

Submitted to Northeast Farming

## **Interseeding-A Viable Crop Alternative**

**By: Juanita Facteau**

The establishment of cover crops following silage corn is a significant problem in the New England area due to late harvest dates and short growing seasons. An alternative method, called interseeding, is being field tested around the Northeast area with surprising results. Interseeding is the practice of seeding cover crops at corn planting and has not been feasible in the past, but with new herbicide technology, farmers now have this option.

Cover cropping is a practice with many benefits. It can reduce soil erosion, recycle and fix nitrogen, build biomass, and improve soil and water quality. Cover crops have been successfully established at time of corn planting using conventionally bred corn hybrids tolerant of Imidazolinone herbicides. These herbicides can be used to inhibit the growth of the cover crop while successfully controlling the weeds, without competing with the corn. The cover crops that can and have been successfully trialed are red and white clover, alfalfa, hairy vetch, annual and perennial ryegrass, just to name a few, with more trials showing even more possibilities for the future.

After corn silage harvest, the cover crop that was inhibited in growth due to the herbicide and corn shading is now able to grow, increasing stand density of grasses or legumes. This growth will help to provide the needed soil protection and water quality benefits many New England farmers are looking for throughout the winter months.

Steve Stocking is a full-time farmer in Fairlee, Vt., since 1965, cash crop hay and corn silage. With the help of SARE (Sustainable Agriculture, Research and Education) and Juanita Facteau, Soil Research Consultant from Hartland, Vt., an interseed test

project was developed and established on an eight acre field on lower meadow Connecticut River flood plain land in Orange County, Vt., for the 2004 growing season.

This particular field was chosen because of its locality and site specific problems. This field experiences flooding frequently during the winter and spring months, flooding in the past that has been so severe that reconstructive programs had to be implemented to rebuild the riparian buffer area and retaining wall along this field. This field has little to no slope, is classified as Hadley-very fine sandy loam and has been in corn for five years.

After spring soil testing, Stocking applied 20 tons per acre of dairy manure and at time of planting he applied 50 pounds of DAP and 50 pounds  $K_2O$  with mineral packet. After conventional tilling with a field cultivator-perfecta, Stocking seeded this test field on May 27<sup>th</sup> and 28<sup>th</sup> with three different types of IMI corn: Golden Harvest H-68091 (99day); Garst 8766IT (99 day); and Pioneer 34B28 Clearfield (109day). He followed that up with his interseed planting which split the field down the middle: Red Fescue and Orchardgrass at the rate of 20 pounds per acre on one side and a combination of 8 pounds per acre Red Clover and 4 pounds per acre Dutch White Clover on the other side. A 16-row corn control without interseeding was left on the outside perimeter of the field, for yield testing purposes. Herbicides were sprayed as follows: Pursuit 1.44 ounces per acre and Callisto 5.5 ounces per acre in the grass test plot and Pursuit 1.44 ounces per acre and Python 1 ounce per acre in the legume test plot.

Results of this interseeding were mixed, yet uniquely surprising. The clover showed little to no sign of establishing itself until late in the season, about mid-August, which is not the norm. This late start was probably due to an unexpected enhanced herbicide repression brought on by unavoidable spring spraying under wet and cold

conditions. Be sure to follow your herbicide consultant's advice or product labeling information carefully to avoid an unwanted outcome.

A similar result happened in the grass combination that was planted, this time due to a poor selection in the grass regime, the Red Fescue, and enhanced herbicide repression. The grass plot was patchy, but more established than the legumes, and the sparseness could be directly related to the lack of Red Fescue growth. Red Fescue was found to be a poor choice in such light and sandy soil, but the Orchardgrass did well and could be considered a good interseed choice for sandy, floodplain areas.

Although the interseed results were not as expected, the IMI corn did phenomenal on this field, particularly the 109 day variety of Pioneer Corn. Corn yield tests showed that in the test area, 27.76 tons per acre were harvested and 28.30 tons per acre in the control area, of corn silage. Plant population was high and ears averaged 8-10 inches in length with 14-18+ row averages. Steve Stocking was highly impressed with the yield results, particularly the Pioneer, regardless of the interseed and has never had this kind of crop results on this field before. Steve feels this is due to the type of corn, the Pioneer later day variety and the amount of manure he added in the spring.

The difficulties in this project were used as an opportunity to re-evaluate the entire field and do a full series of soil tests to analyze what may have done to achieve better results. For this, the new USDA Soil Quality Test Kit was assembled and used. USDA has come out with a program that in its text walks you through twelve basic soil tests to determine soil quality: Respiration, Infiltration, Bulk Density and Compaction, EC, pH, Nitrate, Aggregate Stability, Slake, Earthworm, Physical Observations and Water Quality. The manual, which is completely downloadable from their website, assists



you in building the kit, testing the soil and recording the info on a series of charts. Then, you learn what these tests mean to the soil and how you can improve the soil and make more educated choices in field planning and preparation. Knowledge of the soil is an invaluable asset when it comes to farming.

On final assessment of this project; the grass portion of this field is approximately 50 percent covered, the legumes approximately 30 percent or less. This is a lower ratio than what was hoped for. Even so, what area is now seeded is well established and will provide better cover for the soil when spring flooding occurs than the ryegrass section that was seeded down after harvest in October. The soil is crusted over and lack of disturbance alone will help combat the effects of erosion and what is now established will also provide valuable biomass in the spring. A re-evaluation in the spring, after the effects of winter, would be ideal to determine visually and perhaps physically with the Soil Quality Test kits' series of tests, if the soil did indeed fare better with the interseed trial or without.

Interseeding *is* a viable crop alternative that *does* work. Interseeding was an established and well used field process before the age of tractors and high-tech equipment and it proved successful in not only preventing excessive weed growth but it worked as a soil builder by building bulk matter and biomass in the soil, added organic matter and providing erosion control as well. Modernizing the concept has proven to be the problem. How do you make it work and make it convenient has been the challenge. According to research done by Paul Salon, Plant Materials Specialist, USDA-NRCS, Syracuse, NY., this concept does work, as his test plots at Empire Farm Days have proven. Field trials

are working out the problems so that perhaps other farmers in the Northeast can take advantage of the interseed concept and make it can work for them too.

For more info on interseeding and if it would work for you, contact Paul Salon at:  
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