

PRE- AND POSTEMERGENCE WEED CONTROL IN CULINARY HERBS. Eric J. Ott, Chad M. Herrmann, and Bernard H. Zandstra, Research Assistant, Graduate Research Assistant, and Professor, Department of Horticulture, Michigan State University, East Lansing, MI 48824.

The demand for culinary herbs has greatly increased over the past two decades. Culinary herb producers have few herbicide options, and most weed control practices include labor intensive practices such as cultivation and hand weeding. Three field experiments utilizing six crops were established in 2007 near Momence, Illinois at Van Drunen Farms to evaluate new herbicide options for weed control in culinary herb production. The crops included in these trials include basil (*Ocimum basilicum* L.), chive (*Allium schoenoprasum* L.), cilantro (*Coriandrum sativum* L.), dill (*Anethum graveolens* L.), fennel (*Foeniculum vulgare* L.), and parsley (*Petroselinum crispum* L.).

All three experiments utilized three replications in a randomized complete block design. Plot dimensions 4 feet wide by 30 feet long. All PRE herbicides were applied May 8, and all POST herbicides were applied June 6. Experiments were visually rated twice (June 6 and June 29). Crop varieties utilized in experiments included 'Caesar', 'Genova', 'Esmeralda', 'Plenty' basil, 'Slobolt' cilantro, 'Monmouth' dill, 'Zefafino' fennel, 'Green Curled' parsley, and 'Talman' chive. Basil, chive, cilantro, and dill were harvested June 29, and fennel and parsley were harvested July 31.

In basil, napropamide at 2 lbs/acre, clomazone at 0.25 lbs/acre, and ethalfluralin at 0.74 lbs/acre applied PRE provided 90-100% grass and broadleaf control without significant crop injury or yield reduction. Bentazon at 0.5 lbs/acre applied POST also provided 90-100% broadleaf control without significant crop injury or yield reduction. S-metolachlor at 0.63 lbs/acre and pendimethalin at 0.7 lbs/acre applied PRE severely reduced basil stand and yield.

In cilantro, dill, fennel, and parsley, there was no significant crop injury, or yield reduction from linuron at 0.5 lbs/acre, prometryn at 0.5 lbs/acre, pendimethalin at 0.5 lbs/acre, trifluralin at 0.5 lbs/acre, and clomazone at 0.25 lbs/acre when applied PRE. S-metolachlor at 0.63 lbs/acre and ethofumesate at 1 lb/acre were slightly injurious to dill and fennel 29 days after application when applied PRE. However, dill and fennel were able to overcome the early season injury, and no significant reduction in yield occurred. POST applications of linuron at 1 lb/acre slightly injured dill and parsley, but did not reduce yield significantly. Fennel was injured slightly from POST applications of linuron at 1 lb/acre and prometryn at 1 lb/acre, but yields were not reduced.

In established chive, PRE applications of pendimethalin at 0.7 lbs/acre, dimethenamid-P at 0.56, ethofumesate at 1 lb/acre, and oxyfluorfen at 0.125 lb/acre did not significantly injure or reduce yield of established chive. PRE application of s-metolachlor at 0.63 lbs/acre did not visually injure established chive, but did reduce yield compared to the untreated check. POST applications of bentazon at 0.5 lbs/acre, oxyfluorfen at 0.063 lbs/acre, ethofumesate at 1 lb/acre, and flumioxazin at 0.032 lbs/acre did not significantly injure or reduce yield of established chive.