Cover Crop Seeding Methods

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What Do Farmers Want?

• Fast
• Cheap
• Simple
• Payback
• Not a “Weed”
Challenges To Seeding

- Time
- Available Equipment
- Optimum Seeding Dates
- Variable Planting Conditions
- Difficulty of Planting into heavy residue.
### Seeding Dates

#### Midwest Cover Crops Council

<table>
<thead>
<tr>
<th>Soil Builder</th>
<th>Nonlegumes</th>
<th>Erosion Fighter</th>
<th>Nitrogen Scavenger</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Barley, Winter (C)</td>
<td>Buckwheat (C)</td>
<td>Millet, Japanese (C)</td>
</tr>
<tr>
<td></td>
<td>Millet, Pearl (C)</td>
<td>Oats (C)</td>
<td>Rye, Winter Cereal (C)</td>
</tr>
<tr>
<td></td>
<td>Ryegrass, Annual (C)</td>
<td>Sorghum-sudangrass (C)</td>
<td>Sudangrass (C)</td>
</tr>
<tr>
<td></td>
<td>Triticale, Winter (C)</td>
<td>Wheat, Winter (C)</td>
<td>Brassicas</td>
</tr>
<tr>
<td></td>
<td>Radish, Oilseed (C)</td>
<td>Rapeseed/Canola (E)</td>
<td>Turnip, Forage type (C)</td>
</tr>
<tr>
<td></td>
<td>Alfaalfa - Non-dormant (E)</td>
<td>Clover, Berseem (E)</td>
<td>Legumes</td>
</tr>
<tr>
<td></td>
<td>Clover, Crimson (E)</td>
<td>Clover, Red (C)</td>
<td>Cowpea (E)</td>
</tr>
<tr>
<td></td>
<td>Pea, Field/Winter (E)</td>
<td>Sweetclover (C)</td>
<td>Mixes</td>
</tr>
<tr>
<td></td>
<td>50% HV/50% WC Rye (C)</td>
<td>Vetch, Hairy (C)</td>
<td>50% HV/50% WC Rye (C)</td>
</tr>
<tr>
<td></td>
<td>50% W.Pea/50% OSR (E)</td>
<td>60% A Ryegr/40% OSR (E)</td>
<td>60% Cr/C/40% A Ryegr (E)</td>
</tr>
<tr>
<td></td>
<td>60% Cr/C/40% Oats (E)</td>
<td>50% Oats/40% OSR (C)</td>
<td>(Example)</td>
</tr>
</tbody>
</table>

Reliable Establishment: **Midwest Cover Crops Council**

Freeze Risk to Establishment: Requires Aerial Seeding or Interseeding of Cover Crop

Frost Seeding: Requires Aerial Seeding or Interseeding of Cover Crop

Cash Crop Growing Period: Requires Aerial Seeding or Interseeding of Cover Crop

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**Midwest Cover Crops Council**

(Example)
Seeding Methods

- Aerial
- Inter seeding
- Broadcast during harvest
- Broadcast seeding after harvest
- Broadcast and incorporate
- Drill/Plant
- May use more than one seeding method.
Aerial/Inter seeding

- Fast
- Timing
  - Corn 50% sunlight hitting the ground. (Dry leaves up to the ear)
  - Soybeans leaves beginning to yellow.
- Cost
- Spreading Distribution
  - Crop canopy
- Effectiveness
  - Corn
  - Soybeans
Seeding at Harvest

• Would slow down harvest.
• Would work best with low seeding rates.
• Would seeding happen before or after chaffer.
• Larger combines may not be able to spread header width.
Broadcast After Harvest

- Fast
- Higher seeding rates resulting in increased cost.
- Possible delayed germination due to weather and residue.
  - Seed may not reach the soil initially.
- Add to fertilizer
  - Spread pattern
  - Seed damage
Broadcast and Incorporate

• Can be fast method.
• Incorporation can result in faster germination.
• Depth control?
  – Typical cover crop seeding depth ¼-1/2 in.
Drill

- More time consuming
- Planting conditions
- Lower seeding rates and seed cost.
- Faster emergence
- Drill availability
Row Unit Seeding

- Planter adaptability
  - Seeding rates
  - Seed size and shape
- Better Seed Placement
- Faster Germination
- Seed Cost Reduction
- Single species seeding's may require planting on the contour.
Multiple Seeding Methods For Mix

- Equipment available
  - Seed compatibility with seeding equipment.
  - Species seeding compatibility
- Ease of establishment of species
  - Seed to soil contact/seeding depth.
- Optimum planting times of species
  - Survivability
Inter Seeding into Corn

- Corn 50% sunlight hitting the ground. (Dry leaves up to the ear).
- Cover Crop will not interfere with harvest.
- Seeding is done prior to harvest.
Inter Seeding into Corn

Inter Seeded 9/4/13
Seeding Rate
Approximately 10 lbs./ac. Radish, 40 lbs. Oats
Photos 10/3/13
Inter Seeded 9/4/13
Seeding Rate
Approximately 10 lbs./ac. Radish,
40 lbs. Oats
Photos 10/18/13
Inter Seeding into Corn

Inter Seeded 9/11/13
Seeding Rate
Approximately 2 bu. Rye
Photos 10/3/13
Inter Seeding into Corn

Inter Seeded 9/11/13
Seeding Rate
Approximately 2 bu. Rye
Photos 10/21/13
Inter Seeding into Beans

- Seeding time when leaves are beginning to yellow.
- Do prior to leaf drop.
- Select cover crop that will not interfere with harvest.
Interseeding into Soybeans

- Row Width Concerns
  - 10 in. wide tires,
  - 75 ft. spread width
  - 2% field driven over
Inter Seeding Crimson Clover into Beans

Inter seeded 8/23/12
Seeding rate approximately 10 lbs./ac.
Bean harvest 10/2/12
Photos 10/19/12
Inter seeded 9/5/13
Seeding rate
  approximately Oats 40 lbs./ac.,
crimson clover 10 lbs./ac.
Bean harvest 9/27/13
Photos 10/3/13
Inter Seeding

• Inter seeding
  – Provides the time for seeding to be done.
  – Provides adequate fall growth for the cover crop.

• Some crops are more vigorous than others.

• Select crop and seeding to not interfere with harvest.
Get killed in a timely manner
Soil moisture management
Nitrogen management
Potential Weed?