

Project Title: Weed Management Studies for Processing Cucumbers

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Objective:

The objective of this research project was to develop improved weed management programs for processing cucumbers, by evaluating a range of herbicides for crop tolerance and weed control efficacy on this crop. Information on yield, crop sensitivity and control of problem weeds was developed. Improved weed management programs reduce the need for labor for hand hoeing and weeding, reduce the cost of production to the grower and enhance competitiveness of the processing cucumber industry.

Methodology:

Research trials were carried out at the Dept. of Plant Agriculture, University of Guelph, Simcoe during the summer of 2004. Treatments were replicated four times in each experiment. Plots were 10 m long by either 2 m or 1.5 m wide. Plants were thinned to a known stand appropriate for each crop. Cucumbers were grown according to accepted commercial practices used in Ontario. Crop injury, weed counts, weed biomass, weed ratings and yield were recorded. All trials were harvested by hand at crop maturity. Data was statistically analyzed, tabulated and reported.

Results:

Sandea (halosulfuron), as a preemergence, but not as a postemergence application, resulted in slight crop injury. Sandea preemergence resulted in crop stunting and reduced yields compared to Command ME. Command ME (clomazone) caused no injury and had good control of all weeds except pigweed. The addition of Sandea (halosulfuron-methyl) postemergence improved pigweed control and produced yields comparable to the weeded check. Alanap (naptalam), especially postemergence, also controlled pigweed but yields were somewhat reduced compared to Sandea. Two applications of Basagran (bentazon) postemergence at 1/2X recommended rate gave good broadleaf weed control. Assure (quizalofop-p-ethyl) gave excellent grass control postemergence.

In other trials, Command ME at recommended rates caused no crop injury. At 2X recommended rate there was very slight injury at one location. This injury was less than that caused by the standard treatment, Alanap. Command gave superior weed control compared to Alanap and improved yields. Best yields were obtained with the higher Command rate (0.81 L/Acre) where weed problems were high. In both locations Alanap gave reduced yields. This data will be used to support a minor-use registration for Command ME on cucumbers.

The recent full registration of Command ME for use on soybean is good news for future minor-use registrations for this product on several vegetable crops, including cucumbers, pumpkins, squash and pepper. At Simcoe in 2004, residue trials, under GLP guidelines, were conducted with Command ME on cucumbers. This data was submitted to the Pest Management Centre in Ottawa to support registration of Command ME for cucumbers. A minor-use registration for this product is the final step in this process.