Benchmark Study

Glyphosate Resistance Management

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MISSISSIPPI STATE UNIVERSITY

PURDUE UNIVERSITY

Southern Illinois University Carbondale

IOWA STATE UNIVERSITY

NC STATE UNIVERSITY

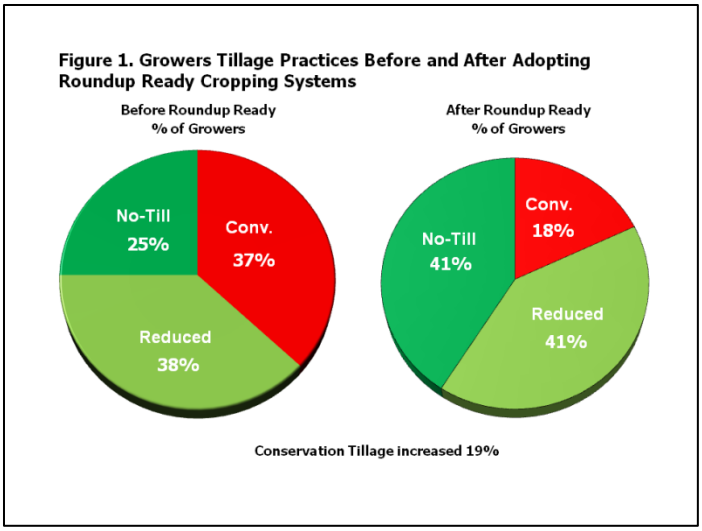
University of Nebraska Lincoln

Roundup Ready® Crops Have Major Positive Impact on Tillage Practices*

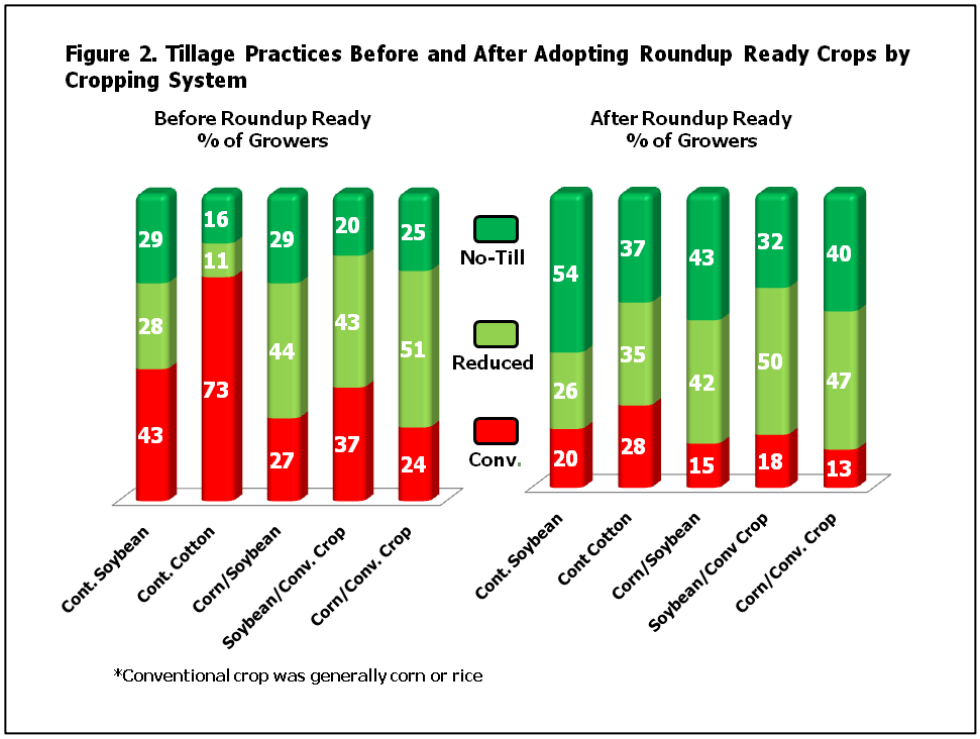
The benefits of conservation tillage systems in crop production including reduced tillage and no-till are well documented. Reduced soil erosion, reduced labor and fuel costs and conserving valuable soil moisture in drier climates are among the many benefits experienced when growers shift from conventional tillage to reduced tillage and no-till. University weed scientist have additional information to show corn, soybean and cotton growers adopting Roundup Ready cropping systems increase the use of conservation tillage practices.

Nearly 1200 growers in six states (approximately 200 per state) were surveyed by telephone in the winter of 2005-2006. A large percentage of growers transitioned from conventional tillage to conservation tillage including no-till and reduced tillage systems after adopting Roundup Ready crops in their crop rotation (Figure 1). The percentage of growers utilizing reduced tillage and no-tillage in corn, soybean and cotton increased 3% and 16%, respectively. Of the growers using conventional tillage, 25% transitioned to no-till, and 31% transitioned to reduced tillage systems after adopting Roundup Ready crops. The majority (92%) of the growers that were utilizing no-till prior to Roundup Ready crops remained in a no-till system after adopting Roundup Ready (data not shown).

Figure 1. Growers Tillage Practices Before and After Adopting Roundup Ready Cropping Systems



Growers in all cropping systems increased their use of conservation tillage after adopting Roundup Ready crops (Figure 2). The largest shift to no-till and reduced tillage systems was in continuous cotton (+45%). The scientists concluded that these data demonstrate that cotton growers are willing to adopt conservation tillage when they can effectively control weeds. The next highest transition to conservation tillage systems was in continuous soybean (+23%). Growers in the other cropping systems, including Roundup Ready corn followed by Roundup Ready soybean and Roundup Ready corn or soybean followed by a conventional crop, were already utilizing conservation tillage practices to a high degree before adopting Roundup Ready which resulted in a smaller transition to reduced and no-till systems.



Growers in all states in the study showed an increase in conservation tillage after adopting Roundup Ready crops in the crop rotation (data not shown). The largest increases were in the cotton producing states of Mississippi (33%) and North Carolina (33%). Growers in the remaining four states increased their use of conservation tillage to a lesser degree (14 to 12%). Growers in these states were already effectively utilizing conservation tillage prior to the adoption of Roundup Ready. All farm sizes increased conservation tillage with small farms (<550 ac) showing a slightly larger increase compared to medium (550-1100 acres) and large farms (>1100 acres) (data not shown).

Summary of Tillage Practices in Roundup Ready Cropping Systems

- A large percentage of growers (19%) transitioned from conventional tillage to conservation tillage (no-till and reduced tillage) after adopting Roundup Ready cropping systems.

- Growers in all crop rotation systems increased the use of conservation tillage after adopting Roundup Ready cropping systems – the largest increase was in continuous cotton (45%).

- Growers in all states in the study showed an increase in conservation tillage after adopting Roundup Ready cropping systems - the largest increase was in the cotton producing states of Mississippi and North Carolina.

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