	0.0	53.1	\$314
10000	2.0	22.0	4.2	21.3	122	27.6	0.4	52.8	\$294
10000	3.0	22.0	3.9	21.0	132	25.6	0.8	53.5	\$322
20000	0.0	11.0	2.9	11.1	164	25.1	0.0	53.1	\$403
20000	1.0	11.0	2.6	10.8	160	26.0	0.6	53.9	\$389
20000	2.0	11.0	3.4	10.7	172	24.8	0.6	53.4	\$423
20000	3.0	11.0	3.5	10.6	160	25.1	1.2	53.7	\$391
30000	0.0	7.0	2.5	7.2	191	22.3	0.8	54.6	\$475
30000	1.0	7.0	2.3	6.8	187	21.3	2.0	54.6	\$467
30000	2.0	7.0	2.9	7.1	189	21.2	1.1	54.4	\$474
30000	3.0	7.0	3.4	7.0	196	22.8	1.3	54.4	\$486
40000	0.0	5.5	2.7	5.9	193	21.2	2.4	55.6	\$485
40000	1.0	5.5	2.2	5.8	191	21.0	1.6	56.0	\$480
40000	2.0	5.5	2.5	5.8	204	21.4	2.6	55.9	\$511
40000	3.0	5.5	2.6	5.9	199	20.9	0.8	55.5	\$501
Mean			3.1	11.3	170	23.7	1.0	54.3	\$421
<b>Probability(%)</b>									
Population (P)			0.0	0.0	0.0	0.0	0.0	0.2	0.0
Standard Deviation (S)			5.7	32.4	18.5	85.1	69.8	91.5	19.1
P x S			91.2	41.6	6.1	4.8	17.0	21.7	7.0
<b>LSD(0.10)</b>									
Population (P)			0.4	0.3	4.3	0.7	0.4	0.7	11.0
Standard Deviation (S)			0.4	NS	NS	NS	NS	NS	NS
P x S			NS	NS	8.6	1.3	NS	NS	22.0
<b>CV(%)</b>									
			24	4	4	5	1	107	4

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1434 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** 358 **Previous Crop:** Soybean **Soil Type:** Plano  
**Soil Test:** **Date:** N/A **pH** 6.8 **OM (%)** 3.1 **P (ppm)** 45 **K (ppm)** 240

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Soil Finisher 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 46-0-0 **Rate lbs/A:** 325 **Date:** 4 /23/99  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /10/99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Frontier @ 1.5 pt/A **Insecticide:** None  
Bladex @ 2.2 lb/A **Hybrid:** Pioneer 35R57  
**Irrigation:** none  
**Planting Date:** 5/10/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/18/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-58.**

**Table E-58. Plant Spacing Effects on Corn Yield  
Arlington, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.0	2.2	238	26.5	54.3	0.0	\$578
2	30000	7.0	1.0	7.0	2.4	240	26.9	54.0	0.0	\$582
3	30000	7.0	2.0	6.9	3.0	243	26.4	54.7	0.0	\$591
4	30000	7.0	3.0	7.0	2.9	239	26.7	54.5	0.0	\$580
5	30000	7.0	4.0	7.0	3.4	245	26.3	54.0	0.0	\$595
6	30000	7.0	5.0	6.9	3.7	245	25.6	54.1	0.0	\$597
7	15000	14.0	0.0	14.0	2.2	164	26.7	53.3	0.0	\$399
8	15000	14.0	4.0	13.8	5.3	167	26.5	53.0	0.0	\$405
9	15000	14.0	8.0	13.6	6.8	170	25.6	53.9	0.0	\$415
10	15000	14.0	12.0	13.7	10.4	174	26.6	52.8	0.0	\$421
Mean				9.7	4.2	212	26.4	53.9	0.0	\$516
<b>Probability(%)</b>										
Treatment (T)				0.0	0.0	0.0	32.7	0.0	.	0.0
<b>LSD(0.10)</b>										
Treatment (T)				0.2	1.4	11	NS	0.5	.	26
<b>CV(%)</b>										
				1	24	4	3	1	.	4

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16 Variability **Trial ID** 1436 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Chippewa Falls, WI **County:** Chippewa  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** Sattre  
**Soil Test:** **Date:** N/A **pH** 5.9 **OM (%)** 3.1 **P (ppm)** 140 **K (ppm)** 150

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Field Cultivated 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 28-0-0 **Rate lbs/A:** 112 lbs/A **Date:**  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 4 /28/99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Harness @ 1.6pt/A **Insecticide:** None  
Hornet @ 2.4 oz/A **Hybrid:** Novartis N3030BT  
**Irrigation:** none  
**Planting Date:** 4/28/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 9/28/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-59.**

**Table E-59. Plant Spacing Effects on Corn Yield  
Chippewa Falls, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.3	2.5	180	20.3	55.1	0.4	\$454
2	30000	7.0	1.0	7.0	2.4	185	21.2	55.9	0.0	\$463
3	30000	7.0	2.0	7.2	2.7	183	20.8	55.0	0.0	\$461
4	30000	7.0	3.0	7.1	3.3	188	21.7	54.8	0.0	\$469
5	30000	7.0	4.0	6.9	3.5	188	20.3	56.2	0.4	\$473
6	30000	7.0	5.0	7.0	3.9	187	21.1	55.3	0.0	\$469
7	15000	14.0	0.0	13.4	3.6	147	23.4	54.1	0.0	\$364
8	15000	14.0	4.0	13.7	4.3	152	24.0	54.4	0.0	\$374
9	15000	14.0	8.0	13.1	7.8	158	23.1	54.6	0.0	\$391
10	15000	14.0	12.0	12.8	10.0	154	22.5	54.2	0.0	\$384
Mean				9.6	4.4	172	21.8	55.0	0.1	\$430
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.1	4.3	13.0	58.9	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.5	0.8	18	2.0	NS	NS	43
<b><u>CV(%)</u></b>										
				4	12	7	7	2	379	7

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16 Variability **Trial ID** 1438 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Fond du Lac, WI **County:** Fond du Lac  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** Cooperator **Previous Crop:** Soybean **Soil Type:** Virgil silt loam  
**Soil Test:** **Date:** N/A **pH** 6.5 **OM (%)** 3.2 **P (ppm)** 33 **K (ppm)** 100

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Field Cultivator 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 82-0-0 **Rate lbs/A:** 220 **Date:** N/A  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /4 /99  
**Post plant Analysis:** None **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Accent Gold 2.9 oz/A **Insecticide:** None  
**Irrigation:** None **Hybrid:** Cargill 4111  
**Planting Date:** 5/4/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/16/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-60.**

**Table E-60. Plant Spacing Effects on Corn Yield  
Fond du Lac, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Target Spacing	Standard Deviation	Actual Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.8	3.1	217	22.2	56.6	0.0	\$540
2	30000	7.0	1.0	7.5	3.1	223	21.9	57.2	1.0	\$558
3	30000	7.0	2.0	7.0	2.7	237	20.3	58.6	0.9	\$599
4	30000	7.0	3.0	7.5	3.7	231	21.5	57.8	0.0	\$578
5	30000	7.0	4.0	7.4	4.3	229	21.9	57.6	0.0	\$571
6	30000	7.0	5.0	6.9	3.8	233	21.5	57.5	0.4	\$582
7	15000	14.0	0.0	13.4	4.4	171	22.9	56.7	0.0	\$424
8	15000	14.0	4.0	13.0	4.9	183	22.6	57.0	1.6	\$454
9	15000	14.0	8.0	12.7	8.2	179	23.8	56.1	0.0	\$441
10	15000	14.0	12.0	13.0	9.6	180	23.0	56.8	0.0	\$445
Mean				9.6	4.8	207	22.2	57.1	0.4	\$516
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	16.3	8.2	4.9	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.8	0.8	8	NS	1.1	0.9	21
<b><u>CV(%)</u></b>										
				6	12	3	6	1	164	3

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).



## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1439 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Galesville, WI **County:** Trempealeau  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** Downs  
**Soil Test:** **Date:** N/A **pH** 6.3 **OM (%)** 3.8 **P (ppm)** 49 **K (ppm)** 310

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### Plot Management

**Tillage Operations:** Fall Zone

**Fertilizer:** **Preplant Analysis:** 28-0-0 **Rate lbs/A:** 160 **Date:**  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 4 /28/99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None

**Herbicide:** Dual @ 3 pt/A **Insecticide:** None  
Clarity @ 1 pt/A **Hybrid:** Cargill 4111

**Irrigation:** No

**Planting Date:** 4/26/97 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/16/97 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results:** Table E-61.

**Table E-61. Plant Spacing Effects on Corn Yield  
Galesville, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.0	2.5	187	18.0	59.1	17.2	\$477
2	30000	7.0	1.0	7.0	3.7	186	17.6	59.2	7.9	\$478
3	30000	7.0	2.0	7.0	3.5	186	18.0	58.9	9.3	\$475
4	30000	7.0	3.0	7.0	3.5	182	17.6	59.2	14.5	\$467
5	30000	7.0	4.0	7.0	3.6	191	18.3	59.1	10.5	\$487
6	30000	7.0	5.0	6.9	4.1	189	17.6	58.9	15.2	\$483
7	15000	14.0	0.0	13.7	3.7	129	18.0	58.9	5.3	\$329
8	15000	14.0	4.0	13.1	5.2	143	17.9	58.5	0.9	\$366
9	15000	14.0	8.0	13.4	8.2	130	17.7	58.3	1.7	\$333
10	15000	14.0	12.0	12.8	10.3	124	17.7	58.3	4.9	\$317
Mean				9.5	4.8	165	17.8	58.8	8.7	\$421
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	75.8	11.3	2.0	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.6	0.7	13	NS	NS	8.0	35
<b><u>CV(%)</u></b>										
				5	10	6	3	1	64	6

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1437 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Hancock, WI **County:** Waushara  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** V-18 **Previous Crop:** Peas **Soil Type:** Plainfield  
**Soil Test:** **Date:** N/A **pH** 6.2 **OM (%)** 0.7 **P (ppm)** 105 **K (ppm)** 83

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### Plot Management

**Tillage Operations:** Moldboard

**Fertilizer:** **Preplant Analysis:** 0-0-60 **Rate lbs/A:** 100 **Date:** 4 /6 /99  
**Starter Analysis:** 5-10-30 **Rate lbs/A:** 200 **Date:** 4 /27/99  
**Post plant Analysis:** 34-0-0 **Rate lbs/A:** 300 **Date:**  
**Manure:** None

**Herbicide:** Aatrex 4L .75qt/a, Micro-Tech 2.0qt/a, **Insecticide:** None  
Lasso 2.0qt/a **Hybrid:** Cargill 4111

**Irrigation:** Yes

**Planting Date:** 4/27/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/30/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results:** Table E-62.

**Table E-62. Plant Spacing Effects on Corn Yield  
Hancock, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.1	2.3	211	22.9	56.5	0.9	\$524
2	30000	7.0	1.0	6.9	2.7	209	21.6	57.4	0.0	\$523
3	30000	7.0	2.0	6.9	2.5	211	22.3	57.4	0.0	\$527
4	30000	7.0	3.0	7.1	3.6	212	21.8	57.8	0.4	\$529
5	30000	7.0	4.0	7.2	3.4	210	22.3	57.2	0.4	\$523
6	30000	7.0	5.0	6.9	3.3	220	22.1	57.5	0.9	\$548
7	15000	14.0	0.0	13.4	3.3	160	26.1	55.5	0.0	\$388
8	15000	14.0	4.0	13.6	5.0	160	26.9	55.0	0.0	\$387
9	15000	14.0	8.0	13.6	8.5	156	25.6	56.1	1.7	\$380
10	15000	14.0	12.0	13.3	10.3	157	25.7	56.2	0.0	\$383
Mean				9.6	4.5	190	23.8	56.7	0.4	\$470
<b>Probability(%)</b>										
Treatment (T)				0.0	0.0	0.0	0.0	0.0	66.7	0.0
<b>LSD(0.10)</b>										
Treatment (T)				0.3	0.5	10	1.4	0.8	1.6	24
<b>CV(%)</b>										
				2	8	4	4	1	264	4

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1435 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Janesville, WI **County:** Rock  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** R-5D **Previous Crop:** Soybean **Soil Type:** Plano  
**Soil Test:** **Date:** N/A **pH** 6.6 **OM (%)** 3.4 **P (ppm)** 74 **K (ppm)** 215

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Field Cultivator 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 28-0-0 **Rate lbs/A:** 160 A **Date:** 4 /25/99  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 4 /30/99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Harness @ 2.75pt/A **Insecticide:** None  
Hornet @ 4.5 oz/A **Hybrid:** Pioneer 35R57  
**Irrigation:** none  
**Planting Date:** 4/30/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/8/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-63.**

**Table E-63. Plant Spacing Effects on Corn Yield  
Janesville, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.1	2.4	235	20.8	58.5	0.0	\$591
2	30000	7.0	1.0	7.0	2.5	236	21.0	58.7	0.9	\$593
3	30000	7.0	2.0	6.9	2.7	245	20.9	58.5	0.4	\$616
4	30000	7.0	3.0	7.0	3.5	228	21.0	58.2	0.9	\$573
5	30000	7.0	4.0	7.0	3.3	240	21.1	58.1	0.9	\$601
6	30000	7.0	5.0	6.9	3.8	247	20.9	58.2	0.0	\$621
7	15000	14.0	0.0	14.0	3.0	170	21.8	56.8	0.9	\$425
8	15000	14.0	4.0	13.3	5.0	166	21.4	56.9	0.0	\$416
9	15000	14.0	8.0	13.5	7.9	180	22.5	56.4	0.0	\$449
10	15000	14.0	12.0	13.5	12.3	170	21.2	56.9	0.0	\$427
Mean				9.6	4.7	212	21.3	57.7	0.4	\$531
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	16.3	0.0	72.0	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.5	1.5	15	NS	0.7	NS	39
<b><u>CV(%)</u></b>										
				1	22	5	3	1	233	5

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1433 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Lancaster, WI **County:** Grant  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** R1-B **Previous Crop:** Corn **Soil Type:** Fayette silt loam  
**Soil Test:** **Date:** N/A **pH** 7.0 **OM (%)** 2.7 **P (ppm)** 65 **K (ppm)** 165

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Soil Finisher 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** 82-0-0 **Rate lbs/A:** 180 A **Date:** 4 /28/99  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /3 /99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** None  
**Herbicide:** Aatrex 4L @ .5qt/A **Insecticide:** Lorsban 7lbs/A  
Buctril @ 1.5 pt/A **Hybrid:** Pioneer 35R57  
**Irrigation:** none  
**Planting Date:** 5/3/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/5/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-64.**

**Table E-64. Plant Spacing Effects on Corn Yield  
Lancaster, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.2	3.1	177	21.1	55.1	3.2	\$445
2	30000	7.0	1.0	7.1	2.9	196	21.8	54.8	3.1	\$489
3	30000	7.0	2.0	7.1	3.5	199	20.8	55.3	1.4	\$501
4	30000	7.0	3.0	7.1	3.5	198	20.8	54.9	3.6	\$498
5	30000	7.0	4.0	7.1	4.0	187	21.2	55.3	1.8	\$470
6	30000	7.0	5.0	6.9	4.2	202	21.4	55.2	0.4	\$506
7	15000	14.0	0.0	14.6	4.3	143	22.0	53.8	0.9	\$356
8	15000	14.0	4.0	14.0	5.1	144	21.4	54.0	0.9	\$360
9	15000	14.0	8.0	13.3	8.1	144	21.6	54.0	0.8	\$359
10	15000	14.0	12.0	13.3	10.2	141	21.0	54.6	0.0	\$354
Mean				9.8	4.9	171	21.3	54.7	1.6	\$429
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	78.3	22.8	39.4	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.4	1.1	14	NS	NS	NS	37
<b><u>CV(%)</u></b>										
				3	4	6	4	1	129	6

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).



## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1431 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Marshfield, WI **County:** Wood  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** 3 **Previous Crop:** Alfalfa **Soil Type:** Loyal silt loam  
**Soil Test:** **Date:** N/A **pH** 6.7 **OM (%)** 3 **P (ppm)** 53 **K (ppm)** 169

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### Plot Management

**Tillage Operations:** Moldboard Plow Field Cultivator 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /11/99  
**Post plant Analysis:** 33-0-0 **Rate lbs/A:** 136 **Date:** 5 /1 /99  
**Manure:** 30 Tons  
**Herbicide:** Harness @ 2pt/A **Insecticide:** None  
Hornet @ 4 oz/A **Hybrid:** Novartis N3030BT  
**Irrigation:** none  
**Planting Date:** 5/11/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/19/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-65.**

**Table E-65. Plant Spacing Effects on Corn Yield  
Marshfield, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.3	2.7	193	25.8	54.5	0.0	\$472
2	30000	7.0	1.0	7.0	3.2	189	26.1	54.4	0.0	\$459
3	30000	7.0	2.0	7.0	3.2	191	26.3	54.7	0.0	\$465
4	30000	7.0	3.0	7.0	3.1	199	25.7	55.0	0.0	\$484
5	30000	7.0	4.0	7.1	4.5	190	25.8	54.5	0.0	\$463
6	30000	7.0	5.0	6.9	4.5	193	25.8	54.5	0.0	\$471
7	15000	14.0	0.0	13.9	3.6	145	25.9	54.4	0.0	\$354
8	15000	14.0	4.0	13.4	5.1	148	25.6	54.5	0.0	\$360
9	15000	14.0	8.0	13.4	8.4	144	25.8	54.5	0.0	\$351
10	15000	14.0	12.0	13.7	10.4	132	27.1	53.7	0.0	\$318
Mean				9.7	4.9	172	26.0	54.5	0.0	\$420
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	36.7	21.7	.	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.5	0.8	12	NS	NS	.	30
<b><u>CV(%)</u></b>										
				4	12	5	3	1	.	5

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1430 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Seymour, WI **County:** Outagamie  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** clay loam  
**Soil Test:** **Date:** N/A **pH** 7.3 **OM (%)** 4 **P (ppm)** 22 **K (ppm)** 125

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### Plot Management

**Tillage Operations:** Fall Chisel Plow Soil Finisher 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /4 /99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** 9000 gal  
**Herbicide:** Northstar @ 4 oz/A **Insecticide:** None  
**Irrigation:** none **Hybrid:** Novartis N3030BT  
**Planting Date:** 5/3/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/12/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-66.**

**Table E-66. Plant Spacing Effects on Corn Yield  
Seymour, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.1	3.3	216	19.7	59.4	0.0	\$545
2	30000	7.0	1.0	7.0	2.6	222	20.0	59.4	0.0	\$561
3	30000	7.0	2.0	7.1	2.9	221	20.4	59.0	0.9	\$557
4	30000	7.0	3.0	7.3	3.8	217	20.8	58.8	0.0	\$544
5	30000	7.0	4.0	7.0	3.6	217	19.6	59.3	0.9	\$549
6	30000	7.0	5.0	6.8	3.8	211	19.2	59.9	0.8	\$536
7	15000	14.0	0.0	13.0	4.0	163	20.2	59.3	0.0	\$412
8	15000	14.0	4.0	13.2	5.5	157	19.9	59.2	0.0	\$396
9	15000	14.0	8.0	12.5	7.5	179	20.2	59.4	0.0	\$450
10	15000	14.0	12.0	12.8	9.6	158	20.6	58.3	0.0	\$398
Mean				9.4	4.7	196	20.1	59.2	0.3	\$495
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	42.6	58.7	51.2	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.3	0.6	11	NS	NS	NS	25
<b><u>CV(%)</u></b>										
				2	9	4	4	1	286	4

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).

## FIELD EXPERIMENT HISTORY

**Title:** Stand Variability Effects on Corn Yield  
**Experiment:** 16Variability **Trial ID** 1432 **Year:** 1999  
**Personnel:** J.G. Lauer, P. J. Flannery, K. D. Kohn, R.G. Hermann and H. Darby  
**Location:** Valders, WI **County:** Manitowoc  
**Supported By:** WI Corn Growers

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### Site Information

**Field:** **Previous Crop:** Alfalfa **Soil Type:** Kewanee clay loam  
**Soil Test:** **Date:** N/A **pH** 7.2 **OM (%)** 3 **P (ppm)** 49 **K (ppm)** 155

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### Plot Management

**Tillage Operations:** Moldboard Plow Field Cultivated 1 Cultivation  
**Fertilizer:** **Preplant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Starter Analysis:** 6-24-24 **Rate lbs/A:** 150 **Date:** 5 /3 /99  
**Post plant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A  
**Manure:** 12000 gal  
**Herbicide:** Accent @ .33 oz/A **Insecticide:** None  
Northstar @ 4 oz/A **Hybrid:** Novartis N3030BT  
**Irrigation:** none  
**Planting Date:** 5/3/99 **Planting Depth:** 1.5" **Row Width** 30"  
**Harvest Date:** 10/13/99 **Planting Method:** Kinze Plot Planter  
**Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 22'x10' **Experiment Size:** 0.17 A  
**Harvest Plot Size:** 22'x 5'

### Factors/Treatments:

<u>Population</u>	<u>Standard Deviation</u>	<u>Population</u>	<u>Standard Deviation</u>
30000	0.0"	15000	0.0"
30000	1.0"	15000	4.0"
30000	2.0"	15000	8.0"
30000	3.0"	15000	12.0"
30000	4.0"		
30000	5.0"		

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**Results: Table E-67.**

**Table E-67. Plant Spacing Effects on Corn Yield  
Valders, WI - 1999**

Treatment	Target		Actual		Yield	Moisture	Test		Grower Return †	
	Population	Spacing	Standard Deviation	Spacing			Standard Deviation	Weight		Lodging
	plants/A	inches	inches	inches	inches	bu/A	%	lbs/bu	%	\$/A
1	30000	7.0	0.0	7.1	2.5	219	18.9	57.9	0.0	\$558
2	30000	7.0	1.0	6.9	2.5	219	19.2	57.2	0.4	\$554
3	30000	7.0	2.0	6.9	2.9	216	19.7	57.1	0.0	\$547
4	30000	7.0	3.0	7.0	3.1	221	19.3	56.9	0.0	\$561
5	30000	7.0	4.0	7.0	3.7	221	18.8	57.6	0.0	\$561
6	30000	7.0	5.0	6.9	4.2	227	19.1	58.1	0.0	\$577
7	15000	14.0	0.0	13.9	3.1	165	19.0	57.7	0.0	\$420
8	15000	14.0	4.0	13.6	5.0	169	18.5	57.9	0.0	\$432
9	15000	14.0	8.0	13.1	8.6	165	18.9	58.3	0.0	\$418
10	15000	14.0	12.0	13.0	10.0	164	18.6	58.1	0.0	\$417
Mean				9.5	4.6	199	19.0	57.7	0.0	\$504
<b><u>Probability(%)</u></b>										
Treatment (T)				0.0	0.0	0.0	25.5	47.4	51.1	0.0
<b><u>LSD(0.10)</u></b>										
Treatment (T)				0.4	0.6	11	NS	NS	NS	29
<b><u>CV(%)</u></b>										
				3	9	4	3	547	2	4

† Grower Return = (\$2.65 x yield) - (yield x handling x hauling) - (yield x \$ 0.15 (mst - 15.5)).