

Agronomy Extension Research Update



2008 Professional Crop Advisor's Update

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Methods

- ❑ Project established in 2006 on Mike Phillips' farm in Mauzy
- ❑ Planted seven different cover crop treatments in late summer/early fall of 2006
 - Three replications of each
- ❑ Each treatment was rolled/killed at three different timings
 - Effectiveness of rolling was determined, herbicide applied if needed
- ❑ Cover crop biomass, soil samples, and cover samples were taken prior to each rolling
- ❑ Corn was planted no-till after each rolling
 - **0 lbs N applied to corn**
- ❑ Whole plot was harvested with chopper and yield determined

Rye/Radish Planting Arrangement

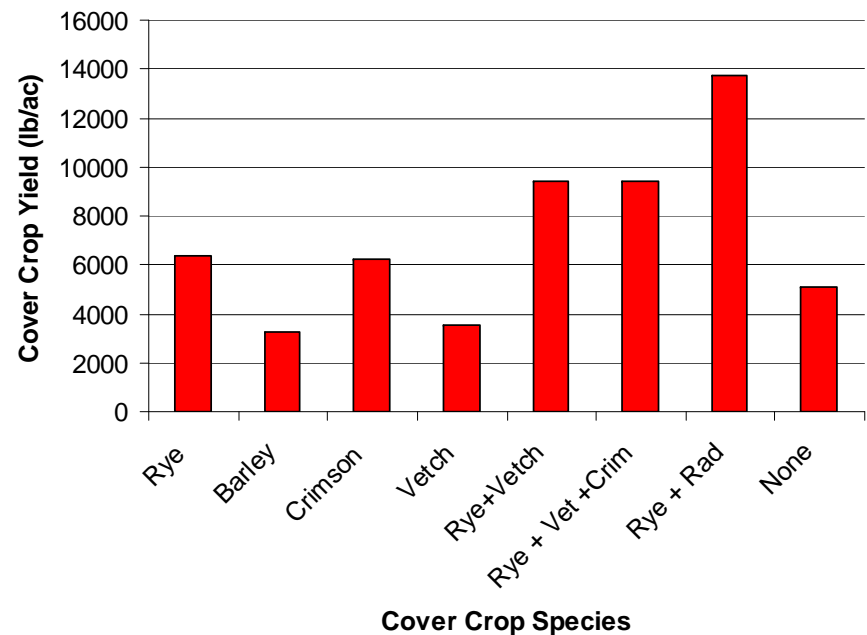


← 30" Wide →

Results: Cover Crop Yields

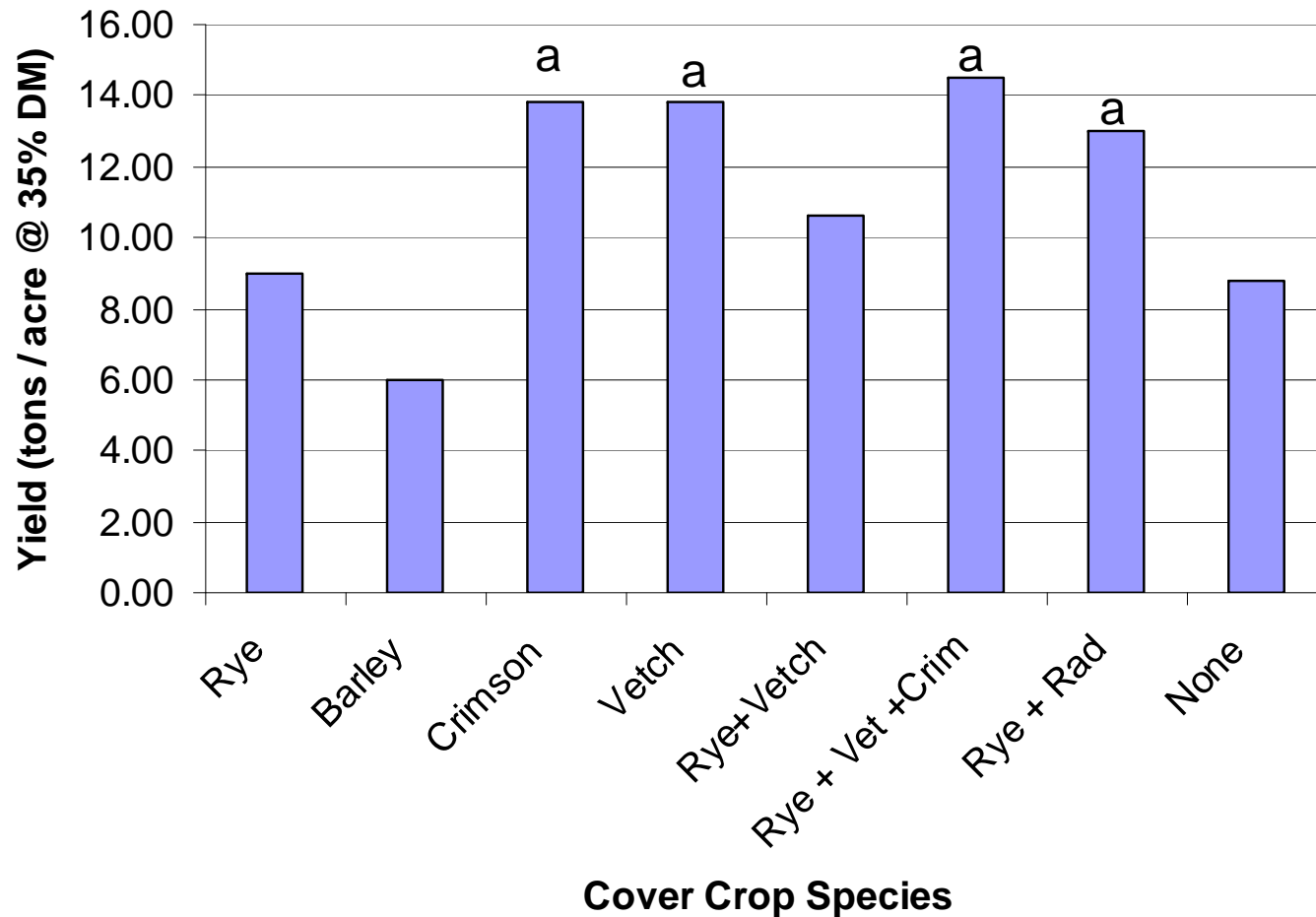
- Greatest cover yield from rye/radish
 - Deep tap roots improved nutrient and water use efficiency
 - Rye was more mature in this treatment, but planted the same day??
- Bi-cultures of rye with legumes yielded better than solid stands of legumes
- Lowest cover yield from barley and vetch alone
 - Vetch did not provide 100% ground cover

Biomass of Cover Crop Treatments on May 10



Results: Corn Silage Yield

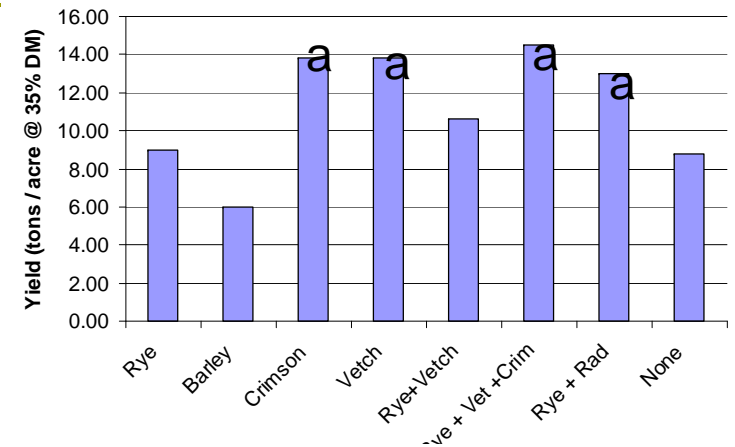
Corn Silage Yield for May 10 Rolling



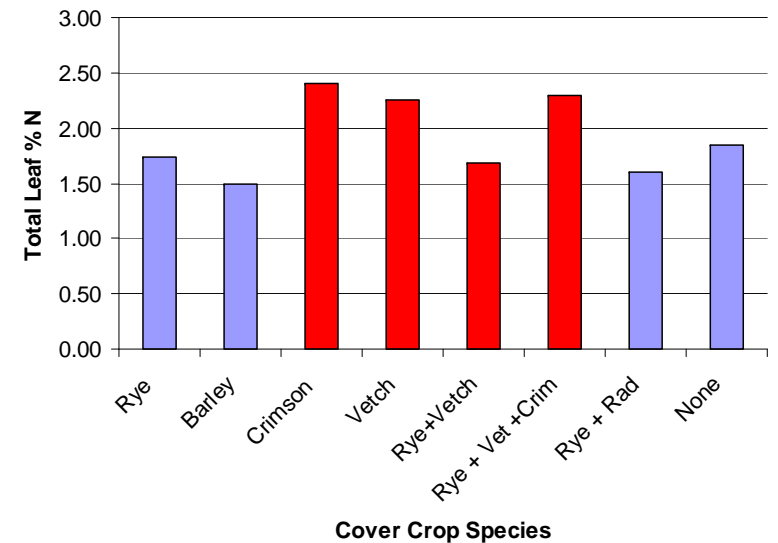
Results: Corn Silage Yield

- Surprise was from the rye / radish mix
 - Yielded as well as C, V and R/V/C
 - Radish not a legume
 - Leaf %N was low
 - Available N was low
 - C:N was highest
 - What led to high yields?

Corn Silage Yield for May 10 Rolling



% N in Corn Ear Leaf Samples Across Cover Crop Treatments



Positives of Rye/Radish

- ❑ 2007 extremely dry
- ❑ Radish roots penetrated up to 2 feet, opening huge macropores (big holes)
- ❑ Radishes scavenged lots of N in their tap root, which upon rotting was released to the corn
- ❑ Also improved the WUE of the corn crop
- ❑ Furthermore, rye/radish yielded significantly more than any other treatment



Conclusions

- ❑ Largest corn yields seen from crimson clover, vetch, rye/vetch/clover, and rye/radish
- ❑ Clover, vetch and rye/vetch/clover provided greatest available N for corn
- ❑ Rye/vetch alone provided greatest total N contribution, but N failed to be taken up