

# Planting into Green Living Cover Crops

## PLANTING GREEN: CONSIDERATIONS (continued)

- When terminating a cover crop without herbicides by using a roller crimper, the planting date is strictly determined by the cover crop maturity. For cereal rye, this is at or after milk stage - past pollination. Use cereal rye if you intend to plant soybeans. For corn, use hairy vetch or crimson clover and wait until full flower to terminate.

For those who use herbicides, much more flexibility is available in relation to the planting date. Ideally a herbicide is sprayed 2 days ahead of planting in order to give it time to trans-locate to the cover crop roots. But be intentional about not spraying any more than you can plant before the next rain as a dying cover crop will not take up extra moisture and could keep you out of the field for an extended period of time.

Some farmers have had success spraying

after roll crimping but it is not recommended. Burn down herbicides can be reduced in a roll crimp situation. A little bit of herbicide goes a long way with this practice!

- If roll crimping in a separate pass, careful planning needs to be considered when doing end rows and point rows. **YOU CANNOT PLANT ACROSS MATURE CEREAL RYE STEMS!** Always try to roll in direction of intended planting.
- Cover crops 20 inches or more tall will risk shading rows and cause spindly stalks and possible yield loss.
- Conditions will change from year to year depending on the weather, your comfort level, and other factors. Have a backup plan in place in case the covers get too big and you reach the limitations of your current planter setup.

*"Planting green" is a concept of planting a primary crop into an actively growing cover crop with a no-till planter or drill. Although this practice is typically used when the primary crop is cash grain, it also is applicable when planting one forage crop into another forage crop.*

*Planting green is particularly appropriate where growing seasons for cover cropping are short and where cover crops are planted late in the fall such as following harvest of grain corn and soybeans. Planting green is an approach to enhance soil health in no-till systems.*



Farmers Improving Soil Health



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Compiled by Steve Groff, with assistance from additional PANTA Board Members with experience planting green. For more information, visit the PA No-Till website at [www.PANoTill.org](http://www.PANoTill.org).

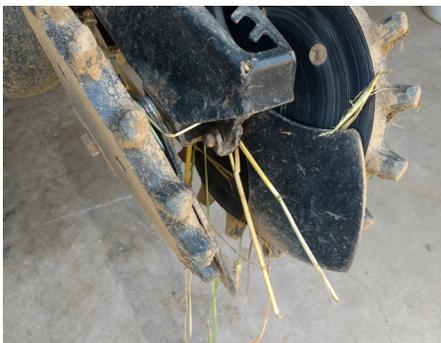
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## PLANTING GREEN: POTENTIAL BENEFITS

- Traditionally cover crops are killed 10 to 14 days before planting. When killing the cover crop at or after planting, both above-ground and below-ground biomass increase significantly.
- Winter hardy legumes such as hairy vetch and clovers will produce more nitrogen for the following crop.
- Actively growing grasses and other covers will take up more available nitrogen, potash and phosphorus due to a deeper and larger root system. This will result in conservation of nutrients for future crops and reduced loss to the environment.
- A growing cover crop can be important in reducing excess soil moisture during the spring planting season. It will allow for earlier spring planting.
- Planting green helps keep living roots in the soil throughout the year. This principle is an integral part of the no-till systems approach for sustainable agriculture and soil health (Duiker and Myers 2005).
- Living root systems and greater soil cover decrease rill, inter rill and gully erosion.
- Living root systems exude labile organic compounds that feed living soil organisms in the rhizosphere. These organisms play important roles in building soil structure and nutrient recycling.
- Living root systems help soil both resist and alleviate soil compaction.
- Planting green will reduce surface runoff from rainfall. Research shows that increasing surface residue reduces surface runoff and soil erosion. Having 50% or greater surface cover throughout the year is an excellent goal for producers desiring enhanced soil health and yields.
- Increased soil cover will reduce soil moisture losses and maximize rainfall infiltration during the summer months.
- Preliminary results suggest that slugs prefer to feed on some cover crop instead of the primary crop during its establishment period. This can reduce slug damage.



Rolling is not necessary when Planting Green into cover crops less than 20" tall.



*If planting into cover crops that are taller than 24" a smooth closing wheel will avoid wrapping. However, a spoked type closing wheel will require less down pressure to consistently close the seed trench. A deflector will help eliminate wrapping in tall cover crops.*

## PLANTING GREEN: POTENTIAL CHALLENGES

- Nitrogen management changes when planting corn into living cereal rye or triticale. More nitrogen is needed in the early weeks of corn growth. However, soybeans thrive when planted green into cereal rye or triticale.
- Cash crop emergence can be slower due to cooler soil temperatures in the spring. Later on in the heat of summer, the cover crop biomass will continue to keep the soil cooler which is a benefit to the crop.
- Proper row cleaners and closing wheels are needed so as not to wrap with the taller cover crop stems.
- Specific attention needs to be directed to closing the seed slot as the living root mass can be a challenge. Spoked type closing wheels seem to make this challenge an easy fix.
- Tall growing cover crops can tangle and catch on planter parts. The degree of this problem is associated in how the planter is set up. Planters with rollers attached don't seem to have as much problem with this due to the cover crop being laid down toward the front of the machine. Some farmers have simply used ropes near the front of the planter to lay the cover crop forward a bit so as not to catch on the planter.

## PLANTING GREEN: CONSIDERATIONS

- This practice is not recommended for the beginning no-tiller. Experienced no-tillers are more likely to be successful with this practice.
- Planting equipment needs to include appropriate attachments including row cleaners, seed firmers, and effective closing wheels. Pay close attention to accurate seed placement and seed slot closure. Consider planting deeper to cleanly cut the cover crop residue and avoid "hairpinning." Modern hybrids have strong emergence characteristics and Planting Green typically happens later in the season with warmer temperatures.
- Planters and drills must be properly maintained and adjusted to do this type of planting. They should have adequate weight for penetration, heavy down pressure to force planting units into the soil. Worn bushings should be replaced, units set to run level with the soil surface and double disk openers should have proper diameter and touch each other according to manufacturer's specifications.
- Monitor insect pests and apply insecticides if needed, following IPM procedures. For example, if cut worms are typically a problem, pay particular attention to this pest and scout every few days after corn emerges. The use of a knowledgeable crop advisor who supports this practice is strongly recommended when planting green.



- When a dry spring (at or just prior to planting time) is anticipated or observed, it is recommended to kill the cover crop early and not plant green. Plans need to be in place to either terminate or use a roller crimper in the event of rainy periods at planting time. Soil moisture recharge over the winter months and soil moisture storage capacity will affect this decision. It is a very important aspect of planting green and experience over a number of years will help a producer to refine this decision.
- For the more advanced cover crop farmers, allowing cover crops to grow to boot stage or heading stage will give the best ground cover for the summer. When allowing cereal rye or triticale to grow longer, consideration must be made in light of those cover crop species taking up all available nitrogen at the time of planting. Be sure to add nitrogen as part of a starter fertilizer in furrow and close to the seed or broadcast. If planting into legumes or if legumes were included in a mix, the need for nitrogen at planting can be reduced.

*Use smooth or curve spoked type row cleaners with treader attachments to avoid wrapping. Many long-term cover crop farmers take off the no-till coulters, use 3.5mm double disk openers and closely monitor seed tube protector wear.*

