

MANAGING QUACKGRASS AS A COVER CROP IN CORN

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Background and justification: A field experiment was to be conducted in 1998 at a site with heavy quackgrass infestation in N.Y. to determine optimal weed control conditions and quackgrass suppression strategies to manage it as a cover crop in corn. The perennial and pernicious weed quackgrass (*Elytrigia repens*) can be a costly and difficult weed to control in field corn. Typical weed control programs, such as low rates of atrazine and pendimethalin (Prowl), do little or nothing to control quackgrass; and herbicides which do successfully manage this weed, such as glyphosate (Roundup Ultra), must generally be applied prior to corn planting or following harvest, incurring the additional costs of chemical, fuel, and equipment wear. Cultivation is not particularly effective at controlling quackgrass, and the physical action of breaking up the rhizomes may simply help spread the quackgrass throughout the field. Growers with severe quackgrass infestations have sometimes asked whether the quackgrass might be managed as a low-cost cover crop, providing erosion protection, a potential winter pasture or hay crop (Christen et al., 1990), and saving both herbicide costs and corn yield loss. Though the change in strategy from control to tolerance may seem strange, the potential economic and environmental benefits are numerous. Cost, time for planting and spring plowdown, and difficulty in establishment are among the primary difficulties cited by growers in using cover crops. For these and other reasons, only about 10% of N.Y. corn growers use cover crops (Gift and Mt. Pleasant, 1997), but the possibility that quackgrass might in some cases be the ultimate inexpensive (costing only the amount of herbicide necessary to suppress it) and easy (no seed establishment necessary) cover crop could improve that statistic.

The objective was to determine the feasibility of managing an existing quackgrass stand as a cover crop in corn. We established a randomized complete block design experiment on a site which had been fallow (infested with pasture weeds) for several years. Herbicide treatments were to include sulfonylureas (Accent, Beacon) and glufosinate (Liberty), which would hopefully suppress quackgrass enough to prevent competition with corn. Also, we included a quackgrass-free check, treated with Roundup Ultra and a weedy check. All plots received a pre-emergence application of metolachlor plus atrazine (Bicep II) prior to applying quackgrass control treatments, to eliminate competition from other weeds. Unfortunately, the quackgrass stand was extremely sparse, and the experiment was terminated prior to applying the quackgrass control treatments. This experiment will be repeated in 1999 at a site with greater quackgrass infestation.

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