

RESPONSES OF WINTER WHEAT TO PREPLANT AND PREEMERGENCE HERBICIDE TANKMIXES. Peter H. Sikkema, Christy Shropshire, and Nader Soltani*. University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada. N0P 2C0.

Field experiments were established at the Huron Research Station and at University of Guelph Ridgetown Campus in the fall of 2004 and 2005 to evaluate the tolerance of winter wheat to tankmixes of glyphosate plus either amitrole, dicamba, dicamba/diflufenzopyr, 2,4-D amine, 2,4-D ester, chlorimuron-ethyl or thifensulfuron-methyl/tribenuron-methyl applied preplant (PP) and preemergence (PRE). Contrasts comparing PP vs PRE treatments showed no difference in visible injury, plant height and yield between application timings. The tankmix of glyphosate (1800 g/ha) plus either amitrole (1155 g/ha), dicamba (300 g/ha), 2,4-D amine (700 g/ha), 2,4-D ester (700 g/ha) or thifensulfuron-methyl/tribenuron-methyl (15 g/ha) caused minimal (less than 5%) and transient visible injury in winter wheat (Table 1). In addition, these tankmixes had no effect on plant height and yield. The tankmix of glyphosate (1800 g/ha) with dicamba/diflufenzopyr (200 g/ha) or chlorimuron-ethyl (9 g/ha) caused as much as 8 and 18% visible injury in winter wheat, respectively (Table 1). Glyphosate (1800 g/ha) plus dicamba/diflufenzopyr (200 g/ha) did not affect plant height but glyphosate plus chlorimuron-ethyl reduced plant height 11%. Yield was reduced 15% when glyphosate was tankmixed with dicamba/diflufenzopyr and 26% when glyphosate was tankmixed with chlorimuron-ethyl. Based on these results, the PP and PRE application of glyphosate tankmixes with dicamba/diflufenzopyr or chlorimuron-ethyl resulted in unacceptable injury in winter wheat at the rates evaluated. The PP and PRE application of glyphosate tankmixes with amitrole, dicamba, 2,4-D amine, 2,4-D ester and thifensulfuron-methyl/tribenuron-methyl at the rates evaluated had an adequate margin of crop safety for weed management in winter wheat under Ontario growing conditions.