

Where is the Experience Growing Corn After Corn in Indiana?

by Bruce Erickson, Corinne Alexander, and Larry Theller

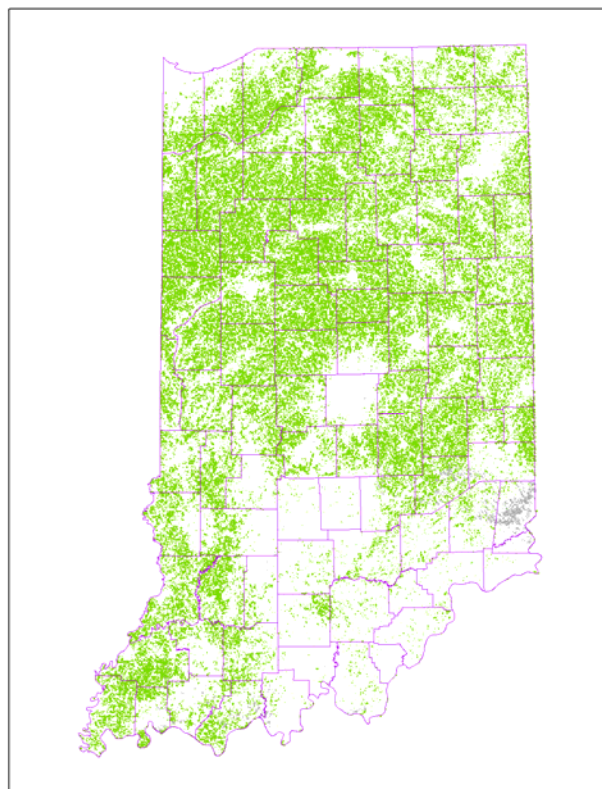
In Indiana it is estimated that by 2010 growers will plant 7.1 million corn acres, 4.5 million soybean acres, and 0.2 million wheat acres as compared to the 5.5, 5.7, and 0.5 million acres of each crop in 2006 and the estimated 6.2, 5.0, and 0.4 million acres of each planted in 2007 (Chris Hurt, personal communication, 2007). This shift to more corn is also occurring in surrounding states. Corn, soybeans, and wheat comprise 98% of Indiana crop acres, and since cropland acres are relatively fixed, this means that an increasing amount of corn will be planted back on the previous year's corn ground, a fundamental change from the long-established corn/soybean rotation sequence for most growers.

Crop rotation is a long-accepted practice that can aid in plant nutrition, managing pests, reducing input costs, and in increasing yields. According to Purdue crop budget estimates for 2007, corn after corn requires another \$20/A in input costs, largely for additional nitrogen and tillage expenses. In addition, agronomic research literature consistently shows yield penalties when corn is planted back to corn. Depending on relative yields, input costs, and other factors, Purdue research has shown that it takes a soybean/corn price ratio of less than 2.5 to overcome these differences and justify planting more corn after corn.

Anecdotal information suggests, though, that many farmers have adopted agronomic practices that have allowed them to minimize corn after corn input costs. And many of these same farmers also report that they do not suffer the same yield penalties experienced by university researchers, or have found ways around it.

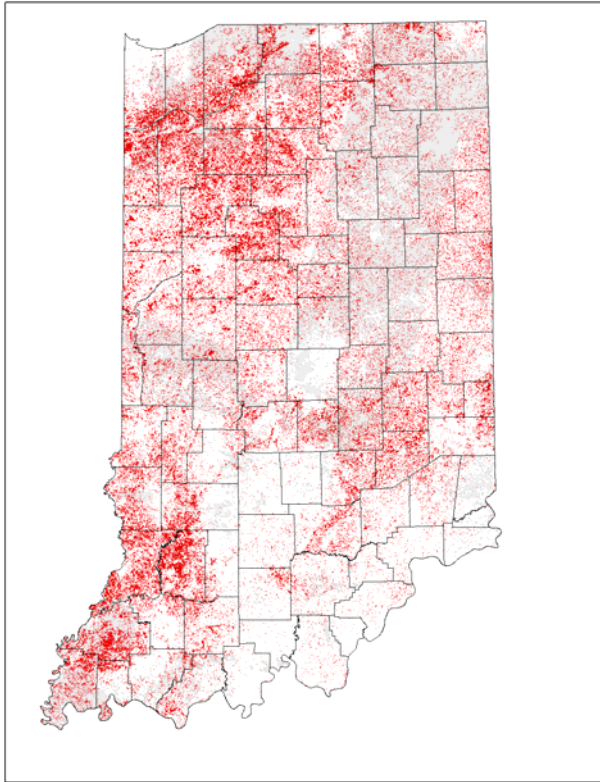
With a dramatic increase in corn after corn acres in the coming years, it will be important for farmers to adapt their management for this shift. And because so much about crop production is part of an integrated system, where will this expertise come from? The past balance of corn and soybean acres in Indiana suggests that most producers have little experience in growing corn after corn, with most land being in a corn/soybean rotation.

But a preliminary study of field records conducted by the USDA/National Agricultural Statistics Service (NASS) Indiana Field Office has revealed over 3,000 Indiana growers have at least some experience with corn after corn. And NASS cropland data layer analyses derived from satellite imagery show significant acres of corn after corn. By comparing land use from year to year, fields that are corn in successive years can be identified.

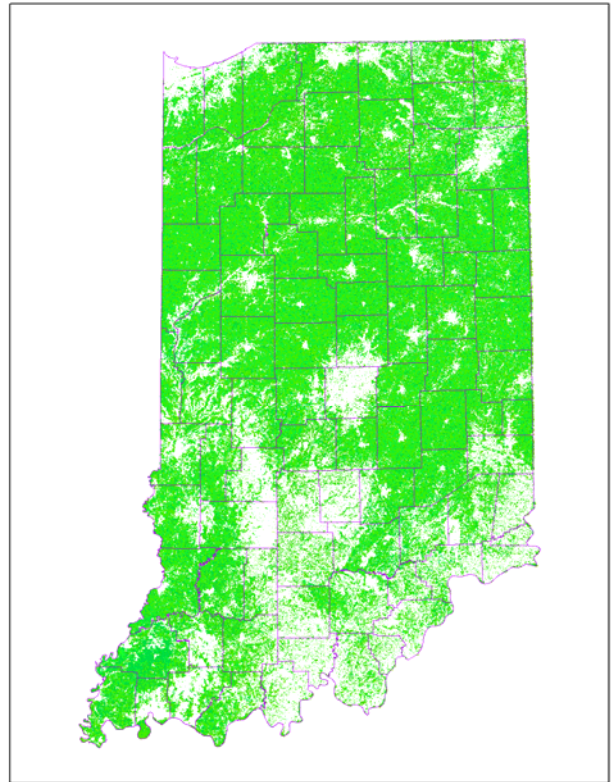


Indiana land surface classified as corn (green) in 2006. Clouds interfering with the imagery are portrayed in light gray.





Indiana land surface that was corn in any two or more successive years between 2000 and 2006 (red). Note concentrations in the Kankakee River Valley, and in livestock-intense areas of Southwest Indiana, among others.



Indiana land surface in corn at least once from 2000 to 2006 (green). This is indicative of most of Indiana's row crop acreage, and clearly delineates cities and southern Indiana's forested areas.

Analyses of these NASS satellite images revealed:

- Corn is periodically repeated in some Indiana corn fields, but seldom is corn grown continuously for more than a few years.
- Corn after corn is more prevalent in some areas than others (see graphics). Suspected factors include livestock, irrigation, and land productivity.

Growers who are successfully raising corn following corn often tout unique management practices that they attribute for their success. These often include managing crop residues with fall nitrogen and tillage, maintaining very high P and K levels in the soil, adequate amounts of applied nitrogen, choosing certain hybrids, planting high plant populations, and placing their corn after corn fields on some of their best land.

In August, a survey will be sent to many of those Indiana growers with experience in corn after corn. The goal is to learn more about their yield experiences of corn in various rotation sequences, examine their production practices, and then share this information with those who have less experience with corn after corn.



For More Information

Erickson, B., and J. Lowenberg-DeBoer. Weighing The Returns of Rotated vs. Continuous Corn. Top Farmer Crop Workshop Newsletter, February 2005.

http://www.agecon.purdue.edu/topfarmer/newsletter/TFCW2_05.pdf

Nielsen, R.L., B. Johnson, C. Krupke, and G. Shaner. Mitigate the Downside Risks of Corn Following Corn. <http://www.agry.purdue.edu/ext/corn/news/articles.06/CornAfterCorn-1121.pdf>

