

When it comes to tillage, timing matters

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It shows weeds that emerged after tillage that was done early in the spring at the Musgrave Research Farm in Aurora, New York. Some species that you can see such as common ragweed (*Ambrosia artemisiifolia* L.) were associated with early tillage and were absent from plots that were tilled later in the season. Credit: Matthew R. Ryan

With herbicide resistance on the rise, there is a renewed emphasis on soil tillage as a critical component of integrated weed management. Research shows, though, that timing matters. When tillage occurs can significantly impact both weed density and the composition of the weed community that emerges from the weed seed bank.

In a study featured in the most recent edition of the journal *Weed Science*, researchers examined the impact of [tillage](#) on four sites in the northeastern U.S. that were tilled every two weeks during the growing season. Six weeks after each tillage cycle, researchers sampled random plots—196 in total—to quantify the density and species of weed seedlings.

They found that total weed density tended to be greatest when soil was tilled early in the growing season. In fact, more than 50 percent fewer weeds emerged after late-season tillage than after early-season tillage.

The composition of the weed communities in the test fields was also impacted by tillage [timing](#). After early-season tillage there was greater unevenness among various weed species, with some species clearly dominating. After late-season tillage, the distribution among weed [species](#) tended to be much more even.

"Our results suggest that farmers may be able to better manage [weed](#) communities and to mitigate the impact of weeds on crop yields by adjusting the timing of their tillage, crop rotation and other cultural management practices," says Matthew Ryan of Cornell University, a member of the research team.

Full text of the article "Timing of Tillage as a Driver of Weed Communities" is now available in *Weed Science* Vol. 65, Issue 4, July 2017.

More information: Stéphane Cordeau et al. Timing of Tillage as a Driver of Weed Communities, *Weed Science* (2017). [DOI: 10.1017/wsc.2017.26](https://doi.org/10.1017/wsc.2017.26)

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