

YELLOW NUTSEDGE CONTROL IN 'PINOT GRIS' GRAPES USING HALOSULFURON.

Timothy A. Koch and Douglas Doohan, Research Assistant and Associate Professor, Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center (OARDC) Wooster, OH 44691.

A 2004 vineyard weed survey in Ohio indicated yellow nutsedge (*Cyperus esculentes*) as one of the most serious and difficult weeds to control. This perennial weed is grasslike in appearance and can spread rapidly via rhizomes and tubers which are produced at the ends of the rhizomes. In Ohio, glyphosate (Roundup Ultra) is recommended as a preplant option; however once the weed exists in a mature vineyard, control is difficult. In general, control is usually fair to poor depending on the actual amount of herbicide translocated to the tuber. Halosulfuron has been shown to be an effective control for yellow nutsedge, and is safe on many horticultural crops. Halosulfuron is not registered for use in grape vineyards.

A field experiment was conducted at OARDC, Wooster, OH during summer 2005 to study the suitability of halosulfuron to manage yellow nutsedge in an established 10 - year - old 'Pinot Gris' vineyard. The trial was laid out in a randomized complete block design with 4 replications, and plots measured 19.8 m x 79.2 m. Halosulfuron treatments were applied POST DIRECTED at : 26.3, 52.7, and 105g ai/ha, including a NIS at 0.25% V/V. Also a 52.7g ai/ha rate was sprayed POST over the grape suckers to test for translocation to the vine. The study area had strong nutsedge pressure, and plots were sprayed on 6/8/05 using a backpack sprayer at 25 GPA and 35 PSI using a 8002VS flat fan nozzle. The grapes were in the pre-bloom stage. The height of yellow nutsedge ranged from 2.5-10 cm, and the suckers were 20-30 cm tall. Plots were rated on a 0-100% scale (0 = no control and 100 = complete control) at 1, 3, and 6 WAT for weed control and crop tolerance

Evaluations at 1 WAT indicated yellow nutsedge control was 5, 10, and 15% with the 26.3, 52.7, and 105g ai/ha rates, respectively. The 52.7 g ai/ha rate sprayed POST over the grape suckers resulted in 25% tip burn to the suckers. At 3 WAT the yellow nutsedge control increased to 65, 70, and 80% for the 26.3, 52.7, and 105g ai/ha rates. Tip burn in the sucker treatment remained the same. The weed control averages at 6 WAT were 75, 85 and 85%, while the tip burn in the sucker treatment increased to 50% but no translocation of halosulfuron to aerial parts of the grape plant was detected. A final evaluation at 10 WAT showed 60, 80, and 90% yellow nutsedge control for the 26.3, 52.7, and 105g ai/ha rates.

The POST directed halosulfuron had no apparent visual injury to the grapevines in any of the treatments or rating intervals and the sucker treatment showed no adverse side effects beyond sucker tip burn. The 105g ai/ha rate provided the best yellow nutsedge control overall. This trial will be repeated again in the future.