

## FIELD EXPERIMENT HISTORY

**Title:** Corn and Soybean Rotation Study **Est.1983**  
**Experiment:** 09 Corn/Soybean Rotation **Trial ID:** 2916 **Year:** 2006  
**Personnel:** J. G. Lauer, J.M. Gaska, K. D. Kohn, J.H. Hopf  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** HATCH

### Site Information

**Field:** 334W **Previous Crop:** Corn/Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 4 /19/03 **pH** 6.42 **OM (%)** 3.6 **P (ppm)** 27 **K (ppm)** 172

### Plot Management

**Tillage Operations:** See Factors

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b>	<b>Preplant :</b> N/A	N/A	N/A
	<b>Starter :</b> N/A	N/A	N/A
	<b>Post plant :</b> 28-0-0	70 gpa	5/5/06
	34-0-0	150 lb/a	6/23/06
	<b>Manure:</b> N/A	N/A	
<b>Herbicide:</b>	2,4-D Ester 12 oz/a 4/26/06 No-Till Only	<b>Insecticide:</b>	Force 3G 4.4 lbs/A 4/27/06
	Dual II Mag 24 oz/a All Plots		Prozap 10 lb/a 4/27/06
	Mirage Plus 32 oz/a 6/13/06 All Plots		
<b>Irrigation:</b>	None	<b>Hybrid:</b>	See Factors
<b>Planting Date:</b>	Corn: 4/27/06 <b>Planting Depth:</b>	C: 1.5"	<b>Row Width:</b> 30"
	Soybean: 5/5/06	S: 1"	
<b>Target Plant Density:</b>	Corn: 32500	<b>Planting Method:</b>	Kinze 2000 Interplant planter
	Soybean: 150000	<b>Harvest Method:</b>	C: Kincaid plot combine
<b>Harvest Date:</b>	Corn: 10/24/06		S: Almaco plot combine #2
	Soybean: 10/8/06		

### Experimental Design

**Design:** RCB split-split plot **Replications:** 4  
**Plot Size Seeded:** 10' x35' **Experiment Size:** 2.7 acres  
**Harvest Plot Size:** Corn: 5' x 31'

#### **Factors/Treatments:**

##### Tillage:

No-Till  
Conventional

##### Rotation

Continuous Corn or Soybean  
Alternating Corn - Soybean  
Corn 5yrs. / Soybean 5 yrs.

##### Hybrids/Varieties:

C: DekalbDKC5141  
Dekalb DKC5020  
Pioneer P38H62  
S: Asgrow AG2107  
Pioneer 91M90  
Latham E2412RX

**Results: Table C-49 and C-50.**

**Table C-49. Corn/Soybean Rotation and Tillage Study - Corn.  
Arlington, WI - 2006.**

Tillage	Rotation	Insecticide	Test		Grower return \$/A	Lodged			Harvest plants/A	Grain Composition			Ethanol		
			Yield bu/A	Moisture %		Weight lbs/bu	Total %	Stalk %		Root %	Oil %	Starch %	Protein %	per bu gallons	per A gallons
		Force	224	19.9	54.6	665	9.0	6.7	2.3	31375	3.7	60.6	7.5	2.89	648
		Poncho	220	19.2	54.0	658	3.8	2.0	1.9	29325	3.7	60.7	7.4	2.90	638
		Prescribe	224	20.0	55.3	665	6.0	4.0	2.0	27875	3.7	60.6	7.5	2.89	647
	1st Year Corn		228	19.2	54.9	680	2.7	1.8	0.9	32250	3.6	60.6	7.4	2.90	660
	2nd Year Corn		221	19.8	55.3	657	8.1	5.2	2.9	29750	3.6	60.7	7.5	2.89	640
	3rd Year Corn		223	19.7	54.5	663	8.9	6.1	2.8	29292	3.7	60.6	7.4	2.90	646
	4th Year Corn		227	20.1	54.3	676	7.6	5.3	2.3	28500	3.7	60.5	7.5	2.89	658
	Continuous Corn		213	19.6	54.0	636	4.0	2.7	1.3	27833	3.7	60.7	7.5	2.89	617
	1st Year Corn	Force	228	19.0	55.4	680	2.4	1.6	0.8	38000	3.7	60.4	7.7	2.89	658
	1st Year Corn	Poncho	226	19.4	54.3	673	4.8	3.0	1.8	29625	3.7	60.8	7.3	2.90	655
	1st Year Corn	Prescribe	230	19.4	55.1	686	0.8	0.8	0.0	29125	3.6	60.8	7.3	2.90	668
	2nd Year Corn	Force	217	19.9	54.4	643	9.4	5.3	4.1	30875	3.6	60.7	7.4	2.90	629
	2nd Year Corn	Poncho	217	19.6	54.9	646	4.6	2.6	2.0	30250	3.6	60.7	7.5	2.89	626
	2nd Year Corn	Prescribe	231	19.8	56.8	684	10.4	7.7	2.7	28125	3.7	60.6	7.6	2.89	667
	3rd Year Corn	Force	227	20.1	54.6	673	15.0	11.2	3.8	29750	3.6	60.7	7.4	2.90	658
	3rd Year Corn	Poncho	221	19.2	54.1	661	2.8	0.8	2.1	29250	3.7	60.7	7.4	2.90	642
	3rd Year Corn	Prescribe	220	19.8	54.9	655	8.8	6.4	2.5	28875	3.7	60.5	7.5	2.89	637
	4th Year Corn	Force	226	20.6	54.4	668	10.2	9.3	0.8	29250	3.8	60.5	7.6	2.89	651
	4th Year Corn	Poncho	226	19.0	53.7	677	4.8	3.1	1.7	28625	3.8	60.6	7.4	2.90	656
	4th Year Corn	Prescribe	231	20.7	54.9	682	7.9	3.6	4.3	27625	3.6	60.6	7.5	2.89	666
	Continuous Corn	Force	221	19.8	54.3	658	7.8	6.1	1.8	29000	3.6	60.6	7.5	2.89	640
	Continuous Corn	Poncho	211	18.8	52.9	631	2.2	0.4	1.7	28875	3.7	60.8	7.4	2.89	610
	Continuous Corn	Prescribe	208	20.1	54.8	618	1.9	1.5	0.4	25625	3.7	60.7	7.5	2.89	602
Conv			215	20.6	53.8	636	9.8	7.8	2.0	30550	3.7	60.6	7.5	2.89	623
No-Till			230	18.7	55.4	689	2.7	0.7	2.0	28500	3.6	60.7	7.5	2.89	666
Conv		Force	216	20.9	53.7	637	14.3	12.3	2.0	33350	3.7	60.5	7.6	2.89	623
Conv		Poncho	213	19.8	53.6	634	5.3	3.3	2.0	29550	3.7	60.6	7.5	2.90	617
Conv		Prescribe	217	21.2	54.2	638	9.8	7.6	2.2	28750	3.7	60.6	7.4	2.89	629
No-Till		Force	233	18.9	55.6	695	3.7	1.1	2.6	29400	3.6	60.7	7.4	2.90	674
No-Till		Poncho	227	18.6	54.3	682	2.4	0.7	1.7	29100	3.7	60.7	7.4	2.90	658
No-Till		Prescribe	230	18.7	56.3	689	2.2	0.3	1.8	27000	3.6	60.6	7.5	2.89	665

(continued)

**Table C-49. Corn/Soybean Rotation and Tillage Study - Corn.**  
(continued) **Arlington, WI - 2006.**

Tillage	Rotation	Insecticide	Yield		Test Moisture	Grower return	Lodged			Harvest plants/A	Grain Composition			Ethanol	
			bu/A	%			lbs/bu	\$/A	Total %		Stalk %	Root %	Oil %	Starch %	Protein %
Conv	1st Year Corn		222	19.7	54.4	662	4.0	2.8	1.2	35417	3.6	60.6	7.5	2.90	644
No-Till	1st Year Corn		233	18.8	55.5	698	1.3	0.8	0.6	29083	3.6	60.7	7.4	2.90	677
Conv	2nd Year Corn		208	20.6	54.7	614	13.4	10.4	3.0	30083	3.6	60.6	7.5	2.89	601
No-Till	2nd Year Corn		235	18.9	55.9	701	2.8	0.0	2.8	29417	3.7	60.7	7.5	2.89	679
Conv	3rd Year Corn		219	20.8	53.7	646	14.1	11.6	2.6	29750	3.7	60.6	7.4	2.90	633
No-Till	3rd Year Corn		227	18.6	55.4	680	3.7	0.7	3.0	28833	3.6	60.6	7.5	2.90	658
Conv	4th Year Corn		212	21.5	53.0	625	12.1	10.1	2.0	28917	3.7	60.5	7.6	2.88	612
No-Till	4th Year Corn		243	18.7	55.7	727	3.1	0.6	2.5	28083	3.7	60.6	7.5	2.90	703
Conv	Continuous Corn		214	20.6	53.5	634	5.3	3.9	1.4	28583	3.8	60.6	7.4	2.90	621
No-Till	Continuous Corn		213	18.5	54.5	638	2.6	1.4	1.2	27083	3.6	60.7	7.5	2.89	614
Conv	1st Year Corn	Force	220	19.2	54.9	657	3.8	3.1	0.7	46500	3.7	60.3	7.7	2.89	636
Conv	1st Year Corn	Poncho	217	19.8	53.7	646	7.4	4.6	2.8	28750	3.6	60.6	7.4	2.90	629
Conv	1st Year Corn	Prescribe	230	20.2	54.6	681	0.8	0.8	0.0	31000	3.6	60.7	7.4	2.90	666
No-Till	1st Year Corn	Force	235	18.9	55.9	704	0.9	0.0	0.9	29500	3.6	60.4	7.6	2.89	680
No-Till	1st Year Corn	Poncho	234	18.9	54.8	701	2.3	1.5	0.8	30500	3.7	60.9	7.3	2.91	681
No-Till	1st Year Corn	Prescribe	230	18.6	55.7	690	0.8	0.8	0.0	27250	3.5	60.9	7.2	2.91	670
Conv	2nd Year Corn	Force	206	21.5	53.5	606	15.5	10.6	4.8	32000	3.6	60.6	7.4	2.89	596
Conv	2nd Year Corn	Poncho	208	19.9	55.3	617	6.9	5.2	1.7	29000	3.6	60.6	7.5	2.89	598
Conv	2nd Year Corn	Prescribe	212	20.5	55.5	619	17.9	15.3	2.6	29250	3.6	60.6	7.5	2.89	613
No-Till	2nd Year Corn	Force	232	18.4	55.5	692	3.4	0.0	3.4	29750	3.6	60.8	7.4	2.90	674
No-Till	2nd Year Corn	Poncho	227	19.2	54.4	676	2.3	0.0	2.3	31500	3.6	60.7	7.4	2.89	654
No-Till	2nd Year Corn	Prescribe	245	19.1	57.7	733	2.8	0.0	2.8	27000	3.7	60.6	7.6	2.88	707
Conv	3rd Year Corn	Force	219	21.1	53.7	645	22.0	20.4	1.6	30750	3.7	60.7	7.5	2.90	634
Conv	3rd Year Corn	Poncho	217	20.0	53.3	644	4.1	1.6	2.5	30500	3.7	60.7	7.4	2.90	629
Conv	3rd Year Corn	Prescribe	221	21.2	54.1	650	16.3	12.7	3.6	28000	3.8	60.5	7.4	2.89	637
No-Till	3rd Year Corn	Force	235	19.1	55.6	702	8.1	2.0	6.1	28750	3.6	60.7	7.4	2.90	683
No-Till	3rd Year Corn	Poncho	226	18.3	54.8	677	1.6	0.0	1.6	28000	3.6	60.7	7.5	2.90	654
No-Till	3rd Year Corn	Prescribe	220	18.5	55.8	660	1.4	0.0	1.4	29750	3.7	60.6	7.5	2.89	636
Conv	4th Year Corn	Force	212	22.0	53.0	622	18.7	17.8	0.9	29250	3.8	60.4	7.7	2.87	610
Conv	4th Year Corn	Poncho	212	19.7	52.6	633	6.7	5.2	1.5	29750	3.8	60.5	7.5	2.89	614
Conv	4th Year Corn	Prescribe	213	22.8	53.3	619	10.9	7.2	3.7	27750	3.6	60.5	7.5	2.88	613
No-Till	4th Year Corn	Force	239	19.2	55.7	713	1.7	0.8	0.8	29250	3.7	60.6	7.5	2.90	692
No-Till	4th Year Corn	Poncho	240	18.4	54.8	722	2.9	1.0	1.9	27500	3.7	60.6	7.4	2.90	697
No-Till	4th Year Corn	Prescribe	248	18.6	56.5	745	4.9	0.0	4.9	27500	3.6	60.6	7.5	2.89	719

(continued)

**Table C-49. Corn/Soybean Rotation and Tillage Study - Corn.**  
(continued) **Arlington, WI - 2006.**

Tillage	Rotation	Insecticide	Yield bu/A	Moisture %	Test Weight lbs/bu	Grower return \$/A	Lodged			Harvest plants/A	Grain Composition			Ethanol	
							Total %	Stalk %	Root %		Oil %	Starch %	Protein %	per bu gallons	per A gallons
Conv	Continuous Corn Force		221	20.6	53.5	654	11.5	9.7	1.8	28250	3.8	60.4	7.6	2.88	637
Conv	Continuous Corn Poncho		212	19.7	53.3	630	1.6	0.0	1.6	29750	3.6	60.7	7.5	2.90	614
Conv	Continuous Corn Prescribe		210	21.6	53.9	618	2.9	2.1	0.8	27750	3.9	60.8	7.3	2.91	611
No-Till	Continuous Corn Force		221	19.0	55.2	662	4.2	2.5	1.7	29750	3.5	60.9	7.3	2.90	642
No-Till	Continuous Corn Poncho		210	18.0	52.6	632	2.7	0.9	1.8	28000	3.7	60.8	7.4	2.88	606
No-Till	Continuous Corn Prescribe		207	18.7	55.7	619	0.9	0.9	0.0	23500	3.6	60.5	7.7	2.88	594
mean			223	19.7	54.6	662	6.3	4.2	2.0	29525	3.7	60.6	7.5	2.89	644
<b>Probability(%)</b>															
Tillage (T)			11.7	0.0	0.6	6.9	0.2	0.2	31.9	14.7	49.5	3.0	61.8	28.3	11.5
Rotation (R)			0.0	0.0	2.7	0.0	0.1	0.2	12.3	4.4	66.6	56.7	83.1	32.4	0.0
T x R			0.5	0.0	23.2	0.2	1.8	0.1	93.4	37.6	41.9	92.8	74.8	28.3	0.5
Insecticide (I)			1.6	0.8	0.1	3.3	0.8	0.5	86.8	0.5	85.1	45.7	60.8	65.7	1.6
T x I			49.6	4.6	19.2	62.6	1.7	0.7	72.5	34.1	96.9	63.5	45.9	29.6	39.5
R x I			1.6	1.1	16.0	1.3	2.2	6.8	2.9	41.8	39.5	33.4	47.3	73.9	1.5
T x R x I			73.5	8.2	77.7	62.2	34.4	34.0	17.4	13.3	55.4	63.6	67.6	78.1	79.6
<b>LSD(0.10)</b>															
Tillage (T)			NS	0.4	0.7	28	2.4	2.4	NS	NS	NS	0.1	NS	NS	NS
Rotation (R)			11	0.4	0.9	33	2.9	2.0	NS	2306	NS	NS	NS	NS	31
T x R			15	0.6	NS	46	4.0	3.0	NS	NS	NS	NS	NS	NS	43
Insecticide (I)			5	0.3	0.5	15	2.1	1.7	NS	1831	NS	NS	NS	NS	14
T x I			NS	0.4	NS	NS	3.0	2.8	NS	NS	NS	NS	NS	NS	NS
R x I			11	0.7	NS	33	4.7	4.4	2.1	NS	NS	NS	NS	NS	31
T x R x I			NS	1.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>CV(%)</b>															
			6	4	3	6	105	148	138	16	4	1	4	1	6

**Table C- 50. Corn/Soybean Rotation and Tillage Study - Soybean.  
Arlington, WI - 2006.**

Tillage	Rotation	Hybrid	Yield bu/A	Moisture %	Grower		Lodging 1 to 5	Seed Composition		Protein lbs/A	Oil lbs/A	Protein + Oil lbs/A
					return \$/A	Height inches		Protein %	Oil %			
		Asgrow AG2107	57.8	10.9	355	36.5	1	35.1	19.3	1219	669	1888
		Latham E2412R	54.4	11.9	334	42.7	2	36.1	17.2	1179	561	1740
		Pioneer 91M90	53.7	11.1	330	37.8	1	34.0	19.1	1098	615	1713
	1st Year SB		57.1	11.1	350	39.6	2	35.2	18.5	1207	632	1840
	2nd Year SB		53.1	11.4	326	38.4	1	35.0	18.6	1118	593	1711
	3rd Year SB		55.1	11.3	338	38.6	1	34.9	18.6	1155	616	1771
	4th Year SB		53.0	11.3	325	38.8	1	35.0	18.5	1112	590	1702
	5th Year SB		62.2	11.6	382	40.9	1	35.5	18.3	1323	684	2007
	Cont. SB		52.9	11.3	325	37.7	1	35.3	18.4	1121	585	1706
	SB/C		53.9	11.2	331	39.0	2	34.7	18.7	1121	605	1726
	1st Year SB	Asgrow AG2107	59.7	10.7	367	36.8	1	35.2	19.3	1261	690	1951
	1st Year SB	Latham E2412R	56.2	11.6	345	43.4	2	36.4	17.2	1227	580	1806
	1st Year SB	Pioneer 91M90	55.3	10.9	340	38.8	1	34.2	18.9	1135	627	1762
	2nd Year SB	Asgrow AG2107	54.9	11.1	337	35.9	1	35.2	19.3	1158	636	1794
	2nd Year SB	Latham E2412R	55.1	12.0	338	42.5	2	36.0	17.3	1190	573	1762
	2nd Year SB	Pioneer 91M90	49.4	11.2	303	36.9	1	33.9	19.3	1006	571	1577
	3rd Year SB	Asgrow AG2107	58.0	11.0	356	36.1	1	34.9	19.4	1215	675	1889
	3rd Year SB	Latham E2412R	53.8	11.8	330	42.0	2	36.2	17.2	1168	554	1722
	3rd Year SB	Pioneer 91M90	53.5	11.2	329	37.8	1	33.7	19.3	1081	619	1701
	4th Year SB	Asgrow AG2107	56.8	10.8	349	35.3	1	35.1	19.3	1196	658	1855
	4th Year SB	Latham E2412R	51.4	11.9	316	43.0	2	35.9	17.2	1106	531	1637
	4th Year SB	Pioneer 91M90	50.7	11.2	312	38.0	2	34.0	19.0	1034	580	1614
	5th Year SB	Asgrow AG2107	64.2	10.8	394	39.4	1	35.4	19.1	1365	734	2099
	5th Year SB	Latham E2412R	60.6	12.9	372	44.3	2	36.5	16.9	1325	615	1940
	5th Year SB	Pioneer 91M90	61.7	11.1	379	39.0	1	34.5	18.9	1280	701	1981
	Cont. SB	Asgrow AG2107	55.3	11.0	340	35.0	1	35.3	19.3	1173	639	1812
	Cont. SB	Latham E2412R	52.2	11.7	320	41.4	2	36.4	17.1	1141	535	1676
	Cont. SB	Pioneer 91M90	51.1	11.2	314	36.6	1	34.1	19.0	1048	583	1630
	SB/C	Asgrow AG2107	55.9	11.1	343	37.1	1	34.8	19.3	1167	648	1814
	SB/C	Latham E2412R	51.5	11.8	316	42.3	2	35.4	17.5	1095	542	1637
	SB/C	Pioneer 91M90	54.2	10.8	333	37.6	1	33.9	19.2	1101	625	1727
Conv			56.9	11.2	349	38.5	1	35.2	18.5	1203	631	1834
No-Till			53.8	11.4	330	39.5	1	34.9	18.6	1128	599	1727
Conv		Asgrow AG2107	59.3	10.8	364	36.4	1	35.2	19.2	1252	684	1937
Conv		Latham E2412R	55.5	11.9	341	42.0	2	36.3	17.1	1209	570	1779
Conv		Pioneer 91M90	55.8	11.0	343	37.0	1	34.2	19.0	1148	638	1785

(continued)

**Table C- 50. Corn/Soybean Rotation and Tillage Study - Soybean.**  
 (continued) **Arlington, WI - 2006.**

Tillage	Rotation	Insecticide	Yield bu/A	Moisture %	Grower return \$/A	Height inches	Lodging 1 to 5	Seed Composition		Protein lbs/A	Oil lbs/A	Protein + Oil lbs/A
								Protein %	Oil %			
No-Till		Asgrow AG2107	56.3	11.0	346	36.6	1	35.1	19.3	1186	653	1839
No-Till		Latham E2412R	53.3	12.0	327	43.4	2	35.9	17.3	1149	552	1701
No-Till		Pioneer 91M90	51.6	11.2	317	38.6	1	33.8	19.1	1048	593	1641
Conv	1st Year SB		60.9	11.0	374	40.3	2	35.4	18.4	1292	673	1964
Conv	2nd Year SB		54.0	11.2	332	37.8	1	35.3	18.5	1146	600	1746
Conv	3rd Year SB		56.6	11.4	347	38.4	2	35.2	18.5	1192	629	1821
Conv	4th Year SB		53.8	11.2	330	38.2	2	34.9	18.6	1125	600	1725
Conv	5th Year SB		65.3	11.7	401	40.0	1	35.5	18.2	1393	715	2108
Conv	Cont. SB		54.1	11.2	332	37.0	1	35.9	18.2	1164	592	1757
Conv	SB/C		53.6	11.0	329	37.8	2	34.5	18.8	1106	606	1713
No-Till	1st Year SB		53.2	11.2	327	39.0	2	35.1	18.5	1123	592	1715
No-Till	2nd Year SB		52.2	11.6	321	39.0	1	34.7	18.7	1090	587	1676
No-Till	3rd Year SB		53.6	11.3	329	38.8	1	34.7	18.7	1117	603	1720
No-Till	4th Year SB		52.2	11.4	321	39.3	1	35.1	18.5	1099	579	1678
No-Till	5th Year SB		59.0	11.5	362	41.8	2	35.4	18.4	1253	652	1905
No-Till	Cont. SB		51.7	11.3	317	38.3	1	34.7	18.6	1077	578	1655
No-Till	SB/C		54.2	11.5	333	40.3	2	34.9	18.5	1136	604	1740
Conv	1st Year SB	Asgrow AG2107	65.5	10.6	402	37.5	1	35.1	19.3	1380	757	2137
Conv	1st Year SB	Latham E2412R	58.5	11.6	359	44.0	2	36.5	17.1	1282	598	1880
Conv	1st Year SB	Pioneer 91M90	58.8	10.8	361	39.3	1	34.4	18.8	1214	663	1877
Conv	2nd Year SB	Asgrow AG2107	55.5	11.0	341	35.3	1	35.4	19.3	1178	643	1820
Conv	2nd Year SB	Latham E2412R	55.8	11.7	343	42.8	1	36.3	17.2	1213	576	1789
Conv	2nd Year SB	Pioneer 91M90	50.8	11.0	312	35.5	1	34.4	19.1	1047	582	1629
Conv	3rd Year SB	Asgrow AG2107	59.5	11.0	365	36.0	1	35.0	19.4	1249	690	1939
Conv	3rd Year SB	Latham E2412R	54.5	11.9	334	41.5	2	36.5	17.0	1194	555	1748
Conv	3rd Year SB	Pioneer 91M90	55.7	11.2	342	37.8	2	33.9	19.2	1134	642	1776
Conv	4th Year SB	Asgrow AG2107	57.0	10.8	350	34.8	1	35.0	19.3	1198	659	1857
Conv	4th Year SB	Latham E2412R	51.9	11.7	319	42.8	2	35.9	17.2	1116	536	1653
Conv	4th Year SB	Pioneer 91M90	52.4	11.0	322	37.0	2	33.8	19.2	1062	605	1666
Conv	5th Year SB	Asgrow AG2107	65.2	10.8	400	39.8	1	35.4	18.9	1383	740	2123
Conv	5th Year SB	Latham E2412R	63.9	13.2	392	43.3	2	36.6	16.9	1403	645	2048
Conv	5th Year SB	Pioneer 91M90	67.0	11.2	411	37.0	1	34.7	18.9	1393	760	2153
Conv	Cont. SB	Asgrow AG2107	57.0	10.9	350	35.3	1	35.8	19.1	1224	652	1876
Conv	Cont. SB	Latham E2412R	53.2	11.7	327	40.0	2	37.1	16.9	1183	538	1721
Conv	Cont. SB	Pioneer 91M90	52.0	11.0	319	35.8	1	34.8	18.8	1086	586	1673
Conv	SB/C	Asgrow AG2107	55.8	10.7	342	36.5	1	34.5	19.4	1154	650	1803
Conv	SB/C	Latham E2412R	50.7	11.5	311	39.8	2	35.2	17.8	1069	542	1611
Conv	SB/C	Pioneer 91M90	54.2	10.8	333	37.0	2	33.7	19.3	1097	627	1724

(continued)

**Table C- 50. Corn/Soybean Rotation and Tillage Study - Soybean.**  
(continued) **Arlington, WI - 2006.**

Tillage	Rotation	Insecticide	Yield bu/A	Moisture %	Grower return \$/A	Height inches	Lodging 1 to 5	Seed Composition		Protein lbs/A	Oil lbs/A	Protein + Oil lbs/A
								Protein %	Oil %			
No-Till	1st Year SB	Asgrow AG2107	53.9	10.8	331	36.0	2	35.3	19.3	1141	624	1765
No-Till	1st Year SB	Latham E2412R	54.0	11.6	331	42.8	3	36.2	17.4	1172	561	1733
No-Till	1st Year SB	Pioneer 91M90	51.8	11.1	318	38.3	1	34.0	19.0	1056	592	1648
No-Till	2nd Year SB	Asgrow AG2107	54.3	11.2	333	36.5	1	35.0	19.3	1138	630	1768
No-Till	2nd Year SB	Latham E2412R	54.4	12.3	334	42.3	2	35.7	17.5	1166	570	1735
No-Till	2nd Year SB	Pioneer 91M90	48.1	11.3	295	38.3	1	33.5	19.5	965	560	1525
No-Till	3rd Year SB	Asgrow AG2107	56.6	11.0	347	36.3	1	34.8	19.4	1180	659	1839
No-Till	3rd Year SB	Latham E2412R	53.1	11.6	326	42.5	2	35.9	17.4	1143	553	1696
No-Till	3rd Year SB	Pioneer 91M90	51.3	11.2	315	37.8	1	33.4	19.4	1028	597	1625
No-Till	4th Year SB	Asgrow AG2107	56.6	10.8	348	35.8	1	35.2	19.4	1195	657	1852
No-Till	4th Year SB	Latham E2412R	50.9	12.0	313	43.3	2	35.8	17.2	1095	526	1621
No-Till	4th Year SB	Pioneer 91M90	49.1	11.4	301	39.0	2	34.2	18.8	1006	555	1561
No-Till	5th Year SB	Asgrow AG2107	63.3	10.9	389	39.0	1	35.5	19.2	1346	728	2075
No-Till	5th Year SB	Latham E2412R	57.3	12.7	352	45.3	3	36.3	17.0	1247	584	1831
No-Till	5th Year SB	Pioneer 91M90	56.5	11.0	347	41.0	1	34.4	19.0	1166	643	1809
No-Till	Cont. SB	Asgrow AG2107	53.7	11.0	330	34.8	1	34.9	19.4	1122	625	1748
No-Till	Cont. SB	Latham E2412R	51.2	11.7	314	42.8	2	35.8	17.3	1099	531	1631
No-Till	Cont. SB	Pioneer 91M90	50.3	11.3	309	37.5	1	33.5	19.2	1009	579	1588
No-Till	SB/C	Asgrow AG2107	56.1	11.5	344	37.8	1	35.1	19.2	1180	646	1826
No-Till	SB/C	Latham E2412R	52.4	12.1	322	44.8	3	35.7	17.2	1122	542	1664
No-Till	SB/C	Pioneer 91M90	54.2	10.9	333	38.3	1	34.0	19.2	1106	623	1730
Mean			55.3	11.3	340	39.0	1	35.1	18.5	1165	615	1780
<b>Probability(%)</b>												
Tillage (T)			1.9	41.4	1.9	10.0	34.5	0.7	3.2	0.9	3.4	1.4
Rotation (R)			0.0	0.8	0.0	4.0	7.9	0.1	0.6	0.0	0.0	0.0
T x R			6.0	10.7	6.3	54.5	31.8	0.1	2.5	5.1	12.2	7.5
Insecticide (I)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T x I			17.3	79.6	17.3	16.7	2.5	7.6	90.3	20.2	14.8	17.8
R x I			4.8	0.1	4.8	76.9	0.5	22.4	66.8	3.2	9.1	4.7
T x R x I			29.3	82.7	29.3	49.2	33.3	98.1	73.6	38.1	24.8	31.1
<b>LSD(0.10)</b>												
Tillage (T)			1.9	NS	12	NS	NS	0.1	0.1	38	22	60
Rotation (R)			2.3	0.2	14	1.5	0	0.3	0.2	52	26	77
T x R			3.3	NS	20	NS	NS	0.4	0.2	74	NS	108
Insecticide (I)			0.9	0.1	6	0.7	0	0.1	0.1	20	12	31
T x I			NS	NS	NS	NS	0	0.2	NS	NS	NS	NS
R x I			2.4	0.4	15	NS	0	NS	NS	52	31	81
T x R x I			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>CV(%)</b>												
			5	4	5	5	28	1	2	5	6	5

**Table C-51. Corn/Soybean Rotation and Tillage Study - Corn Quality.  
Arlington, WI - 2005**

Tillage	Rotation	Insecticide	Grain Composition			Ethanol	
			Oil %	Starch %	Protein %	per bu gallons	per A gallons
		Force	3.4	58.8	7.5	2.89	528
		Poncho	3.3	58.6	7.5	2.89	513
		Prescribe	3.4	58.9	7.6	2.88	512
	1st Year Corn		3.5	58.7	7.4	2.90	630
	2nd Year Corn		3.3	58.2	7.6	2.89	461
	3rd Year Corn		3.4	58.6	7.7	2.87	460
	4th Year Corn		3.4	58.5	7.5	2.89	514
	5th Year Corn		3.4	58.8	7.5	2.88	499
	Continuous Corn		3.3	58.8	7.6	2.88	476
	Rotated Corn		3.4	59.7	7.6	2.89	582
	1st Year Corn	Force	3.5	59.0	7.4	2.91	636
	1st Year Corn	Poncho	3.5	58.6	7.4	2.90	626
	1st Year Corn	Prescribe	3.4	58.6	7.3	2.90	626
	2nd Year Corn	Force	3.3	58.2	7.5	2.90	503
	2nd Year Corn	Poncho	3.3	58.2	7.6	2.89	451
	2nd Year Corn	Prescribe	3.3	58.0	7.7	2.88	430
	3rd Year Corn	Force	3.4	59.1	7.8	2.87	460
	3rd Year Corn	Poncho	3.4	58.0	7.7	2.88	463
	3rd Year Corn	Prescribe	3.4	58.6	7.7	2.87	458
	4th Year Corn	Force	3.4	58.2	7.5	2.88	511
	4th Year Corn	Poncho	3.3	58.8	7.4	2.89	509
	4th Year Corn	Prescribe	3.4	58.6	7.5	2.88	521
	5th Year Corn	Force	3.4	59.0	7.6	2.88	507
	5th Year Corn	Poncho	3.3	58.6	7.5	2.88	498
	5th Year Corn	Prescribe	3.4	59.0	7.6	2.89	494
	Continuous Corn	Force	3.3	58.9	7.6	2.88	486
	Continuous Corn	Poncho	3.3	58.2	7.5	2.89	469
	Continuous Corn	Prescribe	3.3	59.3	7.7	2.88	474
	Rotated Corn	Force	3.4	59.3	7.5	2.90	592
	Rotated Corn	Poncho	3.3	59.7	7.5	2.89	574
	Rotated Corn	Prescribe	3.4	59.9	7.7	2.88	579
Conventional			3.4	58.8	7.4	2.90	508
NoTill			3.3	58.7	7.7	2.88	527
Conventional		Force	3.4	58.8	7.4	2.90	516
Conventional		Poncho	3.4	58.6	7.4	2.90	508
Conventional		Prescribe	3.4	59.1	7.4	2.90	500
NoTill		Force	3.3	58.8	7.6	2.88	540
NoTill		Poncho	3.3	58.6	7.6	2.88	518
NoTill		Prescribe	3.4	58.6	7.8	2.87	523
Conventional	1st Year Corn		3.5	58.7	7.3	2.90	590
Conventional	2nd Year Corn		3.3	58.4	7.4	2.90	489
Conventional	3rd Year Corn		3.4	59.0	7.5	2.89	467
Conventional	4th Year Corn		3.4	58.9	7.3	2.90	529
Conventional	5th Year Corn		3.4	58.6	7.4	2.90	483
Conventional	Continuous Corn		3.3	58.8	7.5	2.89	444
Conventional	Rotated Corn		3.4	59.5	7.5	2.90	555
NoTill	1st Year Corn		3.4	58.8	7.4	2.90	669
NoTill	2nd Year Corn		3.3	57.9	7.8	2.87	434
NoTill	3rd Year Corn		3.4	58.2	8.0	2.86	454
NoTill	4th Year Corn		3.3	58.2	7.7	2.87	498
NoTill	5th Year Corn		3.4	59.1	7.7	2.87	515
NoTill	Continuous Corn		3.3	58.8	7.7	2.88	509
NoTill	Rotated Corn		3.4	59.8	7.7	2.88	608

(continued)



**Table C-51. Corn/Soybean Rotation and Tillage Study - Corn Quality.**  
(continued) **Arlington, WI - 2005**

Tillage	Rotation	Insecticide	Grain Composition			Ethanol	
			Oil	Starch	Protein	per bu	per A
			%	%	%	gallons	gallons
Conventional	1st Year Corn	Force	3.5	59.0	7.4	2.91	586
Conventional	1st Year Corn	Poncho	3.4	58.2	7.4	2.89	600
Conventional	1st Year Corn	Prescribe	3.5	59.0	7.3	2.90	584
Conventional	2nd Year Corn	Force	3.3	58.5	7.3	2.91	544
Conventional	2nd Year Corn	Poncho	3.4	58.3	7.4	2.89	473
Conventional	2nd Year Corn	Prescribe	3.4	58.4	7.4	2.90	449
Conventional	3rd Year Corn	Force	3.4	59.5	7.6	2.88	471
Conventional	3rd Year Corn	Poncho	3.3	58.5	7.4	2.90	479
Conventional	3rd Year Corn	Prescribe	3.4	58.9	7.5	2.88	451
Conventional	4th Year Corn	Force	3.5	58.5	7.4	2.90	519
Conventional	4th Year Corn	Poncho	3.4	58.8	7.3	2.91	530
Conventional	4th Year Corn	Prescribe	3.4	59.3	7.3	2.90	537
Conventional	5th Year Corn	Force	3.4	58.4	7.5	2.89	489
Conventional	5th Year Corn	Poncho	3.3	58.3	7.4	2.89	474
Conventional	5th Year Corn	Prescribe	3.4	59.0	7.3	2.91	487
Conventional	Continuous Corn	Force	3.3	58.9	7.5	2.89	440
Conventional	Continuous Corn	Poncho	3.3	58.3	7.5	2.90	450
Conventional	Continuous Corn	Prescribe	3.3	59.3	7.6	2.89	442
Conventional	Rotated Corn	Force	3.4	59.0	7.4	2.91	560
Conventional	Rotated Corn	Poncho	3.3	59.9	7.5	2.90	552
Conventional	Rotated Corn	Prescribe	3.4	59.7	7.5	2.90	554
NoTill	1st Year Corn	Force	3.4	59.0	7.3	2.90	686
NoTill	1st Year Corn	Poncho	3.5	59.0	7.4	2.90	652
NoTill	1st Year Corn	Prescribe	3.4	58.2	7.4	2.89	669
NoTill	2nd Year Corn	Force	3.3	58.0	7.7	2.88	461
NoTill	2nd Year Corn	Poncho	3.3	58.1	7.7	2.88	429
NoTill	2nd Year Corn	Prescribe	3.2	57.7	7.9	2.87	411
NoTill	3rd Year Corn	Force	3.3	58.6	8.0	2.86	450
NoTill	3rd Year Corn	Poncho	3.4	57.6	7.9	2.85	448
NoTill	3rd Year Corn	Prescribe	3.5	58.3	8.0	2.85	465
NoTill	4th Year Corn	Force	3.4	58.0	7.7	2.87	502
NoTill	4th Year Corn	Poncho	3.2	58.8	7.5	2.88	489
NoTill	4th Year Corn	Prescribe	3.3	57.9	7.7	2.87	504
NoTill	5th Year Corn	Force	3.4	59.5	7.6	2.87	524
NoTill	5th Year Corn	Poncho	3.3	58.8	7.5	2.87	521
NoTill	5th Year Corn	Prescribe	3.4	59.0	7.9	2.86	502
NoTill	Continuous Corn	Force	3.3	59.0	7.6	2.88	533
NoTill	Continuous Corn	Poncho	3.3	58.2	7.6	2.88	488
NoTill	Continuous Corn	Prescribe	3.3	59.3	7.8	2.87	506
NoTill	Rotated Corn	Force	3.4	59.6	7.6	2.89	624
NoTill	Rotated Corn	Poncho	3.3	59.6	7.6	2.89	596
NoTill	Rotated Corn	Prescribe	3.4	60.1	8.0	2.86	603
<b>Mean</b>			<b>3.4</b>	<b>58.8</b>	<b>7.6</b>	<b>2.89</b>	<b>517</b>
<b>Probability(%)</b>							
Tillage (T)			30.1	56.1	0.3	0.1	3.1
Rotation (R)			1.4	0.3	0.1	0.3	0.0
T x R			45.3	32.7	6.4	6.8	2.5
Insecticide (I)			47.6	34.2	2.9	17.6	6.2
T x I			72.5	41.1	1.7	26.8	54.8
R x I			82.5	53.9	68.1	87.3	50.1
T x R x I			87.3	93.0	90.6	71.7	88.5
<b>LSD(0.10)</b>							
Tillage (T)			NS	NS	0.1	0.01	13
Rotation (R)			0.1	0.5	0.1	0.01	37
T x R			NS	NS	0.1	0.01	27
Insecticide (I)			NS	NS	0.1	NS	12
T x I			NS	NS	0.1	NS	NS
R x I			NS	NS	NS	NS	NS
T x R x I			NS	NS	NS	NS	NS
<b>CV(%)</b>							
			3	2	3	1	8

**Table C-52. Corn/Soybean Rotation and Tillage Study - Corn Quality.  
Arlington, WI - 2004**

Tillage	Rotation	Insecticide	Grain Composition			Ethanol	
			Oil	Starch	Protein	per bu	per A
			%	%	%	gallons	gallons
		Force	3.5	61.3	7.2	2.90	543
		Poncho	3.5	61.3	7.1	2.90	526
		Prescribe	3.5	61.2	7.2	2.89	520
	1st Year Corn		3.5	61.1	7.4	2.90	588
	2nd Year Corn		3.5	61.4	7.0	2.91	519
	3rd Year Corn		3.5	61.4	7.0	2.90	524
	4rd Year Corn		3.4	61.4	7.0	2.90	509
	5th Year Corn		3.4	61.3	7.2	2.89	502
	Continuous Corn		3.5	61.3	7.2	2.89	508
	Rotated Corn		3.4	61.0	7.4	2.88	555
	1st Year Corn	Force	3.5	61.0	7.4	2.90	581
	1st Year Corn	Poncho	3.4	61.2	7.2	2.90	610
	1st Year Corn	Prescribe	3.5	61.0	7.4	2.90	574
	2nd Year Corn	Force	3.5	61.4	7.1	2.90	517
	2nd Year Corn	Poncho	3.5	61.5	7.0	2.92	527
	2nd Year Corn	Prescribe	3.4	61.4	7.0	2.91	514
	3rd Year Corn	Force	3.5	61.6	7.0	2.89	557
	3rd Year Corn	Poncho	3.4	61.5	6.9	2.90	517
	3rd Year Corn	Prescribe	3.5	61.0	7.2	2.90	499
	4rd Year Corn	Force	3.4	61.5	7.0	2.91	531
	4rd Year Corn	Poncho	3.5	61.3	7.0	2.89	495
	4rd Year Corn	Prescribe	3.5	61.4	7.0	2.90	503
	5th Year Corn	Force	3.4	61.3	7.2	2.89	525
	5th Year Corn	Poncho	3.4	61.4	7.1	2.89	494
	5th Year Corn	Prescribe	3.5	61.3	7.3	2.88	487
	Continuous Corn	Force	3.5	61.2	7.3	2.89	512
	Continuous Corn	Poncho	3.5	61.3	7.1	2.90	508
	Continuous Corn	Prescribe	3.5	61.2	7.2	2.88	505
	Rotated Corn	Force	3.4	61.3	7.3	2.89	575
	Rotated Corn	Poncho	3.4	60.9	7.5	2.88	532
	Rotated Corn	Prescribe	3.5	60.8	7.5	2.87	558
Conventional			3.5	61.1	7.4	2.89	544
NoTill			3.4	61.5	6.9	2.90	515
Conventional		Force	3.5	61.2	7.4	2.89	558
Conventional		Poncho	3.5	61.1	7.4	2.89	544
Conventional		Prescribe	3.5	61.0	7.5	2.89	530
NoTill		Force	3.4	61.5	7.0	2.90	528
NoTill		Poncho	3.4	61.5	6.8	2.90	508
NoTill		Prescribe	3.4	61.4	7.0	2.90	509
Conventional	1st Year Corn		3.5	60.9	7.5	2.89	589
Conventional	2nd Year Corn		3.5	61.3	7.2	2.92	515
Conventional	3rd Year Corn		3.6	61.1	7.4	2.89	555
Conventional	4rd Year Corn		3.5	61.1	7.4	2.90	536
Conventional	5th Year Corn		3.5	61.1	7.5	2.88	525
Conventional	Continuous Corn		3.5	61.1	7.5	2.88	518
Conventional	Rotated Corn		3.4	60.9	7.6	2.88	572
NoTill	1st Year Corn		3.4	61.3	7.2	2.91	588
NoTill	2nd Year Corn		3.5	61.5	6.9	2.90	523
NoTill	3rd Year Corn		3.4	61.6	6.6	2.90	494
NoTill	4rd Year Corn		3.4	61.7	6.6	2.91	479
NoTill	5th Year Corn		3.4	61.6	6.9	2.89	479
NoTill	Continuous Corn		3.4	61.4	6.9	2.90	496
NoTill	Rotated Corn		3.4	61.1	7.2	2.88	538

(continued)

**Table C-52. Corn/Soybean Rotation and Tillage Study - Corn Quality.**  
(continued) **Arlington, WI - 2004**

Tillage	Rotation	Insecticide	Grain Composition			Ethanol	
			Oil %	Starch %	Protein %	per bu gallons	per A gallons
Conventional	1st Year Corn	Force	3.5	60.8	7.5	2.90	578
Conventional	1st Year Corn	Poncho	3.5	60.9	7.5	2.89	616
Conventional	1st Year Corn	Prescribe	3.5	61.0	7.5	2.89	572
Conventional	2nd Year Corn	Force	3.4	61.3	7.2	2.91	506
Conventional	2nd Year Corn	Poncho	3.5	61.3	7.1	2.94	525
Conventional	2nd Year Corn	Prescribe	3.4	61.1	7.3	2.90	515
Conventional	3rd Year Corn	Force	3.5	61.4	7.3	2.89	590
Conventional	3rd Year Corn	Poncho	3.5	61.3	7.4	2.89	549
Conventional	3rd Year Corn	Prescribe	3.7	60.6	7.6	2.90	525
Conventional	4rd Year Corn	Force	3.4	61.4	7.4	2.91	573
Conventional	4rd Year Corn	Poncho	3.5	60.9	7.4	2.88	507
Conventional	4rd Year Corn	Prescribe	3.5	61.1	7.4	2.89	528
Conventional	5th Year Corn	Force	3.5	61.1	7.4	2.89	543
Conventional	5th Year Corn	Poncho	3.5	61.0	7.5	2.88	528
Conventional	5th Year Corn	Prescribe	3.5	61.2	7.5	2.89	503
Conventional	Continuous Corn	Force	3.5	61.0	7.6	2.88	522
Conventional	Continuous Corn	Poncho	3.5	61.1	7.5	2.89	524
Conventional	Continuous Corn	Prescribe	3.5	61.1	7.5	2.87	509
Conventional	Rotated Corn	Force	3.4	61.1	7.5	2.89	592
Conventional	Rotated Corn	Poncho	3.5	60.9	7.7	2.88	561
Conventional	Rotated Corn	Prescribe	3.4	60.6	7.6	2.87	561
NoTill	1st Year Corn	Force	3.4	61.3	7.3	2.90	583
NoTill	1st Year Corn	Poncho	3.4	61.6	7.0	2.91	604
NoTill	1st Year Corn	Prescribe	3.4	61.1	7.4	2.90	576
NoTill	2nd Year Corn	Force	3.5	61.4	7.1	2.89	527
NoTill	2nd Year Corn	Poncho	3.4	61.6	6.9	2.90	529
NoTill	2nd Year Corn	Prescribe	3.5	61.6	6.7	2.92	513
NoTill	3rd Year Corn	Force	3.5	61.7	6.7	2.90	524
NoTill	3rd Year Corn	Poncho	3.4	61.7	6.4	2.91	485
NoTill	3rd Year Corn	Prescribe	3.4	61.4	6.8	2.90	474
NoTill	4rd Year Corn	Force	3.5	61.6	6.5	2.91	476
NoTill	4rd Year Corn	Poncho	3.4	61.6	6.5	2.91	484
NoTill	4rd Year Corn	Prescribe	3.4	61.7	6.6	2.91	478
NoTill	5th Year Corn	Force	3.4	61.6	6.9	2.89	507
NoTill	5th Year Corn	Poncho	3.4	61.7	6.8	2.89	460
NoTill	5th Year Corn	Prescribe	3.4	61.4	7.0	2.88	470
NoTill	Continuous Corn	Force	3.4	61.4	7.0	2.89	498
NoTill	Continuous Corn	Poncho	3.4	61.4	6.8	2.91	493
NoTill	Continuous Corn	Prescribe	3.4	61.4	6.9	2.89	499
NoTill	Rotated Corn	Force	3.4	61.4	7.1	2.90	557
NoTill	Rotated Corn	Poncho	3.4	61.0	7.3	2.88	503
NoTill	Rotated Corn	Prescribe	3.5	61.0	7.3	2.87	554
<b>Mean</b>			3.5	61.3	7.2	2.90	530
<b>Probability(%)</b>							
Tillage (T)			2.6	0.1	0.0	11.4	0.1
Rotation (R)			22.2	1.5	0.2	0.3	0.0
T x R			18.0	74.6	11.7	46.0	4.6
Insecticide (I)			28.9	0.9	3.3	25.1	0.0
T x I			23.8	47.0	23.9	74.2	37.3
R x I			56.5	2.7	50.9	35.2	0.7
T x R x I			16.6	43.7	74.6	15.2	60.6
<b>LSD(0.10)</b>							
Tillage (T)			0.0	0.1	0.1	NS	9
Rotation (R)			NS	1.7	1.9	0.01	20
T x R			NS	NS	NS	NS	28
Insecticide (I)			NS	0.1	0.1	NS	9
T x I			NS	NS	NS	NS	NS
R x I			NS	0.2	NS	NS	24
T x R x I			NS	NS	NS	NS	NS
<b>CV(%)</b>							
			2	0	3	1	5