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Planting Green and Rolling Beans

There are a lot more cover crops out there than one might think. Lots of progressive farmers are finding unconventional methods and positive benefits of incorporating cover crops into their cropping rotations. The benefits have all been noted before; excellent cattle forage, protect the soil, improve soil health, and reduce weed pressure. However, there can be issues when it is time to terminate the crop and plant corn or beans. Cover crops can get out of hand when it comes time to plant and can be difficult to run a planter through. Dry stemmy cover crops get caught in the planter wheels and plug the seed chutes. This is why many farmers have adopted the practice of “planting green”.

Planting Green

Planting green is the practice of planting a cash crop into a living, standing cover crop. The main reason for this is because standing green cover crops are easier to plant through but also to extend the useful life of the cover crop. A study from PennState Extension found that the 15 day difference in cover crop biomass between the standard preplant kill and the post plant kill was 137%. Those last two weeks make a big difference and it is likely weed suppression is also dramatically increased. The PennState study also found leaving the cover crop alive longer helped dry out the soil for earlier planting but also trapped more soil moisture later in the growing season.

Corn vs. Soybeans

In general, planting green works better for soybeans than it does for corn for a number of reasons. First off, green cover crops tend to cool the soil and can delay germination, which is more relevant in corn. Nitrogen tie up can also be a problem with corn. The older the cover crop the higher the carbon to nitrogen ratio which can lead to nitrogen immobilization, though that nitrogen is released during decomposition later. Multiple studies, including the one from PennState, found that corn planted green into standing cover crops tended to have lower yields than corn in cover crops terminated before planting. Yields were not affected or improved in soybeans.

Cereal rye is by far the most common cover crop, either exclusively, or as the base in cover crop mixes. However rye releases allelopathic chemicals, which is great for controlling weeds, but can possibly slow corn germination and early growth. A publication for Nebraska Extension states that studies have shown conflicting results on whether the allelopathic chemicals can affect a big corn seed but some root inhibiting is possible. The chemicals quickly degrade in a week or two after rye termination.

Rolling Beans

Running a roller crimper over a field of young soybeans might seem like a complete disaster, but as it turns out, it might actually improve yield, not to mention save on herbicide costs. The idea

of rolling soybeans in the V3 to V4 stage is a more common practice in the northern states but has been spreading farther south. You might be surprised to find that there are producers in southeast Kansas and in the surrounding area who roll their soybeans as well. Studies from South Dakota, Iowa, and Minnesota found no significant yield losses to rolling beans at the V3 to V4 stage, and in some cases, had a slight yield improvement. The idea is the early season stress increases node production. The study found that while 10 to 15% of soybeans did break, they were compensated for by other beans taking their space. The cover crop acts as a cushion to protect the beans from the worse damage. (The publication didn't mention if a flat roller or roller crimper was used.)

Rolling crimping is best done when the cereal rye or other grass cover crop is in the heading stages but before it has gone to seed. Planting green means planting the soybeans two to three before during early boot stages. Studies working with vetch found that crimping at full bloom to early pod set works best and the hairy vetch growth stages better line up with wheat or triticale rather than rye.

Making cover crops work for any operation is a matter of practice, experience, and learning from other people's mistakes. There are a number of studies from researchers and lessons that they too have learned from the process of planting into green cover crops. Cover crops can work and can be a powerful tool in soil health, weed reduction, and saving on input costs. Currently we have a weekly soil health program webinar focusing on soil microbes, diseases, and structure. The Soil Health program is every Monday in February from 7:00 to 8:00 pm. Contact any extension office in Southeast Kansas if you are interested or me at 620-724-8233 or email jcoover@ksu.edu.