

Selecting the perfect cover crop: How do I decide?

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Abstract

Cover crops are receiving greater attention in the past few years among cash grain farmers. Cover crops can improve soil tilth and biological activity, reduce erosion, trap nutrients, fix atmospheric nitrogen, and increase soil organic matter. Different cover crops are better for some purposes than others, and no one cover crop will be able to meet all needs. In order to choose cover crops for a particular field, producers need to evaluate the most important purposes for cover crops in that field, as well as timeliness and cost considerations. This presentation will outline a process for selecting cover crops to fit within specific cropping systems and for different desired purposes of the cover crops.

Selection criteria

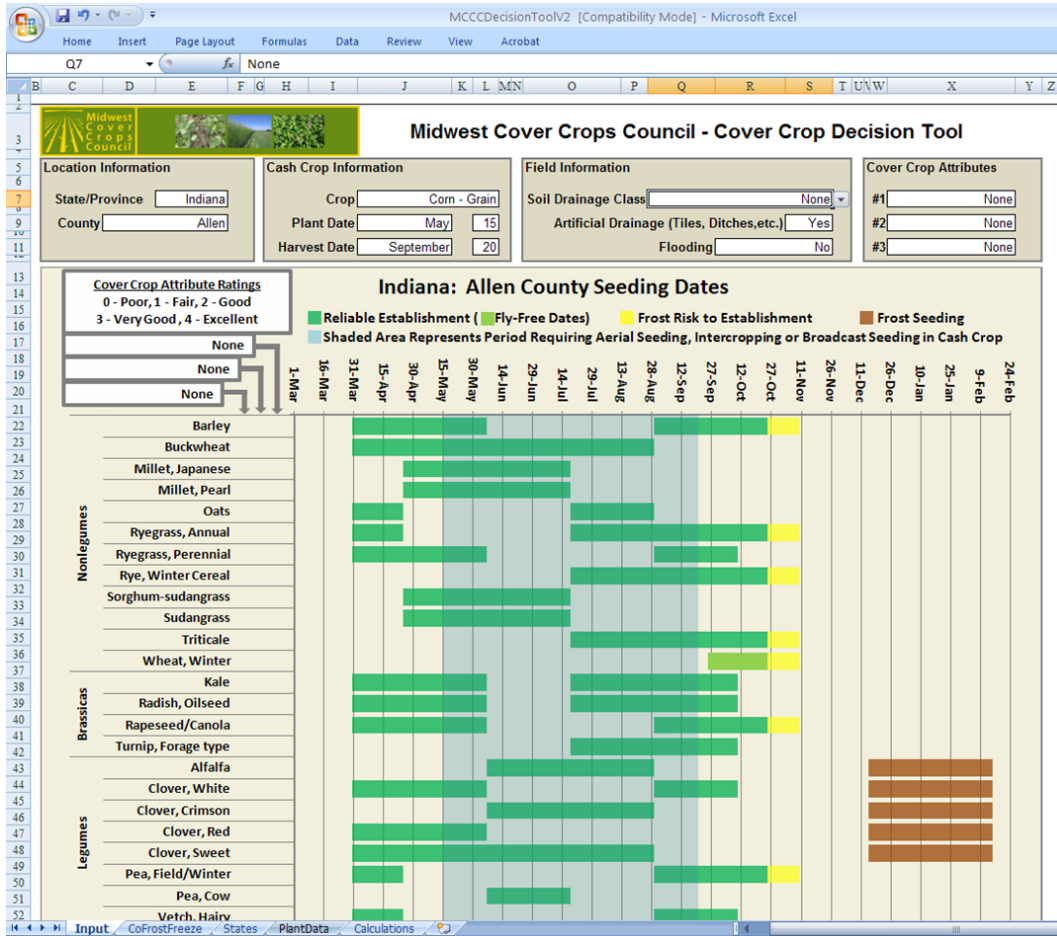
Ideally one would start by evaluating the most important purposes for the cover crops in the system. Primary purposes include scavenging residual nitrogen, fixing nitrogen, improving soil tilth and biology, protecting against erosion, and reducing compaction. A combination of two or more cover crops may be desired, to achieve multiple benefits within a single season. Then one considers the main cropping system to determine the time windows available for growth of the cover crop. Although the available growing season after corn grain harvest is usually quite short, for example, this can be lengthened somewhat by aerially seeding the cover crop into standing corn or soybean. Thus the choice of cover crops can be wider than at first expected, if the producer is willing and able to consider alternative seeding methods or other changes to make the system work better. Cover crops following soybeans typically have a longer growing period available. Even greater opportunities exist for a number of different cover crops following wheat, seed corn, or corn silage, due to the longer time period available for cover crop growth. Another important niche for cover crops is after manure application in late summer or fall, to trap the nutrients and reduce leaching losses below the root zone.

Economic considerations include costs of the seed itself, the seeding method, and termination of the cover crop, and potential benefits of reduced weed pressure, potential pest or disease suppression, improved biological cycling of nutrients, and overall soil quality improvement. Government programs are also available to help support cover crop use and may pay a substantial portion of the costs involved with growing cover crops.

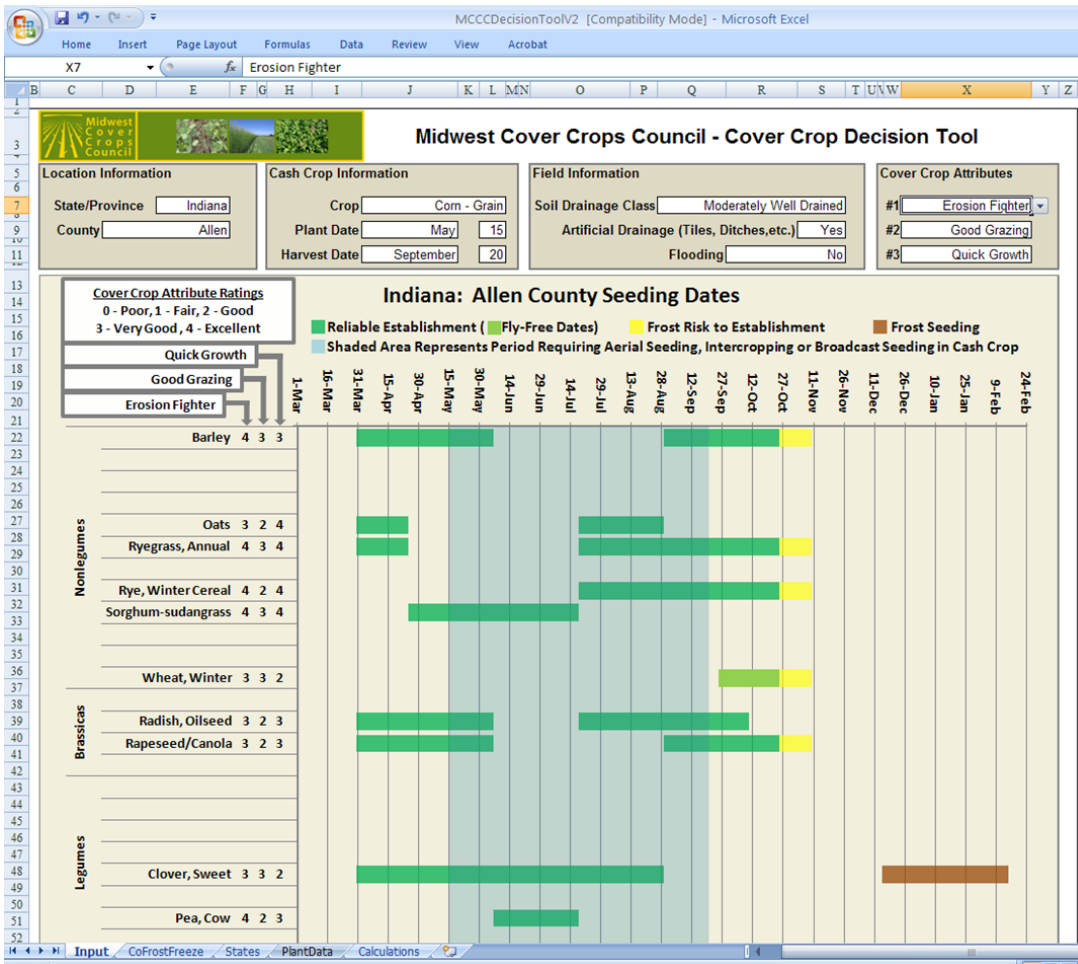
The Midwest Cover Crops Council (www.mccc.msu.edu) is preparing a cover crop selector tool, to assist producers in selecting cover crops that fit within their systems. The tool will be ready for preliminary testing in Indiana in winter 2010. The tool combines elements of NRCS practice standards and job sheets on cover crops, the NRCS seeding tool from Indiana, and charts from *Managing Cover Crops Profitably*, 3rd edition (Andy Clark, ed., published by SARE/SAN). The tool is Excel-based, and selects

potential cover crops that fit the time window (frost dates), soil drainage class, and desired purposes of the cover crop (N scavenger, soil builder, etc.). The tool will be tested in Indiana this winter and adapted for use throughout the Midwest, with readily-available data from each state/province in the MCCC.

The chart below shows a draft version of a page from the selector tool. The page shows the list of all potential cover crops along with their seeding date windows, for this example from Allen County, Indiana. The shaded area indicates when the cash crop is growing.



The user then fills in information about the soil drainage class and the desired purposes of the cover crop (up to three attributes, such as soil builder, erosion fighter, quick growth, etc., as listed in SARE/SAN book). As each selection is made, cover crops are rated, and those that are rated fair or poor are eliminated. This has great educational value to users, since they can immediately see the effect their choices make on the cover crops that are possible for their system.



We are interested in having some Indiana CCAs test the tool this winter. We would need specific feedback on its ease of use, helpfulness, educational value, difficulties, missing information, and other suggestions on how to make the tool more useful. If you are potentially interested in helping test the tool, please contact Dean Baas (baasdean@msu.edu) or Eileen Kladviko (kladviko@purdue.edu) or talk with us at the CCA meeting itself.

References

The new website for the new regional group on cover crops, the Midwest Cover Crops Council, has compiled information from all the Midwestern states plus the province of Ontario, for easy access to extension information from around the region as well as to the national SARE website and book on cover crops.

www.mccc.msu.edu