

## Study Shines Light on Drill-interseeded Cover Crops in Corn

*Findings from a newly published Weed Science Society of America research article provides integrated weed management directives for Northeast U.S. corn conservation-tillage systems*

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WESTMINSTER, Colorado – 20 March 2024 – Recently published research in the journal *Weed Science* highlights potential best practices for drill-interseeding cover crops into corn in Northeast U.S. production regions. While drill-interseeding is emerging as a viable way to establish cover crops for northern corn growers, the challenge is to optimize both cover-crop establishment and corn yields, while minimizing weed growth.

“Our results show that interseeding cover crops early, at the V3 corn-growth stage and in 30-in. row spacing, can balance cover crop and corn production management goals, while placing cover crops at a relative fitness advantage over weeds,” says John Wallace, Ph.D., Assistant Professor, Pennsylvania State University, the article’s lead author. “Compared to interseeding at the V6 corn growth stage, interseeding at the V3 corn growth stage lengthens the cover-crop establishment period before rapid corn canopy closure, and thus contributes to a relative fitness advantage of cover crops over weeds.”

Previous studies in northern U.S. regions have largely shown that interseeding establishes cover crops better in corn than broadcasting. In this study, Wallace and collaborating researchers evaluated interactions among corn hybrids differing in leaf architecture (upright, pendulum), corn row spacing (30 in., 60 in.), and interseeding timing (V3, V6) on light transmittance and the corresponding relative fitness of cover crops, weeds and corn grain yields. The cover crops examined in the study included cereal rye, annual ryegrass, and red clover in corn fields at three Northeast U.S. locations: Landisville and Rock Springs, Pennsylvania, and Aurora, New York.

Cover crops help corn producers achieve both sustainability and production goals. “If successfully established, the conservation benefits from cover crops are manifold,” says Wallace. “These benefits include increased water infiltration, reduced soil erosion, improved nitrogen scavenging, increased microbial abundance and carbon accumulation.”

Other results from this study showed that cover crops attained greater relative fitness than weeds in each cultural practice that also included 30-in. corn rows, but greater relative fitness for weeds than cover crops when interseeding in 60-in. rows. The 30-in rows also yielded higher corn yields than 60-in. rows at two of the three locations.

More information is available in the article, "[Light partitioning strategies impact relative fitness of weeds and cover crops when drill-interseeding in corn.](#)" The research is featured in Volume 72, Issue 2 of *Weed Science*, a [Weed Science Society of America](#) journal, published online by Cambridge University Press.

### **About Weed Science**

*Weed Science* is a journal of the Weed Science Society of America, a nonprofit scientific society focused on weeds and their impact on the environment. The publication presents peer-reviewed original research related to all aspects of weed science, including the biology, ecology, physiology, management and control of weeds. To learn more, visit [www.wssa.net](http://www.wssa.net).

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