

**Table:1509-01. Alfalfa-Corn Rotation Study - Corn.
Arlington, WI - 2015.**

Rotation	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	*AGI \$3.44/bu \$/A
				Total %	Stalk %	Root %		
AAACC-1C	228	17.7	55.9	0.0	0.0	0.0	34000	723
AAACC-2C	219	20.5	54.8	0.0	0.0	0.0	32333	681
AACC-1C	212	17.4	55.7	0.0	0.0	0.0	33000	673
AACC-2C	195	19.3	55.0	1.0	0.0	1.0	32667	610
CC-CC	173	21.4	54.3	1.1	1.1	0.0	28000	534
Mean	205	19.3	55.2	0.4	0.2	0.2	32000	644
<u>Probability(%)</u>								
Rotation (R)	1.9	0.0	7.1	46.1	46.1	46.1	9.9	1.2
<u>LSD(0.10)</u>								
Rotation (R)	24	1.1	1.0	NS	NS	NS	3636	75

*AGI - Adjusted Gross Income.

**Table:1509-02. Alfalfa-Corn Rotation Study -Alfalfa.
Arlington, WI - 2015.**

Rotation	Harvest Date			Total
	9-Jun	16-Jul	4-Sep	
	T Dm/A	T Dm/A	T Dm/A	
AAACC-1A	-	0.1	0.7	0.8
AAACC-2A	2.1	1.8	1.0	4.9
AAACC-3A	1.6	1.1	0.4	3.2
AACC(S)-1A	-	1.5	0.9	2.4
AACC(S)-2A	1.8	1.7	0.7	4.2
AACC-1A	-	0.1	0.6	0.8
AACC-2A	2.2	1.7	1.0	4.9
Mean	1.9	1.2	0.8	3.0
<u>Probability (%)</u>				
Rotation (R)	14.5	0.0	0.1	0.0
<u>LSD 10%</u>				
Rotation (R)	NS	0.3	0.2	0.6

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID:** 6020 **Year:** 2015
Personnel: J. Cavadini, M. Bertram, J. Lauer, D. Undersander
Location: Marshfield, WI **County:** Marathon
Supported By: HATCH

Site Information

Field: ARS333 **Previous Crop:** See Factors **Soil Type:** Withee Silt Loam
Soil Test Date: 11/7 /11 **pH:** 7.1 **OM (%)** 3.2 **P (ppm)** 22 **K (ppm)** 49

Plot Management

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Tillage Operations: N/A	N/A	N/A	N/A
Fertilizer:			
Preplant :			
Starter :	C: 9-11-30-6S-Zn	150 lb/A	5 /1 /15
Post plant :	C: 32-0-0	40 gal/A	7/2/15
	A: 0-0-60	200 lb/A	6/28/15
	A: 0-0-60	200 lb/A	8/27/15
	A: Gypsum	100 lb/A	6/28/15
	A: Gypsum	100 lb/A	8/27/15
Manure:	N/A	N/A	N/A
Herbicide:	C: Brawl II 1.67 pt, Hornet WDG 3.0 oz, Roundup Pmax: 32 oz A: none	Insecticide: N/A	Hybrid: C: Pioneer 8906 AM1 (89 HHX,LL,RR2) A: Legacy L446 (RR)
Irrigation:	None		
Planting Date:	C: 4/30/15 A: 7/27/15	Planting Depth: C: 1.5" A: 0.25"	Row Width: C: 30" A: 7.5"
Target Plant Density:	C: 35000 A: 20 lb	Planting Method:	C: JD1750 Planter A: Great Plains No-Till Drill
Harvest Date:	C: 10/26/15, CS: 9/15/15 A: 6/25, 7/20, 8/25/15	Harvest Method:	C: MF plot combine CS: Hand harvest A: Mars forage harvester
Notes:			

Experimental Design

Design: RCB split-block **Replications:** 3
Plot Size Seeded: 60' x 60" **Experiment Size:** 5.40 A
Factors/Treatments: **Harvest Plot Size:** C: 60' x 5'; CS: 10' x 2.5' ; A: 60' x 3.5'

Rotation - 2015 Treatments:

- 1) AAACC-1A
- 2) AAACC-2A
- 3) AAACC-3A
- 4) AAACC-1C
- 5) AAACC-2C
- 6) AACC-2A
- 7) AACC-1C
- 8) AACC- 2C
- 9) AACC- 1A
- 10) AACC- 2A
- 11) AACC- 1C (Silage)
- 12) AACC- 2C (Silage)
- 13) AACC- 1A
- 14) CC- Grain & Silage (S/S,S/G,G/S,G/G)

Results: Tables 1509-04,1509-05 & 1509-06

**Table: 1509 - 04 Alfalfa and Corn Rotation- Corn
Marshfield, WI - 2015.**

Rotation	Yield	Moisture	Test Weight	Harvest Population	Stalk Lodging
	bu/A	%	in.	ppa	%
AAACC	98.5	20.4	55.6	34,880	0.5
AAACC	129.3	21.1	55.0	35,268	0.6
AACC	88.1	20.9	55.1	35,397	0.8
*AACCC	124.9	21.7	54.8	34,203	2.6
Continuous Corn	105.2	20.7	55.2	33,170	3.7
Mean	109.2	21.0	55.1	34,583	1.6
<u>Probability (%)</u>					
Treatment	0.3	1.5	>50	37.0	22.9
<u>LSD 10%</u>					
Treatment	19.1	0.6	NS	NS	NS
<u>CV (%)</u>	22	4	2	8	218

**Table: 1509 - 05 Alfalfa and Corn Rotation- Established Alfalfa
Marshfield, WI - 2015.**

Rotation	Yield	Yield	Yield	Yield
	25-Jun	20-Jul	25-Aug	Season
	T Dm/A	T Dm/A	T Dm/A	T Dm/A
AAACC	0.80	0.41	0.85	2.06
AAACC	0.64	0.37	0.84	1.85
AACC	1.17	0.62	0.89	2.68
*AAACC	0.75	0.49	0.89	2.14
AACsCs	1.11	0.45	0.92	2.48
*AAACsCs	0.55	0.44	0.77	1.76
Mean	0.84	0.46	0.86	2.16
Probability (%)				
Treatment	8.4	8.6	57.2	2.2
LSD 10%				
Treatment	NS	NS	NS	NS
CV (%)	31	20	12	14

**Table: 1509 - Alfalfa and Corn Rotation- Corn Silage
Marshfield, WI - 2015.**

Rotation	Yield T Dm/A	Moisture %	Kernel milk %	Harvest Population ppa	CP %	ADF %	NDF %	NDFD %	NFC %	Starch %	TDN %	Milk per	
												Ton lb	Acre lb
AACsCs	5.2	65.3	52	36,010	7.8	20.2	38.3	61.0	49.6	33.5	67.7	3,297	16,948
*AACsCsCs	4.6	65.7	53	35,235	7.8	18.6	36.3	62.6	51.7	37.0	69.7	3,460	15,910
Mean	4.9	65.5	53	35,622	7.8	19.4	37.3	61.8	50.6	35.2	68.7	3,378	16,429
Probability (%)													
Treatment	16.7	>50	>50	35.8	>50	43.5	49.7	2.9	>50	31.7	11.6	9.7	4.1
LSD 10%													
Treatment	NS	NS	NS	NS	NS	NS	NS	0.8	NS	NS	NS	160.1	632.2
CV (%)	17	3	10	5	6	10	8	1	7	9	1	2	2