

BROADLEAF WEED CONTROL IN TRANSPLANTED CABBAGE. Harlene M Hatterman-Valenti* and Collin P Auwarter, Assistant Professor, and Research Specialists, Plant Sciences Department, North Dakota State University, Fargo, Fargo, ND 58105.

Weed control in cabbage is necessary for high yields and quality. However, the number of herbicides for weed control in cabbage is rather limited. This is especially true for broadleaf weed control. Clomazone, napropamide, and oxyfluorfen are the only herbicides registered for pre-emergence broadleaf weed control in cabbage. All three have factors associated with their use (e.g. carryover, availability, and short residual) that makes them less than ideal choices. In addition, Pyridate (WP formulation), the only herbicide registered for general post-emergence broadleaf control in cabbage is no longer marketed in the United States and supplies are now exhausted. Thus, a field trial was initiated to identify alternative weed control methods. Cabbage transplants were placed in two-row beds with a 2 ft row spacing and 1.5 ft between plants on May 22. Initial herbicide treatments consisted of herbicides applied just prior to transplanting or immediately following transplanting using a CO₂-pressurized sprayer equipped with 11001 flat fan nozzles with a spray volume of 20 GPA and a pressure of 40 psi. Four of the treatments also consisted of an application post-emergence to the crop and weeds.

Weed control evaluations indicated that common purslane, Venice mallow, and redroot pigweed control 3 WAT was greater than 85% when dimethenamid-P, oxyfluorfen (water-based formulation), or sulfentrazone were applied prior to transplanting. However, by 7 WAT, broadleaf weed control had dropped below an acceptable measure (85%) for all treatments except oxyfluorfen (water-based formulation) applied pre-transplant followed by oxyfluorfen (EC formation) applied post-emergence. The post-emergence application of oxyfluorfen caused visible injury to some of the cabbage leaves, but plants outgrew injury and had the greatest total yield from the two harvests. This was almost twice the yield from the untreated and approximately 25% more than the dimethenamid-P treatment, which was the second highest yielding treatment. Oxyfluorfen (water-based formulation) applied post-emergence caused less cabbage injury compared to the EC formulation, but because the initial application was at a lower rate, broadleaf weed pressure was much greater and many of the broadleaf weeds were beyond a controllable size at the time of the post-emergence application. This trial will be repeated in 2007 and additional treatments will be added to examine the potential of a postemergence application with the water-based formulation of oxyfluorfen.