

## **Annual Forages for Hay and Grazing - Two Crops in One Season - A Demonstration Project**

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A field study was conducted at the CREC to demonstrate an annual forage haying/grazing system. In the fall of 2003 Boreal winter triticale was direct seeded into a 30-acre field of spring wheat residue. The residue held moderate amounts of snow and the winter triticale survived the winter well with limited signs of winterkill in the spring. An application of 60 pounds of nitrogen fertilizer was top-dressed in early April of 2004. Above average temperatures in April provided early growth, illustrating the ability of winter triticale to provide early competitive growth for forage use. The rapidly growing forage was windrowed with a mower conditioner on June 17. Windrowing of the forage was initiated when the triticale was approximately 75% headed. The forage was harvested by baling into large round bales on July 2. Triticale forage yield was determined to be 3.2 tons/ac or 6.4 bales per acre. This yield represents a significant contribution of early-season forage.

On July 16, a number of warm- and cool- season forages were direct seeded into the winter triticale stubble to better utilize the remainder of the growing season in a beef cow/annual cropping system. All forages were sown in strips across the field. Cool-season forages sown included Haybet barley and oats. Turnip, forage rape, chicory and field pea were also intercropped with oats. Warm-season crops included pearl millet, piper sudangrass, and german millet. The below average temperatures and generally dry conditions that prevailed during the remaining summer and fall impacted these forages differently. Cool-season crops managed to produce moderate growth with the limited rainfall. The warm-season crops produced limited growth during this period where heat units were 75% of normal. A light frost on August 20 stopped the majority of warm-season forage growth. A killing frost occurred on October 1, although the turnips and forage rape still remained green. The forage growth that resulted from both the direct-seeded forages and the triticale regrowth was windrowed on September 17. Beginning on October 28, a total of 130 cows grazed the swaths of mixed forages on approximately 25 acres. A cross fence was established to allow increments of five acres to be sequentially grazed. Observations would indicate that the cattle were relatively efficient in utilizing both the forage lying in windrows and any other plant material that remained in the stubble such as the turnips. The forage in this system allowed 130 head of cattle to late-fall graze for 30 days in a field that would have otherwise been idle.



**Turnips in the field on October 18, prior to being grazed by cattle. The turnips proved to be a popular and palatable forage source for cattle.**

This past spring (2005) the field was no till seeded on May 4 & 5<sup>th</sup> to Haybet barley with a winter cereal interseed. After planting, 60 lbs./ac of N from urea was broadcast in the field, just prior to a rain. Half of the field was interseeded with winter triticale while the other half was interseeded with winter rye. The idea (based on an unpublished field trial, CREC 2003) is to harvest the Haybet barley approximately 10 days after heading as a cured, baled forage. Winter triticale and rye planted in the spring usually will not vernalize, hence they will not head out and will maintain vegetative growth. The intent is to late-season graze the stubble with beef cows to further utilize this field and determine how the interseed will contribute to the overall system.

We hope to answer the following questions from this demonstration. Will winter triticale or winter rye interseeded in hay barley provide an environment to graze in the same season? How many cows can graze per acre and for how long? Will the winter triticale or winter rye overwinter to provide early-season grazing or an early hay crop? If this occurs there would be ample time to seed a late-season crop like soybean or a warm-season forage such as sudangrass or millet, to utilize the field for as much of the growing season as possible.