Cover crops
Farmer / Agronomic Perspective

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Crop Inputs and Consulting
Why A Cover Crop

• Build organic matter
  – Better water infiltration in wet years
  – More water holding capacity in dry years
  – Soil structure
  – Less compaction

• N Scavenger

• Soil builder, root zone de-compaction

• Erosion control

• Can help fight weeds

• Recycle nutrients

• Improve water quality
Watch outs
My Observations

• Crop Insurance
  – Termination of cover crop prior to new crop
• Cover crops as weeds
  – Dormant seed, difficult to kill
• Seed Corn Maggots
  – Flies like to lay eggs in decaying organic matter
• Armyworm
  – Moths lay eggs in early spring in ryegrass
• Allelopathy
  – Kill grass cover crops 2 weeks prior to planting corn
Termination of Cover Crop

• Allelopathic effects

• Costs
  – Termination of grass species 48oz 4# glyphosate approximately $6 / ac
  – Cooler temps make sure plants are actively growing
  – Timely termination
    • Stunted growth - N tie up
Nutrient Applications

• Nitrogen
  – Grass species higher c:n ratio
  – May need a little more N
  – Split application of N
  – Don’t want to put N in when terminating cover crop especially rye species
Establishing Cover Crops

- **Seed**
  - Cereal Rye $17/ Bu, 50#-100#, $15-$31/ Ac
  - Turnips $3/ lb, 1#-3#, $3-$9 / Ac
  - Radishes $3.75/ lb, 5#-10#, $18-$36 / Ac
  - Vetch $16.50/ lb, 15#-20#, $247/ Ac
  - Red Clover $2.00 / lb, 8#-12#, $16-24/ Ac
Establishing Cover Crops

• Seeding Methods
  – Grain Drill $15 / Ac
  – Row Crop Planter $18 / Ac
  – Aerial
    • Chopper $18 / Ac
    • Plane $15 / Ac
  – Broadcast $10 / Ac
Cereal Rye

- Cool Season, grass
- Annual
- Upright plant architecture
- Seeding depth: ¼ – 2 inches
- C:N ratio: 40 – 48
- Rated ‘very good’ at scavenging nitrogen from the soil
Turnips

- Cool Season, broadleaf
- Biennial
- Upright and spreading plant architecture
- Root crop
- High water use
- Seeding depth: ¼ – ½ inch
- Rated ‘good’ at scavenging nitrogen from the soil
Radish

- Cool Season, broadleaf
- Annual
- Upright and spreading plant architecture
- Root crop
- Seeding depth: \( \frac{1}{4} - \frac{1}{2} \) inch
- C:N ratio: oilseed 19 – 20
- Rated ‘very good’ at scavenging nitrogen from the soil
Vetch

- Cool Season, broadleaf
- Annual or biennial
- Legume (N-fixation)
- Prostrate plant architecture (vine)
- Examples include common, hairy, purple, smooth, etc.
- Seeding depth: 1 ½ – 2 ½ inches
- C:N ratio: 10 – 19
Red Clover

• Cool Season, broadleaf
• Biennial; short-lived perennial
• Legume (N-fixation)
• Upright plant architecture
• Common names: medium red clover, mammoth clover
• Seeding depth: ¼ – ½ inch
• C:N ratio: 15 – 23
Economics

• Using Ag Decision Maker Corn after Beans
• No Till
• Land costs $300
• Yield 180 bu @$4.20
• $11 Net Return
Economics

- Using Cereal Rye @ 56# $17
- Aerial Application chopper $18
- Terminate next spring $6
- Additional out of pocket costs implementing a cover crop $41
- Negative cash flow $30
Economics

- Using Ag Decision Maker Beans after Corn
- No Till
- Land costs $300
- Yield 50 bu @$10.94
- -$8 Net Return
Economics

• Using Cereal Rye @ 56# $17
• Aerial Application chopper $18
• Terminate next spring $6
• Additional out of pocket costs implementing a cover crop $41
• Negative cash flow $49
Economics -- Value of Benefits

• Build organic matter
  – Better water infiltration in wet years
  – More water holding capacity in dry years
  – Soil structure
  – Less compaction
• N Scavenger
• Soil builder, root zone de-compaction
• Erosion control
• Can help fight weeds
• Recycle nutrients
• Improve water quality
Questions?

• Thank you

• Additional questions or need to contact.

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