

# INDIAN CREEK FACT SHEETS

## COVER CROPS

Cover crops can be extremely effective tools for managing crop nutrients, improving soils and protecting water quality. Nationwide surveys conducted by the Conservation Technology Information Center (CTIC) and USDA's Sustainable Agriculture Research and Education (SARE) program indicate that many farmers see a yield benefit after using cover crops. Demonstrations in the Indian Creek Watershed Project in Livingston County, Illinois, have highlighted the benefits, challenges and opportunities offered by cover crops in central Illinois and many other parts of the Corn Belt.

### Three Top Benefits

Cover crops offer three key benefits, according to Terry Bachtold, agriculture coordinator for the Livingston County Soil and Water Conservation District:

- Reducing soil compaction
- Sequestering nitrogen in the soil
- Erosion control.

Seeded after harvest, cover crops reach into the soil to take up nutrients left behind by the previous cash crop. After the cover crop is terminated – by killing frosts in some cases, or by springtime herbicide applications in the case of other species – those nutrients are returned to the soil by microbial action for use by subsequent cash crops.

Deep-rooted cover crops, particularly tillage radish, can help break up compaction in the soil. And vegetation on the soil surface, coupled with soil-holding roots below the ground, can reduce the chances of soil and nutrients leaving the field – a great benefit in areas like the Indian Creek watershed, where heavy spring rains are common.

### Select Species Carefully

There are a host of other benefits to cover crops, from weed suppression to nitrogen fixation, soil moisture conservation and providing pollinator habitat, depending on the choice of cover crop species and the timing of planting and termination. Many farmers find that blends of cover crop species can be especially beneficial. For instance, a combination of nitrogen-fixing legume, hardpan-breaking radish and fibrous-rooted grass can deliver multiple benefits and help establish a healthy, effective stand.

However, timing is a major variable in using cover crops properly.

For instance, a combination of oats and tillage radish is a great cover crop mix after corn silage or wheat in central Illinois, but a poor fit after full-season corn or soybeans. Oats and radish must be seeded in this area by September 10 in order to produce adequate growth before killing frosts, so waiting until after grain harvest would be too late. Aerial seeding can work, though variables like the architecture of the corn hybrid – which can influence how much seed reaches the ground – and lushness of foliage can have major impacts on success.



### The Indian Creek Watershed Project

The Indian Creek Watershed Project is a locally led program that provides educational, technical, financial and social support for producers to develop, implement and maintain comprehensive conservation systems.

It combines on-farm research, demonstration projects, a support network for area farmers, public and private technical resources and an outreach strategy to communicate about best management practices (BMPs) to farmers and the wider public.

A wide range of conservation systems, demonstrated and implemented on a local level, allow farmers to assess BMPs in real-world, field-scale conditions. In all, new conservation practices have been adopted on more than 60 percent of the watershed's farmland since the project began in 2010. A water quality monitoring program will track the impact of BMPs on the watershed scale on water quality in Indian Creek.

For fields with corn or soybeans, cereal rye may be a better choice. Affordable, easy to seed, and reliably killed by winter frosts in the central and northern Corn Belt, cereal rye is a favorite for many farmers starting to work with cover crop systems. Cereal rye roots can extend as far as six feet into the soil, making them a great scavenger of nitrogen and other nutrients and a powerful shield against erosion.

## Note Your Herbicides

The Indian Creek Watershed Project brought to light another important variable in the success of cover crops: the possibility that residual herbicides applied to protect the previous cash crop could be carrying over and reducing the establishment of cover crops.

Bachtold says herbicides will be the subject of further study, but cautions farmers who are considering the use of cover crops to choose

their herbicides and rates carefully. Consult with experienced growers or crop consultants for insight into herbicide effects in the soils, conditions and cover crops common in your area.

## Great Resources Available

In addition to the Indian Creek cover crop demonstrations, there is a big and steadily growing body of research on cover crops that can fit a wide range of farms. For more information, start with [www.ctic.org/Cover Crops/](http://www.ctic.org/Cover Crops/) or [www.ctic.org/CoverCropMath](http://www.ctic.org/CoverCropMath), or contact your local Extension agent or soil and water conservation district.

