Renz Weed Science
COLLEGE OF AGRICULTURAL & LIFE SCIENCES
UNIVERSITY OF WISCONSIN–MADISON

Extension
UNIVERSITY OF WISCONSIN–MADISON

ID #16-6

# UW – Madison Weed Science Renz Lab

## 2016 Alfalfa Seeding Rate Demo

**Investigator:** Mark Renz

**Location:** Arlington Agricultural Research Station, Arlington, WI

**Plot Information:**

Field: 371 (North end)

Alfalfa: 7.7 lb/A of PLS to 18.4 lb/A of PLS

Plot Dimensions: 10 x 25 ft

Variety: Dekalb DKA40-51RR

Design: RCB, 4 blocks

Soil Type: PnB (Plano silt loam, till substratum, 2 to 6 percent slopes)

Planted: 4/28/16

**Field History:**

Previous Crop & Tillage: Soybean no till

**Fertilizer:**

Spring

| Fertilizer | LBS per Acre | Total LBS |
|---|---|---|
| DAP | 261 | 1480 |
| Potash | 574 | 3280 |
| AMS | 83 | 480 |
| Boron | 2 | 11 |
| Total | 920 | 5251 |

**Herbicide Treatments:**

| Trt No. | Seed Rate (lb PLS/A) | Herbicide* | Plots |
|---|---|---|---|
| 1 | 7.7 | Y | 101, 103, 105, 107 |
| 2 | 7.7 | N | 102, 104, 106, 108 |
| 3 | 9.3 | Y | 201, 203, 205, 207 |
| 4 | 9.3 | N | 202, 204, 206, 208 |
| 5 | 11.0 | Y | 301, 303, 305, 307 |
| 6 | 11.0 | N | 302, 304, 306, 308 |
| 7 | 12.3 | Y | 401, 403, 405, 407 |
| 8 | 12.3 | N | 402, 404, 406, 408 |
| 9 | 13.6 | Y | 501, 503, 505, 507 |
| 10 | 13.6 | N | 502, 504, 506, 508 |
| 11 | 15.1 | Y | 601, 603, 605, 607 |
| 12 | 15.1 | N | 602, 604, 606, 608 |
| 13 | 16.6 | Y | 701, 703, 705, 707 |
| 14 | 16.6 | N | 702, 704, 706, 708 |
| 15 | 18.4 | Y | 801, 803, 805, 807 |
| 16 | 18.4 | N | 802, 804, 806, 808 |

* Plots with herbicide received 32 oz/A of Roundup Weathermax

**Herbicide Applications:**

Equipment: Backpack sprayer (15 GPA)

Nozzles: Six (6) Flat Tip XR TeeJet 11002 VS, Spacing = 20 in (10 ft boom)

Application Dates & weather information:

| Treatment (Timing) | Glyphosate Treated Plots 6/10/16 |
|---|---|
| Time | - |
| Precipitation | Scattered storms ~12 hr later |
| Temp (°C) | 29.38 |
| Wind (KPH & Dir.) | 20.43 N |
| Relative Humidity | 59 |
| Sky | Scattered Clouds |
| Soil Temp @ 2” (°C) | - |

**Other Pesticides:** None

**Notes:**

**6/10/16** Weeds: C. Lambsquarters, C. Ragweed (6-8”)

**6/20/16** Alf: 6-10”

Weeds: P. Lettuce, C. Ragweed, C. Lambsquarters, Horseweed, Dandelion (6-24”)

**6/27/16** Alf: 14”

Weeds: C. Ragweed, C. Lambsquarters, Horseweed, R. Pigweed (12-36”)

**8/3/16** Alf: 20” 5% open Flw

Weeds: C. Ragweed, C. Lambsquarters, Yellow Foxtail, Smartweed (18-32”)

**8/26/16** Alf: 10-13”

Weeds: Foxtail(s) (9”)

*Weeds recorded in non-treated control plots

**Results:**

First Cut Rating and Yield (6/29/16):

| Rating Type | | | Alfalfa Cover (%) | | Broadleaf Cover (%) | | Alfalfa Yield (Tons/A) | | Broadleaf Yield (Tons/A) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Trt No. | Seeding Rate (lb PLS/A) | Glyphosate used | | | | | | | | |
| 1 | 7.7 | Y | 99.5 | a | 0 | d | 1.01 | - | 0 | b |
| 2 | 7.7 | N | 64 | c | 35 | ab | 1.01 | - | 0.55 | a |
| 3 | 9.3 | Y | 99.3 | a | 0.8 | d | 1.02 | - | 0 | b |
| 4 | 9.3 | N | 73.5 | bc | 25.8 | bc | 1.08 | - | 0.20 | ab |
| 5 | 11 | Y | 95.8 | a | 1 | d | 0.92 | - | 0 | b |
| 6 | 11 | N | 63.3 | c | 36.3 | ab | 0.80 | - | 0.49 | ab |
| 7 | 12.3 | Y | 97.8 | a | 1.5 | d | 1.04 | - | 0 | b |
| 8 | 12.3 | N | 63 | c | 36.3 | ab | 0.99 | - | 0.43 | ab |
| 9 | 13.6 | Y | 98.5 | a | 0.8 | d | 1.20 | - | 0 | b |
| 10 | 13.6 | N | 51 | d | 40 | a | 1.11 | - | 0.42 | ab |
| 11 | 15.1 | Y | 95.8 | a | 0.3 | d | 0.88 | - | 0 | b |
| 12 | 15.1 | N | 78 | b | 20.8 | c | 0.98 | - | 0.28 | ab |
| 13 | 16.6 | Y | 98.3 | a | 1 | d | 0.84 | - | 0 | b |
| 14 | 16.6 | N | 75.5 | bc | 23.3 | c | 0.84 | - | 0.22 | ab |
| 15 | 18.4 | Y | 96.3 | a | 0.8 | d | 0.99 | - | 0 | b |
| 16 | 18.4 | N | 69 | bc | 30 | abc | 0.82 | - | 0.49 | ab |
| | | | | | | | | | | |
| LSD P=.05 | | | 8.87 | | 8.03 | | 0.24 | | 0.31 | |
| Standard Deviation | | | 6.24 | | 5.65 | | 0.17 | | 0.21 | |
| CV | | | 7.57 | | 35.67 | | 17.68 | | 112.08 | |

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)

No grass in first cut

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Second Cut Rating and Yield (8/3/16):

| Rating Type | | | Alfalfa Cover (%) | | Broadleaf Cover (%) | | Grass Cover (%) | | Alfalfa Yield (Tons/A) | | Broadleaf Yield (Tons/A) | | Grass Yield (Tons/A) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trt No. | Seeding Rate (lb PLS/A) | Glyphosate Used | | | | | | | | | | | | |
| 1 | 7.7 | Y | 100 | a | 0 | b | 0 | b | 1.17 | - | 0.00 | - | 0.00 | - |
| 2 | 7.7 | N | 93.5 | bc | 5.5 | a | 1 | ab | 1.06 | - | 0.08 | - | 0.00 | - |
| 3 | 9.3 | Y | 99.8 | a | 0.3 | b | 0 | b | 0.99 | - | 0.00 | - | 0.00 | - |
| 4 | 9.3 | N | 96 | b | 3 | a | 1 | ab | 0.93 | - | 0.09 | - | 0.01 | - |
| 5 | 11 | Y | 99.5 | a | 0.3 | b | 0.3 | b | 1.01 | - | 0.00 | - | 0.00 | - |
| 6 | 11 | N | 94.8 | bc | 4.3 | a | 1 | ab | 0.87 | - | 0.12 | - | 0.00 | - |
| 7 | 12.3 | Y | 99.5 | a | 0.3 | b | 0.3 | b | 1.07 | - | 0.00 | - | 0.00 | - |
| 8 | 12.3 | N | 94 | bc | 4.5 | a | 1.5 | ab | 0.90 | - | 0.07 | - | 0.03 | - |
| 9 | 13.6 | Y | 99.8 | a | 0 | b | 0.3 | b | 0.93 | - | 0.00 | - | 0.00 | - |
| 10 | 13.6 | N | 92.8 | c | 4.5 | a | 2.8 | a | 0.98 | - | 0.11 | - | 0.03 | - |
| 11 | 15.1 | Y | 99.8 | a | 0 | b | 0.3 | b | 1.09 | - | 0.00 | - | 0.00 | - |
| 12 | 15.1 | N | 94.5 | bc | 3.5 | a | 2 | ab | 0.88 | - | 0.13 | - | 0.00 | - |
| 13 | 16.6 | Y | 100 | a | 0 | b | 0 | b | 1.04 | - | 0.00 | - | 0.00 | - |
| 14 | 16.6 | N | 92.8 | c | 5.5 | a | 1.8 | ab | 1.05 | - | 0.08 | - | 0.04 | - |
| 15 | 18.4 | Y | 99.5 | a | 0.5 | b | 0 | b | 1.09 | - | 0.00 | - | 0.00 | - |
| 16 | 18.4 | N | 93.7 | bc | 5.3 | a | 1 | ab | 1.00 | - | 0.09 | - | 0.01 | - |
| | | | | | | | | | | | | | | |
| LSD P=.05 | | | 1.95 | | 1.8 | | 1.27 | | 0.22 | | 0.08 | | 0.02 | |
| Standard Deviation | | | 1.37 | | 1.27 | | 0.89 | | 0.16 | | 0.05 | | 0.02 | |
| CV | | | 1.44 | | 56.39 | | 112.09 | | 15.45 | | 112.99 | | 247.91 | |

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)