

EMERGENCE AND REPRODUCTIVE DEVELOPMENT OF COMMON MALLOW AS INFLUENCED BY IRRIGATION AND CROP CANOPY. John Cardina, Kerry Cluney and Douglas Doohan, Associate Professor, Graduate Research Assistant and Associate Professor, Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH 44691.

To minimize crop losses due to weed competition, it is necessary to control weed emergence during the critical period of crop canopy formation and to disrupt seed production in order to minimize the amount of seed released into the seedbank. A study was conducted in 2001 and 2002 to examine the effects of irrigation and soybean canopy on the emergence pattern and rate of reproductive development of common mallow (*Malva neglecta* Wallr.). ANOVA and non-linear regressions showed that irrigation and crop did not affect common mallow emergence patterns. Due to adequate rainfall and little crop competition early in the season, differences in soil moisture and soybean canopy did not appear until much of the emergence had ceased. Common mallow plants emerging on different dates were monitored weekly and scored according to the first observation of four reproductive stages: bud, flower, pod and mature pod. A maturity index was used to measure the rate at which plants growing in different irrigation and crop regimes reach reproductive maturity. Crop had a greater impact on the rate of common mallow reproductive development than irrigation. Mallow plants emerging in non-cropped plots earlier in the season appeared to produce similar amounts of seed, regardless of irrigation regime. The presence of a crop canopy had a greater impact on the productivity of common mallow when irrigation was lacking. Plants emerging after mid-June were not likely to flower or mature under crop competition.