

ANNUAL RYEGRASS (*LOLIUM MULTIFLORUM* L.) CONTROL IN WINTER WHEAT WITH MESOSULFURON-METHYL (OSPREY HERBICIDE). Daren R. Bohannon, David Lamore, Michael Weber, Jack D. Otta, Kevin B. Thorsness, and S. Shane Hand. Bayer CropScience RTP, NC 27709.

Osprey Herbicide is a new postemergence herbicide developed by Bayer CropScience for weed control in winter wheat. Osprey Herbicide is comprised of the active ingredient mesosulfuron-methyl. This herbicide acts as an inhibitor of acetolactate synthase (ALS). Osprey Herbicide will control many important grass weeds in winter wheat and is highly active on wild oat and Italian/annual ryegrass as well as some broadleaf weeds such as wild mustard. Osprey Herbicide exhibits excellent winter wheat tolerance at 10 to 15 g ai /ha.

In field experiments in North America, Osprey Herbicide controlled Italian/annual ryegrass, annual bluegrass, wild oat, and canarygrass as well as wild mustard, Tansy mustard and blue mustard. Osprey Herbicide is applied to grass weeds up to 2-tiller in size and 1-2 leaf mustards. Applications of Osprey Herbicide must include a tankmix partner of either a high-quality methylated seed oil containing 10% emulsifier or greater at 1.3 to 1.5 pint/acre, a basic blend type adjuvant at a concentration of 1% v/v, or a non-ionic surfactant containing at least 80% active non-ionic surfactant at a concentration of 0.5% v/v. A nitrogen source must be used when non-ionic surfactant is used as the adjuvant system. Nitrogen should be an ammonium nitrogen fertilizer that can be either spray grade 28 to 32 percent urea ammonium nitrogen at 1 to 2 quart/acre or ammonium sulfate fertilizer at 1.5 to 3 pounds/acre.

Osprey Herbicide has a very favorable ecological, ecotoxicological and environmental profile with low acute mammalian toxicity and no genotoxic, mutagenic or oncogenic properties noted. Microbial degradation is the primary degradation pathway of mesosulfuron-methyl in the environment. Osprey Herbicide is rapidly degraded and unlikely to pose any risk to succeeding crops. Excellent control of ACC-ase resistant wild oat (*Avena fatua* L.) biotypes has been attained with Osprey Herbicide in field trials. Osprey Herbicide also controls diclofop-resistant Italian/annual ryegrass (*Lolium multiflorum* L.).

The low use-rate, excellent weed control and crop safety combined with very favorable toxicological, ecotoxicological and environmental properties will make this product a valuable new tool for winter wheat farmers.