SIMULATED MESOTRIONE DRIFT FOLLOWED BY GLYPHOSATE, IMAZETHAPYR, BENTAZON OR CHLORIMURON IN SOYBEAN. Lynette R. Brown[1], Darren E. Robinson[1], Kevin Chandler[2], Clarence J. Swanton[2], and Peter H. Sikkema[1]. [1]University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada, N0P 2C0; [2]University of Guelph, Department of Plant Agriculture, Guelph, Ontario, Canada, N1G 2W1.

Six field experiments were conducted between 2005 to 2007 at Elora, Ridgetown, and Woodstock, Ontario in order to determine the effects of simulated mesotrione drift followed by in-crop applications of glyphosate, imazethapyr, bentazon and glyphosate plus chlorimuron on glyphosate-tolerant soybean [*Glycine max* (L.) Merr.] visual crop injury, plant height, density, dry weight, and yield. As the rate of simulated mesotrione drift increased, there was an increase in soybean injury and a decrease in dry weight, height, and yield. The application of the simulated mesotrione drift followed by bentazon resulted in synergistic responses in injury shortly after application in some environments. This increase in injury was transient, with no synergistic responses in density, dry weight, and yield. In contrast, antagonistic responses were observed when glyphosate, imazethapyr, or glyphosate plus chlorimuron were applied after simulated mesotrione drift in some environments.

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