

## FIELD EXPERIMENT HISTORY

Year: 2002

**Title:** Ten year Corn/Soybean/Wheat Rotation Study  
**Experiment:** 09 Ten year Corn/Soybean/Wheat Rotation  
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**Organization:** UW Madsion, Dept. of Agronomy  
**Location:** Arlington Agricultural Research Station, Arlington, WI

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### FIELD INFORMATION

Field: ARS 335  
 Soil Type: Plano Silt Loam  
 Soil Test Results: Date:10/99 pH: 6.5 P: 35 ppm K: 203 ppm O.M.: 3.2%  
 Fertilizer Applied: Soybean: None  
 Wheat: None  
 Corn: 180 lb/a nitrogen preemerge  
 Tillage Operations: No-till  
 Previous Crop: Corn  
 Previous Herbicide: Roundup  
 Irrigation: None

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### EXPERIMENTAL PROCEDURE

Exp. Design: RCB  
 Replicates: 4  
 Variables: Factors/Treatments:

<u>System</u>	<u>Rotation</u>
Continuous	Corn, Soybean or Winter Wheat
Alternating	Corn/Soybean
Grain system I	Corn/Soybean(early)/Winter Wheat(red clover)
Grain system II	Corn(early)/Winter Wheat(red clover)/Soybean
Livestock system	Corn(silage)/Winter Wheat(straw removed )/Soybean

	<u>Corn</u>	<u>Soybean</u>	<u>Wheat</u>
Area Planted:	60' x 60'	60' x 60'	60' x 60'
Area Harvested:	5' x 60'	5' x 60'	5' x 60'
Row Spacing:	30"	30"	7.5"
Seeding Rate (spa)	35,000 seeds/acre	130,000 seeds/acre	100 lb/acre
Hybrid/Variety:	DeKalb DKC5334	Kaltenberg KB121 and KB231	Stoa spring
Planting Date:	6-May-02	3-May-02	1-May-02
Planting Equip:	Kinze 2000 Interplant planter	Kinze 2000 Interplant planter	JD 750 No-Till Drill
Harvesting Date:	1-Oct and 7-Oct	23-Sept and 14-Oct	8-Aug
Harvesting Equip:	Kincaid plot combine	Almaco plot combine	Almaco plot combine
	<u>Material</u>	<u>Crop</u>	<u>Rate</u>
Herbicides:	Roundup	Corn and Soybean	1.5 qt/a
Insecticides:	Force	Corn only	5.0 lb/a

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**Results: Tables C-40, C-41, and C-42.**

**Table C-40. Corn, Soybean and Wheat Rotation. - Setup Year  
Arlington, WI - 2002.**

Crop	Rotation	Yield	Moisture	Grower return	Test weight	Lodging	Population
		bu/A	%	\$/A	lbs/bu	%	no./A
Corn	1	186	24.6	381	53	1	27878
Corn	4	183	24.6	374	53	2	28556
Corn	6	178	22.6	370	53	2	29814
Corn	9	177	26.4	358	51	0	30589
Mean		181	24.6	371	53	1	29209
<b><u>Probability(%)</u></b>							
Rotation (R)		55.6	13.9	34.9	3.2	17.8	60.6
<b><u>LSD (0.10)</u></b>							
Rotation (R)		NS	NS	NS	1	NS	NS
<b><u>CV(%)</u></b>							
		5	6	4	1	83	9

  

Crop	Rotation	Yield	Moisture	Population	Kernel milk	Crude protien	ADF	NDF	<i>In Vitro</i> Digest	NDFD	Starch	Milk per	
		T/A	%	no./A	%	%	%	%	%	%	%	lbs/T	lbs/A
Corn Silage	12	7.2	55.0	29333	41.7	6.3	26.0	51.9	83.1	67.3	31.0	3467	24987

**Table C-41. Corn, Soybean and Wheat Rotation. - Setup Year  
Arlington, WI - 2002.**

Crop	Rotation	Yield	Moisture	Grower return
		bu/A	%	\$/A
Soybean	2	51	14.2	272
Soybean	5	49	14.5	263
Soybean	7	52	14.9	279
Soybean	11	47	14.1	250
Soybean	14	50	14.4	270
Mean		50	14.4	267
<b><u>Probability(%)</u></b>				
Rotation (R)		79.5	0.1	80.3
<b><u>LSD (0.10)</u></b>				
Rotation (R)		NS	0.2	NS
<b><u>CV(%)</u></b>				
		11	1	11

**Table C-42. Corn, Soybean and Wheat Rotation. - Setup Year  
Arlington, WI - 2002.**

Crop	Rotation	Yield	Moisture	Grower return
		bu/A	%	\$/A
Wheat	3	33	13.2	94
Wheat	8	40	13.4	113
Wheat	10	31	13.0	88
Wheat	13	37	14.1	103
Mean		35	13.4	100
<b><u>Probability(%)</u></b>				
Rotation (R)		18	57	18
<b><u>LSD (0.10)</u></b>				
Rotation (R)		NS	NS	NS
<b><u>CV(%)</u></b>				
		12	7	12