SENSITIVITY OF SEVERAL VEGETABLE CROPS TO ISOXAFLUTOLE SOIL RESIDUES. Douglas Doohan, Joel Felix and David J. Lamore. Associate Professor and Research Associate, The Ohio State University, Wooster, OH 44691 and Technical Service Representative, Bayer Crop Science, Bryan, OH 43506.

'Pioneer 34B29 LL' was seeded at Fremont and at Wooster on May 22 and 24, 2001, respectively. Isoxaflutole was applied after seeding at 0, 53, 105 and 210 g/ha PRE. A blanket application of glufosinate was applied POST, once at Fremont and twice at Wooster. Weeds not controlled by herbicides were removed by hand. Grain corn yield was similar amongst all treatments. The sites were not fall-plowed but were disc harrowed to a depth of about 10 cm just before planting vegetables. Vegetables were seeded or transplanted within a 6 day period in late May 2002 in single row plots that were at right angles to the previous year isoxaflutole plots. Varieties used were 'Nantes' and 'Danvers 127' carrot, 'Striker' and 'Hialeah' snapbean, 'Red Dynasty' and 'Huron' cabbage, 'Peto 696' and 'Heinz 9437' tomato, and 'Aristotle' and 'Palidin' bell pepper. Pests, including weeds, were controlled with pesticides recommended by Ohio State University Extension. Weeds not controlled by herbicides were removed from the plots by hand. Vegetables were visually rated for crop injury at 2, 4 and 7 WAP, using the 0-100 linear scale. Vegetables were harvested repeatedly or 'once-over' depending upon the crop. All data were subjected to repeated measures ANOVA and the LSD (0.05) was used for mean separation. Interactions between variety and isoxaflutole rate were not detected; however, site was significant. At Fremont, onset of visible herbicide injury was detected earlier than at Wooster, and was generally more severe. Snapbean was the most sensitive crop, with injury 4 WAP ranging from <5% at Wooster to 40% at Fremont in plots treated the previous year with 53 g/ha isoxaflutole. At 7 WAP injury in plots treated with 105 g/ha was 10% at Wooster and 100% at Fremont. Snapbean yield at Wooster was not reduced relative to the untreated control (isoxaflutole 0 g/ha) with any rate of isoxaflutole but at Fremont yield was reduced in plots treated the previous year with 105 and 210 g/ha. Injury was typified on all crops by chlorosis starting with the oldest leaves and progressing to crop death in the extreme. Injury symptoms were also detected on cabbage and pepper at both sites. Injury at 53 g/ha was consistently 5% or less. Injury at 105 and 210 g/ha stabilized at about 10% for both crops at Wooster. Injury on cabbage and pepper was 20 and 15 % with 105 g/ha, and 25 and 18% with 210 g/ha, respectively, at Fremont. Yield was not reduced in either crop, regardless of rate or location. Tomato injury at 105 and 210 g/ha isoxaflutole was 13% or less at Fremont and 20% or less at Wooster, with no yield reduction. Carrot was not injured at either site. Greater sensitivity of vegetable crops to soil residues of isoxaflutole at Fremont may be related to drought conditions and a light corn crop in 2001.

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