

EVALUATION OF PRE-TRANSPLANT HERBICIDES IN PLASTICULTURE STRAWBERRY, Joe Masabni, Bronwyn Aly, John Masiunas, Assistant Professor, Department of Horticulture, University of Kentucky, Princeton, KY, 42445, Research Associate, Dixon Springs Agriculture Station, University of Illinois, Simpson, IL 62985, and Professor, Department of Horticulture, University of Illinois, Urbana, IL 61801.

The purpose of this study was to identify herbicides that may be registered for use in a strawberry plasticulture production system, because of the phase-out of Methyl bromide. In Fall 2005, field preparation and herbicide application were done 9 days prior to laying the plastic mulch over raised beds. Two varieties, Camarosa and Chandler, were utilized in this study. Seven different herbicide treatments were randomly applied to plots 30 feet long. Plant vigor ratings were taken in the fall, along with plant injury, weed pressure, and number of plants per plot. In Spring of 2006, number of branch crowns and plant diameter were measured for all plots. Harvest data, fruit quality, plant injury/death, and weed ratings were also measured. The two cultivars performed differently in this study in terms of number of peaks in production. For both cultivars, five out of seven herbicides were not significantly different from each other in terms of harvested yields per plot. In terms of their response to herbicides, both cultivars responded similarly. s-Dimethenamid and flumioxazin are not suitable for plasticulture strawberry production. Sulfentrazone, pendimethalin, terbacil, and oxyfluorfen appear to be safe. Terbacil and oxyfluorfen had lower yields, in absolute values, but not statistically significant from the control or the other herbicide treatments. Sulfentrazone and pendimethalin were the best performers for Camarosa cultivar, but were similar to all other treatments for Chandler cultivar. We are encouraged that currently labeled herbicide such as terbacil and oxyfluorfen have a potential use for plasticulture strawberry production, especially as a pre-transplant application. We are also encouraged that non-labeled herbicides, sulfentrazone and pendimethalin, also have potential use in plasticulture strawberry. This study, however, clearly indicated that s-dimethenamid and flumioxazin are not safe when applied as a pre-transplant under plastic application for annual strawberry production.