



TIP SHEET



FROST SEEDING CLOVER INTO WINTER WHEAT

POTENTIAL GOALS

- Provide nitrogen for the following corn crop
- Provide forage (either grazed or cut) for livestock
- Improve organic matter
- Provide late season nectar for pollinators (i.e. Monarchs, bees, etc.)



CONSIDERATIONS

- Herbicides cannot be used after planting clover. Begin with a weed-free wheat field – use a registered burndown herbicide in the fall prior to planting winter wheat (Read and follow all herbicide label directions). See resources for herbicide and cover crop interactions on back.
- Herbicides from previous crops may impact clover establishment and could affect how clover is used for feed. Check to make sure herbicides used on previous crop are well-suited (Penn State).
- Select clover species based on GOALS and BENEFITS. Red clovers (medium and mammoth) are good for providing a Nitrogen (N) Source and/or Grazing and Forage Value (Purdue Agriculture).
- Optimum management of wheat is required to prevent clover competition.

TIMING/APPLICATION CONDITIONS

- Broadcast seed on frozen ground with little to no snow cover (late March or early April).
- If ground has thawed, broadcast when freeze/thaw period is predicted so seeds move into the soil.

SEEDING RATE/COST

- Clover should be seeded at a rate of 10-12 lbs. per acre (Stute and Shelley).
- Be sure clover is pre-inoculated or add inoculant before spreading.
- Clover seed costs vary greatly from year to year and may range from \$1.50 to \$3.00 per pound.

SEEDING METHODS

- Broadcasting seeding options
 1. ATV with broadcast spreader (application cost ~ \$3/A)
Advantages: Lighter for less compaction; increased speed
Disadvantages: More stops, may hold less seed
 2. Tractor with PTO broadcast spreader (application cost ~\$5/A)
Advantages: Utilize existing equipment & holds larger seed quantities (fewer stops to refill)
Disadvantages: More compaction; ground may need to be more frozen; slower
 3. Tractor with fertilizer buggy (application cost ~\$5/A)
Advantages: Can spread fertilizer and seed together (reduces passes over the field); no need to purchase additional equipment
Disadvantages: Timing may not be the best for fertilizer or clover seed. Ground needs to be frozen significantly, so seed/fertilizer may be too early. Greater risk of losing N.
 4. Drilling using a no-till or standard grain drill with legume box.
Advantages: Utilize existing equipment; application costs ~\$15/A; if no frost is present, drill will put seed in the ground; provides consistent stand.

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SEEDING METHODS (continued)

Drill- Disadvantages: May damage existing wheat crop; slower method

CLOVER TERMINATION

- In the fall after wheat harvest (preferably after a light frost) or in spring before the next crop is planted. **NOTE:** Spring termination is recommended to provide more benefits to soil from clover cover.
- Apply herbicide to actively growing clover. See herbicide labels for restrictions. Some may require at least 7 days before planting following spring crop.
- Follow up with normal corn herbicide program
- See Stute and Shelley for N recommendations and credits to get most benefit from clover N.

REFERENCES & RESOURCES

Frost Seeding:

Stute, J. and K. Shelley. *Frost Seeding Red Clover in Winter Wheat*. I-0209-3C. Online at:
http://ipcm.wisc.edu/download/pubsnm/redclover_0109.pdf

Use, Benefits, and Species Selection:

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

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://weeds.missouri.edu/extension/pdf/cover_crop_carryover_slideshow.pdf

Purdue University- <https://ag.purdue.edu/btny/weeds/extension/Documents/covercropcarryover.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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