Cover Crops

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4# Winter Canola – 10# Lentils after wheat-

- We planted cover crops on 60% of our wheat acres
- All the wheat stubble with a cover crop will be planted to corn in 2008
- All the wheat straw was spread behind the combine.

Canola-Lentil

- We planted the winter canola-lentil mixture the last week in July in dry soil and it emerged Aug 3rd after a 6 inch rain.
- One field was planted Aug 10 in moist soil, and the volunteer wheat was sprayed out after planting but before emergence. Both options worked well.

What we do know

- Low seed cost
- Aug 1st –Good timing for labor and equipment use
- Can plant in dry soil or after a rain
- Planting before volunteer wheat emerges or after
- Canopy is achieved 30 days after emergence
- Huge growth of the canola where carryover N-Lentils get over taken by the canola.

No N fixed but the canola will capture the N so it will not move deep into the soil profile.

In low N areas, the canola will be short in height and the lentils will have more growth later to fix more N

Volunteer wheat can choke out the cover crop if it is thick enough, especially on the headlands- stripper head loss

What we do know

- The canola will speed up the crop residue breakdown over the next two years
- Having a green field to look at from August through November has significant positive spiritual, mental, and physical attributes

Pheasants really like being in the canola canopy especially evenings – really hard to find the down birds in the dark canopy and the dogs are not very effective either.

In the high N areas, the canola had ¾ inch diameter tap roots that were 12 inches long. In the compacted headlands, the canola didn't have a tap root, only small shallow roots. (Radishes are a better option for the headlands and compacted fields).

Additional Attributes

- The down wind canola smell is appealing to the senses and is prevalent all winter
- The cover crop emerged Aug 3rd , full canopy Sept 1st and didn't freeze out until Dec 1st. We had 3 months of a dark, damp, micro-organism friendly environment. Today the wheat straw can be seen, but it is completely rotten.

High Residue Environment

High Residue Environment (cont.)

Misconceptions

- Too much new technology is researched to prove it works rather than to determine if it does work. Many farmers that have invested in new technology are biased, believe in it, and say it works because they want to justify their investment.

Issues We Want Solved

- There cannot be any yield drag because of the cover crop.
- The cover crop needs to provide more aeration to the soil in the spring especially for:
- Wet and cold soils
- High clay soils
- soils with high amounts of residue lying on the surface
- No-till wheat stubble
- All the above at the same time

Challenges

- Prevent plantings
- Late plantings
- Slow uneven emergence
- Rotten corn seeds-poor stand
- Higher grain prices magnifies the issues above
- The above issues are the biggest challenge to my operation and the biggest reason farmers do not no-till

Planting Conditions

- Our cover crop fields had 14 inches of rain since they were planted. The morning after every rain last fall, the soils were fit to plant. Good aeration, lower soil moisture content, and excellent soil structure even on the high clay fields. This is mostly because the soil had a live root system growing in it.
- I am still expecting much better planting conditions in the cover crop fields than no cover crop even though there is no live root system present. This is one area that I want to believe is so.

Unknowns

- Fertilizer needs for the 08 corn- Apply 10# of sulfur and we are giving the fertilizer recommendation a 20# N credit. Because of the lentils and the canola captured some soil N that it will release mid season. The canola fields did have less soil N than others according to the soil tests

Carbon

- We will be paid well for sequestering carbon
- No-Till and cover crops are the only proven technology to store carbon
- All likely presidential candidates very interested in reducing Green House Gases and with a Democratic Congress
- Carbon emitters will be forced to reduce GHG emissions or by carbon credits
- Ag cannot store all the carbon that utilities need to offset

Carbon (cont.)

- Within 5 years, carbon credits will be worth more than $15 per year per acre
- SD Corn and NCGA are going to be very active in setting climate change policy.
- Most policy makers have no idea of the value of cover crops
- If we are not at the table, we are going to be for lunch

There is a Future in Cover Crops