

CONTROL OF KEY WEEDS IN GLYPHOSATE TOLERANT SOYBEAN. Greg A. Elmore, Glen P. Murphy and William B. Parker, Soybean Technical Manager, Technology Development Representative – Kentucky and Technical Development Representative – Missouri, Monsanto Company, St. Louis, MO 63167.

Field trials were conducted at several locations in 2005 to determine the effect of including a pre-plant residual herbicide on control of common waterhemp, Palmer amaranth and common lambsquarters in glyphosate tolerant soybeans. All treatments received a burndown application of glyphosate and 2,4-D prior to planting. Alachlor was included as a treatment in common waterhemp and Palmer amaranth trials while pendamethalin was included as a treatment in common lambsquarters trials. Flumioxazin was included in trials for all three weed species. Weed counts were taken at the post-emergence application timing (when weeds were approximately three inches tall) with a 0.5 meter square quadrat. Three counts were taken in each plot between the two center soybean rows of a four row plot. Weed control was rated on a 0 to 100% scale at the post-emergence application timing and again approximately two weeks after the post-emergence application. Inclusion of alachlor applied pre-emergence reduced amaranthus species (waterhemp and Palmer amaranth) present at post-emergence glyphosate application timing by 28 to 97 percent compared to the glyphosate only treatment, depending upon location. Flumioxazin reduced amaranthus species present at post-emergence glyphosate application timing by 87 to 100%. Weed stand counts at post-emergence glyphosate application timing showed that common lambsquarters populations were reduced by 30 to 75% by pendimethalin applied pre-emergence and 30 to 100% by flumioxazin applied pre-emergence.