

Update on ALS-Resistant Johnsongrass in Hardy County, West Virginia, 2004

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Nov. 2004

In summer 2003, a Hardy County farmer reported herbicide failure on Johnsongrass (*Sorghum halepense* L.) in a cornfield along the South Branch of the Potomac River between Moorefield and Petersburg, West Virginia. Based on field and greenhouse experimentation, it was determined that the biotype of Johnsongrass was resistant to ALS (acetolactate synthase) inhibitor herbicides (<http://www.wvu.edu/~agexten/ipm/weeds/weedresist.pdf>). These results confirmed the first documented case of ALS resistance in Johnsongrass east of the Mississippi River. Management options were discussed in the above publication and via newspaper articles and Extension grower meetings.

As a result of the sharing of information about the ALS resistance problem in the South Branch Valley area, especially along the river where resistance was suspected in 2004, many farmers anticipated the use of other crops or Round Up Ready® varieties of corn or soybean for 2004. A project was designed in spring of 2004 to determine the extent of spread of the resistant biotype of Johnsongrass.

The field in which the ALS-resistant Johnsongrass was found in 2003 served as the reference location for this study. Aerial photographs of the area obtained from the Farm Service Agency (FSA) were used to identify fields north and south of the reference location.

Due to our educational efforts, all of the chosen fields were planted with Roundup Ready®

varieties of soybean or corn. At the time of sampling, the Johnsongrass plants had reached a height of 24 inches. They were transferred to a greenhouse in containers and allowed to establish till they grew to a height of 30-36 inches. The plants were treated with the herbicide nicosulfuron at the recommended rate (Accent at 0.66 oz/A). Observations were taken for the subsequent four-week period at biweekly intervals.

Results indicated that 87 % of the plants treated were not affected by the herbicide Accent. This may support the spread of ALS-resistant biotypes of Johnsongrass in the crop fields along the South Branch of the Potomac River in 2004.

Nicosulfuron is translocated to the growing points where it becomes active. Once the growing points are killed, new growth may occur from food reserves in the rhizome. The recommended stage for application of nicosulfuron to control Johnsongrass is when the plant is 8-18 inches tall. Due to the sampling frame and the scarcity of Johnsongrass available in the selected fields the recommended window of application could not be achieved in this study.

Evidence obtained from this study may indicate that ALS-resistant Johnsongrass populations are still present along the river in Hardy County. Due to the late timing of herbicide application in 2004, the results have to be confirmed in 2005. Growers have expressed satisfaction with the outcome of management efforts recommended in 2004. Please contact your county's WVU Extension office for more information.

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