

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID:** 6424 **Year:** 2019
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)**

Plot Management

Tillage Operations:	No-Till	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	MAP 11-52-0	325 lbs/A	4 /24/19
	Starter :	N/A	N/A	N/A
	Post plant :	28-0-0	CC: 678 CA: 571	6/8/19 6/8/19
	Manure:	N/A	N/A	N/A
Herbicide:	C: Explorer @5 oz/A 5/17/19 Medal II EC @ 24 oz/A 5/17/19 Status @ 2.5 oz/A 7/1/19 Tomahawk 5 @ 32 oz/A 7/1/19 A: Tomahawk 5 @ 32 oz/A 6/14/19		Insecticide: N/A	
			Hybrid: C: Channel 205 - 19STXRIB A: Dekalb DKA44-16RR	
Irrigation:	None			
Planting Date:	C: 5/16/19 A: 5/13/19	Planting Depth:	C: 1.5" A: 0.25"	Row Width: 30"
Target Plant Density:			Planting Method:	JD1700 w RTK A: JD750 No-Till Drill
Harvest Date:	C: 11/4/19 Sil: 9/23		Harvest Method:	C: MF 8XP S: Hagee harvester Al: Almaco Harvester
Notes:	A: 5/30, 7/2 , 8/8 & 9/24			

Experimental Design

Design: RCB split-split-block	Replications: 3
Plot Size Seeded: 75' x10	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 - 2019 Treatments:</u>	<u>Plant Density:</u>
1) AAACC-3A	1) 25000
2) AAACC-1C	2) 30000
3) AAACC-2C	3) 35000
4) AAACC-1A	4) 40000
5) AAACC-2A	5) 45000
6) AACC-2C	6) 50000
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 1909-01, 1909-02 & 1909-03

**Table:1909-01. Alfalfa-Corn Rotation Study - Corn.
Arlington, WI - 2019.**

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		236	25.9	51.7	0.4	0.0	0.4	35056	733
AAACC-2C		216	25.8	51.2	0.1	0.1	0.0	35333	670
AACC-1C		234	25.8	51.5	0.4	0.4	0.0	36167	726
AACC-2C		210	26.8	50.8	0.0	0.0	0.0	35167	647
CC-CC		204	27.5	50.5	0.2	0.2	0.0	34611	628
	25000	208	26.3	51.5	0.3	0.0	0.3	23867	644
	30000	219	26.4	51.0	0.5	0.5	0.0	28800	678
	35000	225	26.0	51.6	0.0	0.0	0.0	34000	698
	40000	227	26.4	51.1	0.0	0.0	0.0	37733	701
	45000	223	26.1	51.2	0.5	0.5	0.0	41067	692
	50000	218	26.8	50.5	0.1	0.0	0.1	46133	671
AAACC-1C	25000	231	26.0	51.9	1.4	0.0	1.4	23000	717
AAACC-1C	30000	232	25.8	51.7	0.0	0.0	0.0	29000	719
AAACC-1C	35000	237	25.8	52.1	0.0	0.0	0.0	33000	737
AAACC-1C	40000	254	25.5	52.0	0.0	0.0	0.0	38667	789
AAACC-1C	45000	231	25.6	52.3	0.0	0.0	0.0	41000	718
AAACC-1C	50000	233	26.6	50.3	0.7	0.0	0.7	45667	718
AAACC-2C	25000	206	25.5	51.6	0.0	0.0	0.0	24000	641
AAACC-2C	30000	217	25.1	51.2	0.0	0.0	0.0	29000	677
AAACC-2C	35000	217	25.3	52.1	0.0	0.0	0.0	36000	677
AAACC-2C	40000	217	26.2	50.9	0.0	0.0	0.0	37000	671
AAACC-2C	45000	222	26.4	50.8	0.8	0.8	0.0	40000	687
AAACC-2C	50000	216	26.2	50.9	0.0	0.0	0.0	46000	670
AACC-1C	25000	209	25.2	52.8	0.0	0.0	0.0	24667	650
AACC-1C	30000	245	26.0	51.0	1.1	1.1	0.0	30000	761
AACC-1C	35000	236	26.3	51.0	0.0	0.0	0.0	33667	731
AACC-1C	40000	234	25.9	51.4	0.0	0.0	0.0	39000	727
AACC-1C	45000	247	25.4	51.6	1.6	1.6	0.0	41000	770
AACC-1C	50000	231	25.8	51.2	0.0	0.0	0.0	48667	717
AACC-2C	25000	210	25.8	51.7	0.0	0.0	0.0	24333	638
AACC-2C	30000	207	26.7	51.0	0.0	0.0	0.0	27667	638
AACC-2C	35000	211	26.5	51.1	0.0	0.0	0.0	34333	651
AACC-2C	40000	215	26.5	51.1	0.0	0.0	0.0	37333	664
AACC-2C	45000	210	26.7	50.7	0.0	0.0	0.0	41667	650
AACC-2C	50000	206	28.4	49.4	0.0	0.0	0.0	45667	629
CC-CC	25000	185	29.2	49.4	0.0	0.0	0.0	23333	561
CC-CC	30000	196	28.5	50.2	1.1	1.1	0.0	28333	597
CC-CC	35000	225	25.8	51.7	0.0	0.0	0.0	33000	696
CC-CC	40000	214	27.7	50.3	0.0	0.0	0.0	36667	656
CC-CC	45000	206	26.6	50.9	0.0	0.0	0.0	41667	636
CC-CC	50000	202	27.0	50.5	0.0	0.0	0.0	44667	622
Mean		220	26.3	51.2	0.2	0.2	0.1	35267	681
Probability(%)									
Rotation (R)		0.0	0.0	0.0	60.3	38.2	13.1	2.7	0.0
Density (D)		0.1	39.9	1.2	53.8	19.7	51.1	0.0	0.2
R x D		18.2	9.1	8.4	61.5	79.3	63.0	15.6	16.2
LSD(0.10)									
Rotation (R)		7	0.6	0.5	NS	NS	NS	784	22
Density (D)		7	NS	0.5	NS	NS	NS	858	24
R x D		NS	1.5	1.2	NS	NS	NS	NS	NS

*AGI - Adjusted Gross Income.

**Table:1909-02. Alfalfa-Corn Rotation Study -Alfalfa.
Arlington, WI - 2019.**

Rotation	Harvest Date				Total
	30-May	2-Jul	8-Aug	24-Sep	
	T Dm/A	T Dm/A	T Dm/A	T Dm/A	T Dm/A
AAACC-1A	0.0	0.1	0.9	0.2	1.2
AAACC-2A	1.1	1.2	0.8	0.4	3.4
AAACC-3A	1.0	1.4	0.9	0.4	3.7
AACC(S)-1A	0.0	0.6	0.8	0.2	1.6
AACC(S)-2A	1.0	1.3	0.9	0.5	3.7
AACC-1A	0.0	0.1	1.0	0.2	1.3
AACC-2A	1.1	1.6	1.1	0.4	4.2
Mean	1.0	0.9	0.9	0.3	2.7
<u>Probability (%)</u>					
Rotation (R)	29.9	0.0	76.6	1.3	0.0
<u>LSD 10%</u>					
Rotation (R)	NS	0.2	NS	0.1	0.6

