EFFECTS OF IRRIGATION AND CROP CANOPY ON EMERGENCE AND REPRODUCTIVE DEVELOPMENT OF VELVETLEAF. Kerry E. Cluney, John Cardina and Douglas Doohan, Graduate Research Assistant and Associate Professors, Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH 44691.

Two of the most effective ways to minimize crop losses due to weed competition are to control weed emergence during the critical period of crop canopy formation and to delay or 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 velvetleaf (*Abutilon theophrasti* Medic.). ANOVA and non-linear regressions indicated that irrigation and crop did not affect velvetleaf 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 most emergence had ceased. Velvetleaf 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 velvetleaf reproductive development than irrigation. Crop competition increased time to maturation but velvetleaf emerging before June were still capable of producing mature seed.

2002 North Central Weed Science Society Abstracts 57:113.