

APPLE OF PERU: AN EMERGING WEED IN VEGETABLE AND FIELD CROP ROTATIONS. Douglas Doohan¹, Joel Felix² and John Cardina¹, ¹Associate Professors and ² Research Associate, Department of Horticulture and Crop Science, The Ohio State University, Wooster, 44691.

Apple of Peru (*Nicandra physalodes*) is an emerging invasive weed that threatens field- and vegetable-crop production in the eastern United States. Epicenters of infestation are established in OH, NC, TN, and GA. Within these locations apple of Peru is found in fields where soybeans and vegetables are grown in rotation, in ornamental field nurseries and in peanut. Acres infested have not been determined; however, the OH infestation is estimated at 2000-3000. Regional floras indicate that apple of Peru has been in OH since at least the late 1890's, but never considered troublesome. Globally, apple of Peru is a serious weed of cotton, soybean, peanuts, dry beans and corn in Asia, Australia, and east Africa. It is one of the most important weed problems in soybeans and corn in Brazil. In August 2002 we identified this species in several bell pepper and processing tomato fields in north-central OH. In each instance apple of Peru had survived intensive weed control practices including herbicide use and cultivation. Late summer density in one pepper field averaged 1.8/ square m, with a range from 0.1 to 12 plants/ square m. Funding from North Central Pest Management Center, supported an OH-wide survey in 2003. Infestations were detected with assistance of crop scouts and agents and then confirmed and delineated by laboratory staff. Results confirmed restriction of agricultural infestations to the north-central counties of Sandusky and Seneca, but scattered, small patches were found within or in close proximity to arable fields in other parts of the state. In north-central OH, pepper fields were severely infested in 2003, as in 2002. In early September plants ranged from emerging seedlings to individuals more than 210 cm tall and with stems 4 cm in diameter. Late emerging apple of Peru produced seed in corn fields treated with atrazine and mesotrione. We observed some plants producing seed in soybean that had been treated with glyphosate. Plants were apparently 90 cm tall at the time of herbicide application. The terminal shoot had died back about 30 cm at which point axillary buds produced new flowering shoots. Other individuals in the same field died.