Spray tall fescue in the fall to stimulate native warm-season grasses for quail

High-quality quail habitats are dominated by plants that provide protective cover, nutritious food sources and allow travel, feeding, and loafing within and under the cover.

"Tall fescue fails that test on at least two counts," says Dr. Craig Harper, associate professor and Extension wildlife specialist at the University of Tennessee (UT). "Its dense structure near the ground and deep thatch layer limits mobility of quail chicks and ground-feeding songbirds. The dense growth and thatch also suppress germination of desirable forbs that provide food resources."

Harper was the principal investigator on a UT study that compared herbicide and disking treatments to eradicate tall fescue.

Research treatments

The study evaluated two herbicides —glyphosate and imazapic—that were applied in the spring and fall, with and without disking in the season after application. The treatments were applied in three fields across Tennessee. Prior to herbicide application, fields were prepared for spraying by haying or grazing to remove all debris from the field. The tall fescue was allowed to regrow 6 to12 inches before applying herbicides.

"Fall applications of glyphosate and imazapic, with and without disking, provided greater reduction in tall fescue coverage than spring applications, with and without disking," says John Gruchy, a biologist with the Mississippi Department of Wildlife, Fisheries and Parks, who helped carry out the study. "Disking following fall herbicide applications did not further reduce tall fescue coverage."

By the second growing season after treatment, coverage of native warm-season grasses increased after fall herbicide applications, with or without disking, and after spring herbicide treatments. Forb coverage increased dramatically following all treatments.

Food resources for northern bobwhite were increased following all treatments. Forb coverage, both desirable and undesirable, tended to decrease in the second year after treatment. The structural characteristics of the field improved dramatically following eradication of tall fescue. The openness at ground level was increased following all treatments, especially the disking treatments. Vertical structure was increased following all treatments except for spring sprayings, which did not kill tall fescue as well as the fall spraying treatments.

Recommendations

"We recommend spraying tall fescue in the fall with two quarts per acre of a glyphosate herbicide," says Harper. "If undesirable grasses are expected to become a problem, apply imazapic at a rate of 6 to 8 ounces per acre in April before undesirable plants emerge."

Harper says if desirable plants do not emerge from the seedbank by the second growing season following spraying, it may be necessary to plant a mixture of native grasses and forbs.

The results add to the science available on bobwhites, says Dr. Wes Burger of Mississippi State University (MSU), who coordinated 11 studies across the quail range, and Ed Hackett, a biologist with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Agricultural Wildlife Conservation Center (AWCC), which funded the study.

The AWCC, located in Madison, Mississippi, is a fish and wildlife technology development center.

NRCS photo by Lynn Betts

Dr. Craig Harper of UT stands in a disk strip

Summary of:

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For more information, see:

USDA/NRCS Bobwhite Restoration Project online at http://www.cfr.msstate.edu/nbci

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