

USING NATIVE LITTLE BARLEY AS A COVER CROP. Janet M. Grabowski, Joel L. Douglas, James S. Parkman and Joe R. Johnson, Agronomist and Manager, USDA-Natural Resources Conservation Service (NRCS) Jamie L. Whitten Plant Materials Center, Coffeerville, MS 38922-2652, Resource Conservationist, USDA-NRCS, Greenwood, MS 38935, Research Professor, North Mississippi Research and Extension Center, Holly Springs, MS 38635. Corresponding Author: Grabowski, (662) 675-2588 Janet.Grabowski@ms.usda.gov

Little barley (*Hordeum pusillum* Nutt.) is a native, annual, cool-season grass that can form dense colonies in some cropland fields in the southeastern US that are no-tilled or given minimum tillage in the fall. In such areas, little barley functions as a naturally-occurring cover crop that does not require reseeding like conventional cover crops such as wheat (*Triticum aestivum* L.). Several NRCS and university agronomists have expressed an interest in developing methods to either manage natural stands of little barley or produce commercial sources of little barley that can be planted as cover crops. We initiated two studies in 2002 at the Jamie L. Whitten Plant Materials Center, Coffeerville, MS, to evaluate the cover crop potential and management requirements of little barley. In the first study, we compared its stand and dry matter production to wheat, crimson clover (*Trifolium incarnatum* L.), and hairy vetch (*Vicia villosa* Roth) planted at their recommended cover crop rates (101, 22, and 34 kg ha⁻¹, respectively). Little barley provided close to 95% cover during the winter and early spring; the most of all species tested; however, a considerable amount of seed (800 seeds m⁻²) was planted to ensure a sufficient stand for testing. Additional research is needed to determine optimum planting rates for little barley. Hairy vetch provided little cover during the winter, but cover increased to more than 95% before the target burndown date of April 15. The other two species provided intermediate stand ratings during the winter. In 2003, dry matter yields were highest for little barley and crimson clover, but in 2004, dry matter yields of wheat were highest. The second study examined the burndown requirements of little barley. Conventional recommendations are to use either 1.12 kg a.i. ha⁻¹ of either glyphosate (Roundup or generic formulation) or paraquat (Gramoxone) to burndown cover crops before planting. We wanted to determine if these rates could be reduced to 0.75, 0.5 and 0.25 kg a.i. ha⁻¹ and still provide control of little barley. Glyphosate rates when reduced to 0.5 kg a.i. ha⁻¹ provided adequate burndown of little barley, with a visual rating of more than 80% dead plants at 14 days after treatment. The rate of paraquat could not be decreased below 0.75 kg a.i. ha⁻¹ and still provide a comparable level of burndown.