

BENTAZON FOR POSTEMERGENCE WEED CONTROL IN ONION. Bernard H. Zandstra and Eric J. Ott. Professor and Research Assistant, Michigan State University, East Lansing, MI 48824.

Yellow nutsedge is a serious and persistent weed in onion. Some preemergence herbicides provide preemergence yellow nutsedge suppression, but no labeled herbicide provides sufficient postemergence yellow nutsedge control in onion. Bentazon has good postemergence burndown activity on yellow nutsedge and moderate safety on onion. An experiment was conducted at the MSU Muck Research Farm in 2007 to compare several rates and timings of bentazon application to onion to control yellow nutsedge, avoid crop injury, and obtain maximum yields. Bentazon was applied at 0.28, 0.56, and 1.12 kg/ha either 2 or 4 times, beginning at the 2 leaf stage (LS) or 3 LS. The maximum total rate per plot was 2.24 kg/ha. The onion cultivars Highlander, Nebula, and Yellow Sweet Spanish (YSS) were planted. Bentazon 0.28 kg/ha applied 4 times beginning at the onion 2 LS gave 50% yellow nutsedge suppression and resulted in yield reduction of Nebula, Highlander and YSS. Bentazon at 0.56 kg/ha applied 4 times beginning at the onion 2 LS gave 60-70% yellow nutsedge suppression and good Nebula yield but Highlander and YSS yields were reduced. Addition of crop oil concentrate (COC) to bentazon 0.56 kg/ha increased yellow nutsedge suppression to 70-80% when treatments began at the 3 LS, which resulted in good Nebula yield but reduced Highlander and YSS yield. Bentazon at 1.12 kg/ha applied twice beginning at the 2 LS gave almost 90% yellow nutsedge suppression and good yield of Nebula and Highlander. Bentazon 1.12 kg/ha applied at the 3 LS and later provided only 30-50% yellow nutsedge control, and significantly reduced yield of Nebula, Highlander, and YSS. Addition of COC to bentazon 1.12 kg/ha improved yellow nutsedge control slightly, but did not increase crop injury or yield significantly.

Early control of yellow nutsedge, starting at the onion 2 LS, was an important factor in obtaining maximum onion yields. Some onion cultivars appear to be more sensitive to bentazon than others. Further testing with additional cultivars, timings, and rates will help develop an effective use pattern for bentazon on onion.