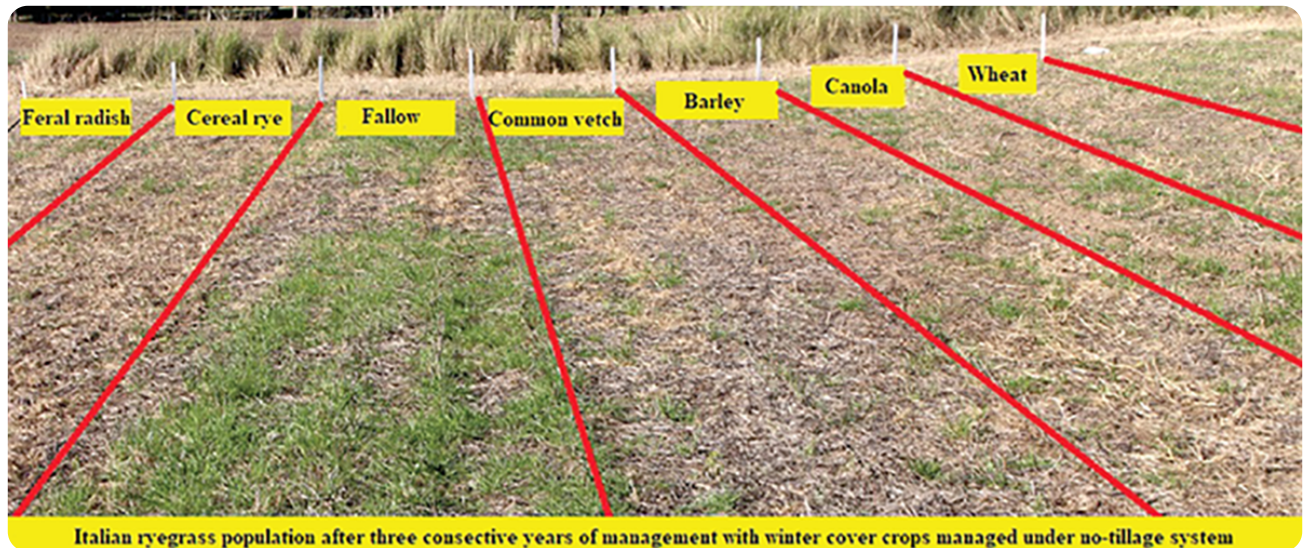




Use winter cover crops to reduce Italian ryegrass infestations

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Italian ryegrass population found after three consecutive years in a field managed with winter cover crops under a no-tillage system. This picture was taken after soybean harvest and demonstrates the effects of suppression. Photo by Joanei Cechin.

Italian ryegrass (*Lolium perenne* spp. *multiflorum* Lam.) is a troublesome weed found in temperate regions around the world. In Brazilian fields, herbicide-resistant populations

were reported to glyphosate (EPSPs inhibitor) and iodosulfuron and pyroxsulam (ALS or AHAS inhibitors) with several fields showing multiple resistance for both modes of action. Furthermore, the limited number of herbicides available for post-emergence application on winter cereals demands new strategies for management. The critical question is can winter cover crops reduce Italian ryegrass infestations and ensure weed-free production? Which species could reduce infestations?

In a new *Crop Science* study, researchers from the Federal University of Pelotas and Embrapa Wheat showed that winter cover crops can reduce up to 97% of the Italian ryegrass infestations. Cover crops strongly reduce weed seed inputs into the soil, especially when cover crops have greater biomass dry matter accumulation and higher plant height, which has negative effects on Italian ryegrass development caused by crop–weed competition. The cover crops with the highest potential for suppressing Italian ryegrass were cereal rye, black oat, feral radish, and common vetch. Farmers must choose an adequate winter cover crop species to prevent future Italian ryegrass infestations and manage herbicide-resistant populations.

Dig deeper

Cechin, J., Schmitz, M.F., Torchelsen, J.S., Durigon, M.R., Agostinetto, D., & Vargas, L. (2021). Winter cover crops reduce the soil seed bank and infestations of Italian ryegrass in no-tillage system. *Crop Science*. <https://doi.org/10.1002/csc2.20651>

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