

ANNUAL FLOWER RESPONSE TO SIMULATED DRIFT FROM SYNTHETIC AUXIN
HERBICIDES. Harlene M. Hatterman-Valenti, Assistant Professor, Plant Sciences Department, North
Dakota State University.

Greenhouse studies were conducted to evaluate simulated drift injury to annual bedding plants. Dahlia, gazania, geranium, marigold, petunia, and salvia in the early stages of flowering were sprayed with either 2,4-D (dimethylamine salt) or dicamba (diglycolamine salt) at rates 1/5 th, 1/10 th, or 1/20 th the lowest labeled rate of for turfgrass. Interactions between species by time, species by treatments, and treatments by time were significant for visual injury. Species sensitivity from most sensitive to least sensitive was marigold > dahlia >> geranium \simeq petunia > gazania \simeq salvia. Dahlia was more sensitive to dicamba than 2,4-D while the opposite was true for marigold. Petunia flower initiation was reduced as dicamba or 2,4-D rate was increased. The duration of the trial may have limited flowering differences among treatments with the remaining species. Dahlia loss of apical dominance as an injury response was greater with dicamba than 2,4-D. Typical injury symptoms for dahlia included stem, leaf, and petiole epinasty along with multiple shoot growth. Gazania injury included slight leaf rolling and leaf stretching. Geranium injury included leaf curling and fewer flowers per cluster. Marigold injury included leaf node swelling and stem wall rupture with massive cellular proliferation. Petunia injury included stem and pedicel epinasty, curling of the outer portion of the corolla, and lower flower production. Salvia injury included stunting, slight flower stem curvature, and partial dieback of the terminal raceme.