



TIP SHEET



PLANTING CLOVER/RADISH COVERS AFTER WINTER WHEAT

POTENTIAL GOALS

- Improves soil health due to using less fall tillage
- Increases water infiltration and improves water
- Sequesters nutrients both with and without manure applications
- Improved weed suppression
- Increased forage potential



CONSIDERATIONS

- Herbicides may impact clover establishment. Herbicides cannot be used after planting clover. Refer to Penn State resource for herbicide persistence.
- If manure was applied it must dry down before seeding covers.
- Spread chaff to get an even distribution and avoid excessive volunteer wheat growth in straw windrows. At times, an herbicide may be needed for weed control in windrows.
- If additional forage is needed, select a clover/radish cover suiting your needs.

EXPECATIONS

- An increase in corn yield (10 to 30 bu/A have been observed) from crimson and berseem clover and radish with nitrogen (N) available for the following corn crop
- A yield increase with less nitrogen applied
- Rotational benefit for corn following a legume
- A significant income benefit from clover/radish cover use, however, the soil health improvement was felt to be the biggest gain

TIMING/APPLICATION CONDITIONS

- Plant as soon as straw comes off until September 1.
- Try to seed with rain in forecast (avoids seed sitting in dry soil for long periods).
- If needed, apply a selective herbicide (i.e. sethoxydim) prior to or after cover crop planting.

SEEDING RATE/COST

- Can seed brassicas (tillage radish, rape, etc.) and clovers (Crimson and Berseem). Brassicas should not exceed 20% of mix due to their competitive nature.
- Be sure clover is pre-inoculated or add inoculant before seeding
- Use 12 to 14 lbs. /A. Other trials have used 10 to 12 lbs. /A
- Clover and radish premixes are available; costs vary but are about \$1.60 to \$1.80 per pound.

SEEDING METHODS (NOTE: On this farm some acres have a manure application, but all seeded acres receive a shallow VT tillage pass)

1. Drill (application cost ~ \$15-\$18/A)
Advantages: Drill will put seed in ground; provides consistent stand. Better for larger seeded species
Disadvantages: Small size of seed box for grass seed can be more difficult to load.
2. Brillion Seeder (application cost ~ \$13 to \$16/A)
Advantages: Easier to load than drill and better soil to seed contact.
Disadvantages: May need a tillage pass before seeding.

SEEDING METHODS (continued)

3. Broadcast Seeder

Advantages: Cheap, easy to use.

Disadvantages: Seeding consistency; less soil to seed contact.

COVER TERMINATION

- Berseem and radishes will winter kill. Crimson clover will usually winter kill. For excessive volunteer wheat, a burndown is recommended prior to planting corn or after corn planting (i.e. planting green; a burndown can be applied a few days after planting green or with your corn herbicide).
- Read and follow all label directions.
- Using a conventional corn planter, this farm almost always plants directly into the cover crop residue no-till.

MACHEEL FARM COVER CROP ECONOMICS (conservative estimates):

Costs after Wheat per Acre	Income per Acre
Seed = \$30.00	Yield Increase 15 bu/A x \$3.50/ bu = \$52.00
Cover Planting = \$15.00	Tillage Savings (fall & spring) = \$20.00
Spring Burndown = \$12.00 (for vol. wheat only)	Reduced N use = \$18.00
Summer Herbicide = \$12.00 (optional)	Increased Soil Health = Priceless
Total Costs = \$57.00 to \$69.00	Total Savings = \$90.00

REFERENCES & RESOURCES

For Wheat:

-**UW-Extension**-Cover Crop Options for Winter Wheat in Wi- <https://fyi.uwex.edu/covercrop/after-wheat/> OR <https://fyi.uwex.edu/covercrop/wi-cover-crop-research/>

-**Kevin Shelley- NPM**- Cover crop selection & management guidelines following wheat or other small grains - <http://ipcm.wisc.edu/blog/2018/07/new-cover-crop-selection-publication/>

Use, Benefits, and Species Selection:

Cover Crops in Wisconsin- UW-Extension- <https://fyi.uwex.edu/covercrop/>

Purdue Agriculture- *Midwest Cover Crops Field Guide*, 2nd Ed. ID-433; Midwest Cover Crops. Available for purchase at: <https://ag.purdue.edu/agry/dtc/pages/ccfg.aspx>

Midwest Cover Crops Council- Multi State/Provinces Organization that facilitates sharing cover crop knowledge- <http://mccc.msu.edu/>

Herbicide and Cover Crop Interactions:

University of Missouri-http://weedscience.missouri.edu/extension/pdf/cover_crop_carryover_slideshow.pdf

Purdue University- <https://ag.purdue.edu/btny/weedscience/Documents/covercropparryover.pdf>

Penn State- <http://extension.psu.edu/plants> Or <https://extension.psu.edu/herbicides-persistence-and-rotation-to-cover-crops>

Nitrogen Rate Recommendations:

UWEX publication A2809, "Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin" (available at: <http://learningstore.uwex.edu/>).

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