What Do Cover Crops Do?

- Enhance the diversity of life in the soil
- Increase soil infiltration and water holding capacity
- Attract honey bees and other beneficial insects
- Reduce erosion
- Increase soil organic matter
- Re-surface and recycle nutrients
- Reduce weed competition
- Add nitrogen (legume cover crops)
- Break disease cycles

Soil Test Results

Listed below are the soil nitrate nitrogen results.

<table>
<thead>
<tr>
<th>Location</th>
<th>Soil Nitrate - Nitrogen</th>
</tr>
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<tbody>
<tr>
<td>Field After Harvest (8/20/14)</td>
<td>220 lbs/ac.</td>
</tr>
<tr>
<td>Basic Mix (9/30/14)</td>
<td>80 lbs/ac.</td>
</tr>
<tr>
<td>Compaction Mix (9/30/14)</td>
<td>105 lbs/ac.</td>
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<tr>
<td>Legume Mix (9/30/14)</td>
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<td>Scavenging Mix (9/30/14)</td>
<td>64 lbs/ac.</td>
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<td>Pollinator Mix (9/30/14)</td>
<td>104 lbs/ac.</td>
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<td>Field 10 days after planting Rye (9/30/14)</td>
<td>191 lbs/ac.</td>
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*The nitrogen is not lost, it is in the cover crop!

Additional Resources

- Midwest Cover Crop Council
  www.mccc.msu.edu

- Natural Resource Conservation Services
  Soil Health initiative
  www.nrcs.usda.gov

- Minnesota Department of Agriculture
  http://www.mda.state.mn.us/protecting/conservation/practices/covercrops.aspx

Special Thanks

Rick Olson and Olson Farms for location and site preparation!

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Natural Resource Conservation Services
Sherburne Soil & Water Conservation District
14855 Highway 10
Elk River, MN 55330
(763) 241-1170 Ext. 4
www.sherburneswcd.org

SHERBURNE COUNTY
COVER CROP DEMONSTRATION
PLOTS 2014

Celebrating 70 years of conservation!

- August 16th planting date
- Seeding method—Vicon Broadcast Seeder followed by Culti-packers
- Cover crop following early harvested potatoes

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Species were selected to show a variety of environmental and soil benefits. These mixes are not meant to overwinter.

**Cover Crops Mixes**

**Cover Crop Basic**
A three variety mix that combines a grass (oats), Brassica (radish), and legume (Austrian winter pea) to improve soil health and soil bio diversity.

**Cover Crop Basic**
- Oats 33.6 lbs/ac. X .38/lb=$12.77
- Winter pea 20.25 lbs/ac. X .56/lb= $11.34
- Radish 2.4 lbs/ac. X 1.50/lb=$3.60
Total $27.71/ac.

**Compaction Mix**
The large tap roots of the radish and turnips can help break up field compaction.

**Brassica and Compaction**
- Oats 33.6 lbs/ac. X .38/lb=$12.77
- Radish 4.8 lbs/ac. X 1.50 = $7.20
- Turnip .6 lbs/ac. X 2.60/lb=$1.56
Total $21.53/ac.

**Nutrient Scavenging**
This mix is quick to establish and deep rooted. It resurfaces nutrients from deeper in the soil profile.

**Nutrient Scavenging**
- Oats 22 lbs/ac. X .38/lb=$8.36
- Radish 4.8 lbs/ac. X 1.50 = $7.20
- Canola 1.5 lbs/ac. X 1.50/lb=$2.25
- Spring Barley 20lbs/ac. X .31/lb=$6.20
Total $24.01/ac.

**Pollinator Mix**
This mix was planted for observation on late season blooming and pollen/nectar sources for bees and other pollinators.

**Pollinator**
- Oats 39.2 lbs/ac. X .38/lb=$14.90
- Buckwheat 14.8 lbs/ac. X 1.39 = $20.57
- Mustard .8 lbs/ac. X 1.50/lb=$1.20
- Phacelia 1.2 lbs/ac. X 5.80/lb=$6.96
Total $43.63/ac.

* Note: Oats cost $12.00/bushel (32lbs.) and other seed in small quantities increase the cost per acre. Use these costs for comparison between the mixes, not as an actual on-farm cost.