BIOGEOGRAPHIC SURVEY OF FERAL ALFALFA POPULATIONS IN THE U.S. DURING 2001 AND 2002 AS A COMPONENT OF AN ECOLOGICAL RISK ASSESSMENT OF ROUNDUP READY® ALFALFA. Daniel L. Kendrick, Todd A. Pester, Michael J. Horak, Glennon J. Rogan, Thomas E. Nickson, Monsanto Company, St. Louis, MO 63167.

Prior to the commercialization of Roundup Ready® alfalfa (*Medicago sativa* L.), an ecological risk assessment was conducted. As part of the risk assessment, the potential for and consequences of the transfer of the glyphosate-tolerance trait to feral alfalfa were evaluated. A biogeographic survey was conducted in 2001 and 2002 on feral alfalfa populations within five major U.S. alfalfa production states to assess the potential for gene flow from cultivated alfalfa to feral alfalfa. A total of 940 roadside sites were surveyed (500 m^2 per site). At approximately 23% of the sites, feral populations were located within 2000 m of cultivated alfalfa. On average, observed feral populations occupied < 3% of the area surveyed. The proximity of feral populations to cultivated alfalfa suggests that there is the potential for gene flow to occur between these populations. In forage production systems, gene flow from cultivated alfalfa is minimized by continual harvest of the forage at early bloom. Gene flow in seed production regions can be significantly reduced by isolation management practices. The consequences of gene flow from cultivated Roundup Ready alfalfa to feral alfalfa would likely have little environmental impact in terms of increased pest potential because (a) plant phenotypic evaluations concluded that the introduction of the glyphosate-tolerance trait does not increase the fitness of alfalfa, (b) feral alfalfa is not typically targeted for weed control in unmanaged areas or on roadsides, and (c) glyphosate plays a limited role in the control of feral alfalfa because other herbicides are available that provide better control.

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