

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID:** 6494 **Year:** 2020
Personnel: Joe Lauer, Thierno Diallo, Kent Kohn
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: ARS333 **Previous Crop:** See Factors **Soil Type:** Plano Silt Loam
Soil Test Date: 11/12/18 **pH** 6.4 **OM (%)** 3.3 **P (ppm)** 11 **K (ppm)** 93

Plot Management

	<u>Analysis:</u>	<u>Product Rate lbs/A:</u>	<u>Date:</u>
Tillage Operations: NT			
Fertilizer:			
Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	32-0-0	CC: 593 CA: 500	6/22/20 6/22/20
Herbicide:			
Manure:	N/A	N/A	N/A
C: Status @ 3 oz/A + Roundup PMx @ 32 oz/A 6/17/20 Rifle @ 16 oz/A 5/26/20		Insecticide: N/A	
A: Roundup PMx @ 22 oz/A Lambda T-2 @ 1.6 oz/A 8/4/20 Durango @ 36 oz/A + Baythroid2 @ 2.8 oz/A 7/7/20 Durango DMA @ 36 oz/A 5/26/20		Hybrid: C: DKC54-65RIB A: Dekalb DKA40-51RR	
Irrigation: None			
Planting Date: C: 5/7/20 A: 4/21/20	Planting Depth: C: 1.5" A: 0.25"	Row Width: 30"	
Target Plant Density: 35000 plants/A		Planting Method: JD1700 w RTK A: JD750 No-Till Drill	
Harvest Date: C: 10/27/20 S: 9/22/20		Harvest Method: C: MF 8XP S: Hagee harvester A: Almaco Harvester	
Notes: A: 6/2; 7/1; 7/28; 8/26			

Experimental Design

Design: RCB split-split-block	Replications: 3
Plot Size Seeded: 75' x 60	Experiment Size: 3.47 A
Factors/Treatments:	Harvest Plot Size: G: 5' x 71' S: 5' x 71' A: 4.33' x 71'
<u>Rotation - 2020 Treatments:</u>	
1) AAACC-1A	
2) AAACC-2A	
3) AAACC-3A	
4) AAACC-1C	
5) AAACC-2C	
6) AACC- 1C	
7) AACC- 2C	
8) AACC- 1A	
9) AACC- 2A	
10) AACC- 1C (Silage)	
11) AACC- 2C	
12) AACC- 1A	
13) AACC- 2A (Silage)	
14) CC- Grain & Silage (S/S, S/G, G/S, G/G)	

Results: Tables 2009-01, 2009-02 & 1809-03

**Table:2009-01. Alfalfa-Corn Rotation Study - Corn.
Arlington, WI - 2020.**

Rotation	Density	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	*AGI \$3.54/bu \$/A
					Total %	Stalk %	Root %		
AAACC-1C		247	21.0	53.4	5.0	1.4	3.6	37222	789
AAACC-2C		217	23.9	52.9	1.9	1.2	0.7	36222	681
AACC-1C		258	21.3	53.9	6.5	0.0	6.5	36222	824
AACC-2C		212	23.4	52.8	2.0	1.1	0.9	35111	668
CC-CC		202	25.9	52.4	0.7	0.3	0.4	34278	626
	25000	221	22.9	53.4	1.6	0.0	1.6	25000	698
	30000	223	23.3	52.9	1.1	0.2	0.8	29400	704
	35000	231	23.4	53.0	1.7	0.6	1.1	34267	728
	40000	230	23.0	53.0	4.3	0.2	4.1	39533	729
	45000	232	22.6	53.4	5.4	2.2	3.2	41667	735
	50000	225	23.4	52.8	5.2	1.6	3.7	45000	712
AAACC-1C	25000	238	20.8	53.8	6.9	0.0	6.9	24667	763
AAACC-1C	30000	238	22.0	52.8	0.0	0.0	0.0	31667	758
AAACC-1C	35000	238	21.1	53.4	0.9	0.9	0.0	36667	761
AAACC-1C	40000	251	20.5	54.0	11.9	0.9	11.0	37667	807
AAACC-1C	45000	257	20.2	53.5	8.1	4.4	3.7	45000	825
AAACC-1C	50000	257	21.3	52.8	2.1	2.1	0.0	47667	821
AAACC-2C	25000	219	23.6	53.0	0.0	0.0	0.0	25667	689
AAACC-2C	30000	220	23.7	52.9	0.0	0.0	0.0	29667	691
AAACC-2C	35000	224	24.6	52.8	2.0	0.0	2.0	34000	699
AAACC-2C	40000	219	23.5	52.8	0.0	0.0	0.0	41667	691
AAACC-2C	45000	213	23.4	53.0	2.9	2.9	0.0	40333	670
AAACC-2C	50000	207	24.5	52.7	6.5	4.3	2.2	46000	647
AACC-1C	25000	233	22.0	53.8	0.0	0.0	0.0	26000	742
AACC-1C	30000	246	21.7	53.4	4.2	0.0	4.2	28333	783
AACC-1C	35000	257	22.3	53.2	3.5	0.0	3.5	35000	814
AACC-1C	40000	265	20.9	53.8	8.5	0.0	8.5	40000	848
AACC-1C	45000	274	20.3	54.9	8.0	0.0	8.0	41333	881
AACC-1C	50000	272	20.6	54.4	14.7	0.0	14.7	46667	873
AACC-2C	25000	216	21.9	53.8	1.3	0.0	1.3	24333	686
AACC-2C	30000	210	23.0	52.7	1.2	1.2	0.0	28667	663
AACC-2C	35000	215	24.1	52.0	0.0	0.0	0.0	33333	676
AACC-2C	40000	209	23.8	52.4	0.0	0.0	0.0	39667	658
AACC-2C	45000	213	23.4	53.3	8.0	3.7	4.3	41000	671
AACC-2C	50000	208	23.9	52.8	1.4	1.4	0.0	43667	655
CC-CC	25000	197	26.4	52.5	0.0	0.0	0.0	24333	609
CC-CC	30000	202	26.0	52.7	0.0	0.0	0.0	28667	627
CC-CC	35000	221	24.7	53.4	2.0	2.0	0.0	32333	689
CC-CC	40000	206	26.2	52.0	0.9	0.0	0.9	38667	639
CC-CC	45000	203	25.6	52.3	0.0	0.0	0.0	40667	630
CC-CC	50000	183	26.7	51.3	1.6	0.0	1.6	41000	564
Mean		227	23.1	53.1	3.2	0.8	2.4	35811	718
Probability(%)									
Rotation (R)		0.0	0.0	0.0	2.4	25.9	0.4	3.8	0.0
Density (D)		8.3	41.8	28.7	14.6	4.0	40.0	0.0	8.1
R x D		1.6	46.1	29.1	47.4	64.6	35.9	77.5	0.9
LSD(0.10)									
Rotation (R)		7	0.7	0.5	3	NS	3	1631	23
Density (D)		8	NS	NS	NS	1	NS	1787	25
R x D		17	NS	NS	NS	NS	NS	NS	56

*AGI - Adjusted Gross Income.

**Table:2009-02. Alfalfa-Corn Rotation Study -Alfalfa.
Arlington, WI - 2020.**

Rotation	Harvest Date				Total
	2-Jun	1-Jul	28-Jul	26-Aug	
	T Dm/A	T Dm/A	T Dm/A	T Dm/A	T Dm/A
AAACC-1A		0.0	0.2	0.3	0.5
AAACC-2A	1.7	0.7	0.6	0.3	3.4
AAACC-3A	1.0	0.3	0.3	0.2	1.8
AACC(S)-1A		0.0	0.4	0.3	0.7
AACC(S)-2A	1.9	1.0	0.7	0.3	3.9
AACC-1A		0.0	0.2	0.3	0.6
AACC-2A	1.7	0.6	0.5	0.3	3.0
Mean	1.6	0.4	0.4	0.3	2.0
<u>Probability (%)</u>					
Rotation (R)	0.3	0.0	0.0	2.7	0.0
<u>LSD 10%</u>					
Rotation (R)	0.3	0.2	0.1	0.1	0.4

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID:** 6495 **Year:** 2020
Personnel: Joe Lauer, Thierno Diallo, Kent Kohn, Jason Cavadini
Location: Marshfield, WI **County:** Marathon
Supported By: HATCH

Site Information

Field: 402 **Previous Crop:** See Factors **Soil Type:** Withee Silt Loam
Soil Test Date: 10/10/19 **pH** 7.3 **OM (%)** 3.3 **P (ppm)** 23 **K (ppm)** 88

Plot Management

Tillage Operations:	No-Till	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	20-10-20-4S 0-0-60	200 lbs 150 lbs	5/2/20 5/2/20
	Starter :	N/A	N/A	N/A
	Post plant :	C: 28-0-0 UAN	40 gal	6 /18/20
Herbicide:	Manure:	N/A	N/A	N/A
C: Verdict 16 oz/ac Roundup PowerMax 32 oz/ac A: None			Insecticide: N/A	
			Hybrid: C:Pioneer P8989AMXT A: Dairyland 3420 wet	
Irrigation:	None	Planting Depth:	C:1.5" A: 0.25"	Row Width: 30"
Planting Date:	C:5/05/20 A: 5/12/20		Planting Method:	JD1750 A: Brillion seeder
Target Plant Density:			Harvest Method:	C: Almaco Plot Combine CS: Hand harvest AI: MARS Forage plot harvester
Harvest Date:	C, CS: 11/4/20 A: 6/17, 7/17 , 8/24/20			

Notes:

Experimental Design

Design: RCB	Replications: 3
Plot Size Seeded: 60 x 60	Experiment Size: 5.40 A
Factors/Treatments:	Harvest Plot Size: G: 60' x 5' S: 10' x 2.5' A: 60' x 3.5'
<u>Rotation - 2020 Treatments:</u>	
1) AAACC-3A	
2) AAACC-1C	
3) AAACC-2C	
4) AAACC-1A	
5) AAACC-2A	
6) AACC-2C	
7) AACC-1A	
8) AACC- 2A	
9) AACC- 1C	
10) AACC- 2C(Silage)	
11) AACC- 1A	
12) AACC- 2A	
13) AACC- 1C(Silage)	
14) CC- Grain & Silage (S/S,S/G,G/S,G/G)	

Results: Tables 2009-04, 2009-05 & 2009-06

**Table: 2009-04 Alfalfa and Corn Rotation- Corn
Marshfield, WI - 2020.**

Rotation	Yield	Moisture	Test Weight	Stalk Lodging	*AGI \$3.54/bu
	bu/A	%	in.	%	\$/A
AA <u>ACC</u>	119	14.0	60.4	-	399
AA <u>CC</u>	103	12.7	59.9	-	346
A <u>ACC</u>	124	12.6	60.0	-	414
A <u>CC</u>	103	12.4	60.1	-	345
Continuous Corn	78	10.7	59.7	-	262
Mean	105	12.5	60.0		353
<u>Probability (%)</u>					
Treatment	2.0	30.0	15.1	-	2.0
<u>LSD 10%</u>					
Treatment	20	NS	NS	-	67
-	No population or lodging data				

**Table:2009-05 Alfalfa and Corn Rotation- Established Alfalfa
Marshfield, WI - 2020.**

Rotation	Yield 6-Jun tn dm/A	Yield 17-Jul tn dm/A	Yield 24-Aug tn dm/A	Yield Season tn dm/A
AAACC-1A	-	0.3	1.5	1.8
AAACC-2A	2.2	0.4	0.6	3.2
AAACC-3A	-	-	-	-
AACC-1A	-	0.3	1.5	1.8
AACC-2A	1.6	0.5	0.7	2.8
AACC(S)-1A	-	0.2	1.3	1.5
AACC(S)-2A	2.2	0.5	0.5	3.2
Mean	2.0	0.4	1.0	2.4
<u>Probability (%)</u>				
Rotation (R)	37.6	12.0	3.0	0.1
<u>LSD 10%</u>				
Rotation (R)	NS	NS	0.6	0.6
-	New seeding, no data			

