CREC Cover Crop Research Update

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Despite the challenges of the late 2009 season, several cover crop trials were conducted during the growing season or established in the fall at the CREC. The CREC has established cover crop trials at the center as well as on farm near Robinson, Wishek, McKenzie, and Pingree, ND. The objectives for these trials range from evaluating plant species and varieties for desired cover crop characteristics, to cover crop management practices, to the integration of cover crops to current crop rotations and cropping systems.

Cover crop research projects that continued in 2009:

- **Field pea relay cover crops** – evaluating seeding rates and fostering methods to establish vigorous stands and fix nitrogen in the fall.
- **Rye variety rolling evaluations** – comparing rye varieties to determine those that produce enough biomass and proceed to anthesis early enough to be terminated successfully with the roller/crimper in the spring
- **Cover crops to extend the grazing season** – comparing cover crop species (hairy vetch, turnip, sudan, red clover, winter peas) and different varieties of winter rye and triticale to find those best suited for companion planting with oat hay crops to extend the grazing season.
- **Rotational benefits of cover crops and manure in low input systems** – evaluate the number of seasons that subsequent crops are influenced by a single cover crop or manure application.
- **Cover crop termination method and winter cereal survival** – evaluating the winter survivability of winter wheat, triticale, and rye in contrasting seed beds created by tilling, mowing, and rolling a sudan grass cover crop in the fall.

Research and demonstration projects initiated in 2009

- **Cover crops for cellulosic biofuel crops** – evaluating legume cover crops with the best rotational fit for cellulosic biofuel crops.
- **Cover crop management with the roller-crimper** – Evaluating different cover crop species and seeding rates for effective termination using the roller-crimper.
- **Imitating strip till using cover crops** – evaluating high and low residue cover crops in alternating rows to create low residue strips that will warm earlier in spring.
- **Precision cover crop mixture demonstration** – evaluating the performance of cover crops at summit, midslope, and toeslope positions along a topographic gradient.

Salinity cover crop demonstration - evaluating cover crop species and mixtures along a salinity gradient for their ability to establish and grow under saline conditions.