



Reduced Nitrogen Trial

2022 summer cover crop after rye harvest

18 acres were seeded with a summer cover.
I substituted oats for buckwheat.

Seeding date was 7/22/22



| Cover Crop Species | Rate #/ac | Acres | Germ % | Purity % | Rate/Mix | lb./ac | Total lbs. | Depth (in) | Tolerance | Type | Planting | Emergence | Flowering | Harvest |
|--------------------|-----------|-------|--------|----------|----------|------------------|------------|------------------|------------|-------|----------|-----------|-----------|---------|
| Cowpea | 30 | 18.81 | 85.0% | 95.0% | 20% | 6.0 | 113 | 0.75-1.0 | 32 F | WSB-L | - | 5/8 | 8/7 | - |
| Millet | 10 | 18.81 | 85.0% | 95.0% | 25% | 2.5 | 47 | 0.5-1.0 | 32 F | WSG | - | 5/7 | 8/7 | - |
| Clover, Crimson | 10 | 18.81 | 85.0% | 95.0% | 35% | 3.5 | 66 | 0.25-0.5 | to 10 F | CSB-L | 3/30 | 4/12 | 5/16 | - |
| Sunflower | 3 | 18.81 | 85.0% | 95.0% | 15% | 0.5 | 8 | 0.75-1.5 | 22 to 25 F | WSB | - | 4/24 | 8/7 | 8/29 |
| Turnip | 3 | 18.81 | 85.0% | 95.0% | 60% | 1.8 | 34 | 0.25-0.5 | to 10 F | CSB | 3/30 | -- | -- | 9/27 |
| Buckwheat | 45 | 18.81 | 85.0% | 95.0% | 35% | 15.8 | 296 | 0.5 | 32 F | WSB | - | 5/8 | 9/12 | -- |
| | | | | | 383% | 30 lbs. per Acre | | 564 Total Pounds | | | | | | |



Rye was seeded on 19 acres
that was previously soybeans.

Seeding date was 9/27/2022





Cattle grazed from November 1st till March 15th

Sprayer Pre Pass

4/19/23
Roundup Powermax
Harness Xtra
Dicamba



Chicken manure was applied on
4/29/23

I'm not sure how much was available
due of the lack of rainfall.

Normally it's 50% available the first
year.



MVTL

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MEMBER
ACIL

MANURE ANALYSIS REPORT

FARM NUTRIENTS-REMBRANDT
C/O REMBRANDT ENTERPRISES
REMBRANDT IA 50576

Date Received: Nov 10 2022
Date Reported: Nov 15 2022

PO #: FREEMONT FARMS
Account #: 001970
WO #: 17-8040
Lab #: 22-N11106

SAMPLE INFORMATION

Producer: FREEMONT FARMS
Site Name: 1W
Sample ID: 1W

Animal Species: CHICKEN
Site No:

| ANALYTE | ANALYSIS AS RECEIVED | TOTAL NUTRIENTS | |
|--------------------|-------------------------|-----------------|---------|
| | | lbs/1000 gal | lbs/Ton |
| Moisture, Total | 41.7 % | | |
| Ammonium-N | 0.68 % | 56.8 | 13.6 |
| Nitrogen, Organic | 2.50 % | 209 | 50.0 |
| Nitrogen, Total | 3.18 % | 266 | 63.6 |
| Phosphorus as P2O5 | 2.15 % | 180 | 43.0 |
| Potassium as K2O | 1.48 % | 124 | 29.6 |
| Sulfur | 3500 ppm | 29.3 | 7.0 |
| Zinc | 312 ppm | 2.6 | 0.6 |
| Iron | 581 ppm | 4.9 | 1.2 |
| Copper | 39.7 ppm | 0.3 | < 0.1 |
| Manganese | 295 ppm | 2.5 | 0.6 |
| Calcium | 88300 ppm | 737 | 177 |
| Magnesium | 3300 ppm | 27.5 | 6.6 |
| Sodium | 3010 ppm | 25.2 | 6.0 |

Approved by:

David Smahal, Feed Lab Manager New Ulm, MN



Planted on 5/4/23

2 hybrid trials

INT6342TRE- 113day

INT6493VT2P- 114 day

- Kinze 2500 with finger pickup meters
- Sharktooth floating trash whippers
- Narrow gauge wheels
- Yetter Twister closing wheels
- Spring downforce





Roundup Powermax
Atrazine
Explorer (Mesotrione)
5/17/23



1 pound of compost extract
was applied at V3 5/26/23.

32% with nitrogen stabilizer 6/15/23

60 units whole field
127 total units

110 units to trial strips
177 total units





6/23/23

2.8 inches since planting



8/18/23



9/13/23



October 5th

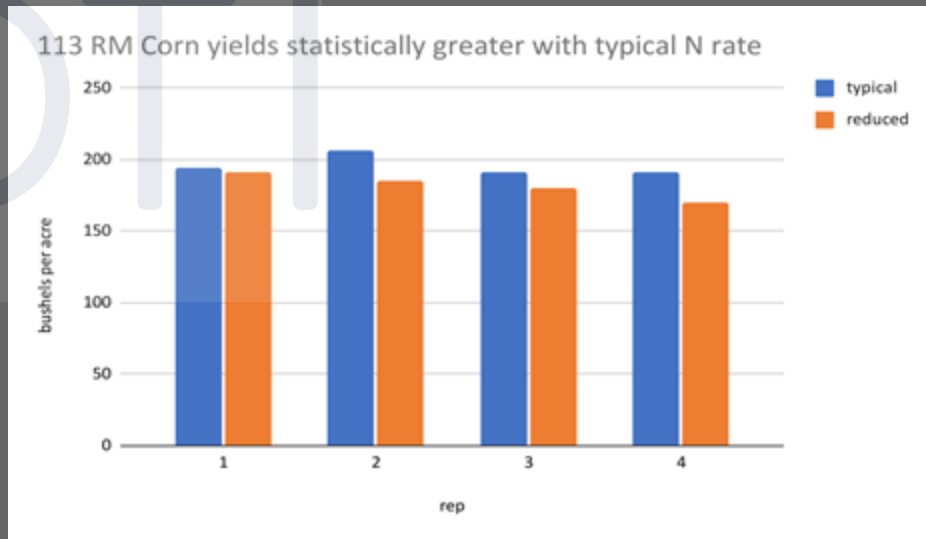


INT6342

Previous crop soybeans with rye cover.

| maturity | trt | Nrate | rep | yield |
|----------|---------|-------|-----|-------|
| 113 | typical | 177 | 1 | 194 |
| 113 | typical | 177 | 2 | 206.6 |
| 113 | typical | 177 | 3 | 191.6 |
| 113 | typical | 177 | 4 | 191.2 |
| 113 | reduced | 127 | 1 | 190.9 |
| 113 | reduced | 127 | 2 | 185.4 |
| 113 | reduced | 127 | 3 | 180.6 |
| 113 | reduced | 127 | 4 | 170.6 |

| | | | | |
|-----|---------|-----|-----------|-------|
| 113 | typical | 177 | MEAN | 195.9 |
| 113 | reduced | 127 | MEAN | 181.9 |
| | | | Diff | 14.0 |
| | | | LSD(0.05) | 13.7 |
| | | | Sig diff? | Y |



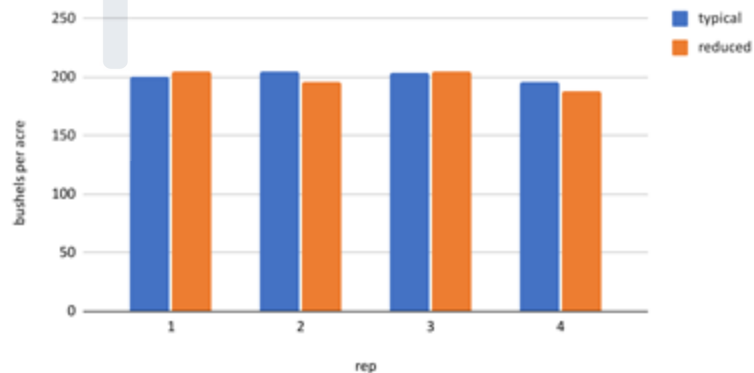
INT6493

Previous crop rye with summer cover

| maturity | trt | Nrate | rep | yield |
|----------|---------|-------|-----|-------|
| 114 | typical | 177 | 1 | 200.7 |
| 114 | typical | 177 | 2 | 204.8 |
| 114 | typical | 177 | 3 | 204.4 |
| 114 | typical | 177 | 4 | 196.5 |
| 114 | reduced | 127 | 1 | 205.1 |
| 114 | reduced | 127 | 2 | 196.5 |
| 114 | reduced | 127 | 3 | 204.8 |
| 114 | reduced | 127 | 4 | 187.8 |

| | | | | |
|-----|---------|-----|-----------|-------|
| 114 | typical | 177 | MEAN | 201.6 |
| 114 | reduced | 127 | MEAN | 198.6 |
| | | | Diff | 3.0 |
| | | | LSD(0.05) | 10.3 |
| | | | Sig diff? | N |

114 RM Corn yields statistically similar between typical and reduced N rates



| 113 RM CORN | Typical | Reduced |
|---------------------------------------|----------|-----------------|
| Topdress N rate (lb/ac) | 50 | 0 |
| Topdress N price (\$/lb N) | \$0.65 | \$0.00 |
| Topdress N cost (\$/ac) | \$32.50 | \$0.00 |
| Corn yield (bu/ac) | 195.9 | 181.9 |
| Corn price (\$/bu) | \$4.95 | \$4.95 |
| Gross returns (\$/ac) | \$969.71 | \$900.41 |
| Net returns (\$/ac) | \$937.21 | \$900.41 |
| | | |
| Loss from reduced rate (\$/ac) | | -\$36.80 |

| 114 RM CORN | Typical | Reduced |
|--|----------|----------------|
| Topdress N rate (lb/ac) | 50 | 0 |
| Topdress N price (\$/lb N) | \$0.65 | \$0.00 |
| Topdress N cost (\$/ac) | \$32.50 | \$0.00 |
| Corn yield (bu/ac) | 201.6 | 198.6 |
| Corn price (\$/bu) | \$4.95 | \$4.95 |
| Gross returns (\$/ac) | \$997.92 | \$983.07 |
| Net returns (\$/ac) | \$965.42 | \$983.07 |
| | | |
| Savings from reduced rate (\$/ac) | | \$17.65 |