

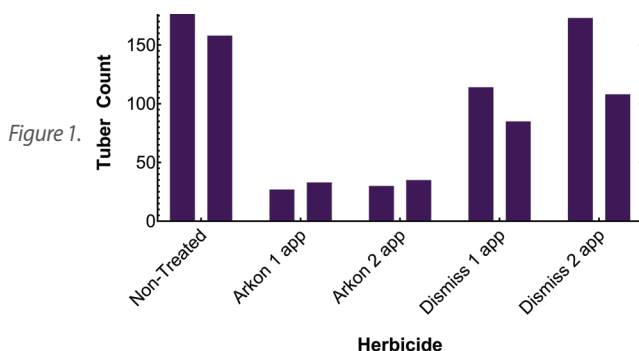
ARKON™ FIELD RESEARCH SUMMARY:

Purple and Yellow Nutsedge Tuber Reduction and False-Green Kyllinga Rhizome Regrowth

Purple and yellow nutsedge and false-green kyllinga are problematic weeds plaguing quality turfgrass stands. Arkon™ Herbicide Liquid is labeled for purple and yellow nutsedge and false-green kyllinga control in cool- and warm-season turfgrasses. Hundreds of field efficacy research trials have demonstrated excellent long-term control of these weeds, and a better understanding of the residual control mechanisms was warranted. Research was conducted by the University of Georgia and Rutgers University to assess the effect of Arkon on purple and yellow nutsedge tuber reduction and viability as well as regrowth from false-green kyllinga rhizomes.

NUTSEDGES

Greenhouse research at the University of Georgia was used to count purple and yellow nutsedge underground tubers 60 days following Arkon applications. Arkon was applied once or twice at 3.4 pint/acre to mature nutsedge plants. Both purple and yellow nutsedge tuber counts were significantly reduced by Arkon compared to non-treated check. Figure 1 represents two studies on purple nutsedge and Figure 2 is one study on yellow nutsedge. Figure 3 is a picture of purple nutsedge tuber count 60 days following one Arkon application.



Purple nutsedge tuber counts following herbicide applications

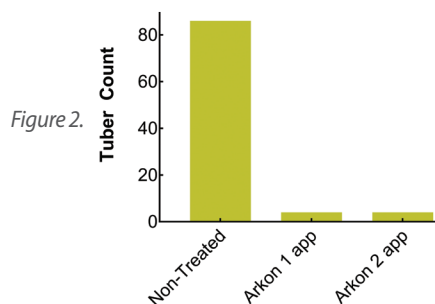


Figure 2.

Herbicide

Yellow nutsedge tuber counts following herbicide applications



Figure 3.

Purple nutsedge shoots (left), tubers (middle), and roots (right) from non-treated (bottom) and one Arkon application (top).

The tuber viability of purple and yellow nutsedge following Arkon applications was also measured. A viable tuber was determined if any new shoot or root emerged after two weeks in favorable conditions. Arkon reduced purple nutsedge tuber viability by 96 to 99%; however, it only reduced viability from 29 to 31% on yellow nutsedge tubers. Even though yellow nutsedge percent tuber viability was greater than purple nutsedge, the number of viable tubers is low (Table 1).

Table 1.

Herbicide	Purple Nutsedge			Yellow Nutsedge		
	Tuber Count	Percent Viability	No. of Viable Tubers	Tuber Count	Percent Viability	No. of Viable Tubers
Non-Treated	87	86	74	86	98	84
Arkon 1 app	6	1	0	4	71	2
Arkon 2 app	6	4	0	4	69	2

Purple and yellow nutsedge tuber viability following herbicide application.

FALSE-GREEN KYLLINGA

Research from Rutgers University measured false-green kyllinga rhizome regrowth from herbicide-treated plants to determine rhizome viability. False-green kyllinga plants were grown in greenhouse conditions and then Arkon was applied once or twice at 3.4 pint/acre. Rhizomes from those treated plants were harvested and then replanted. The number of aboveground shoots regrowing from those treated rhizomes was counted six weeks after planting. One or two Arkon applications significantly reduced the number of shoots regrowing from rhizomes previously treated with herbicides. Figure 4 is the aboveground shoot count six weeks after transplanting rhizomes. Figure 5 displays the amount of regrowth from non-treated rhizomes (top) and two Arkon applications (bottom).

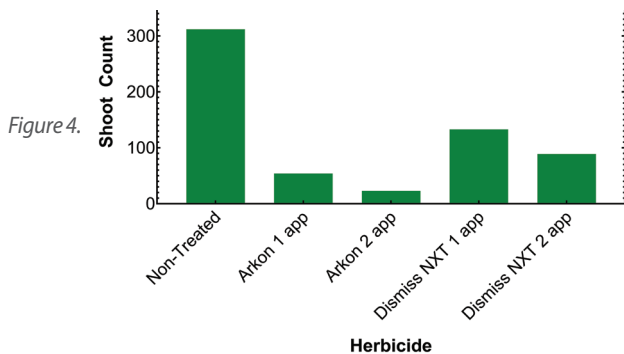


Figure 4.

False-green kyllinga regrowth of herbicide-treated rhizomes.

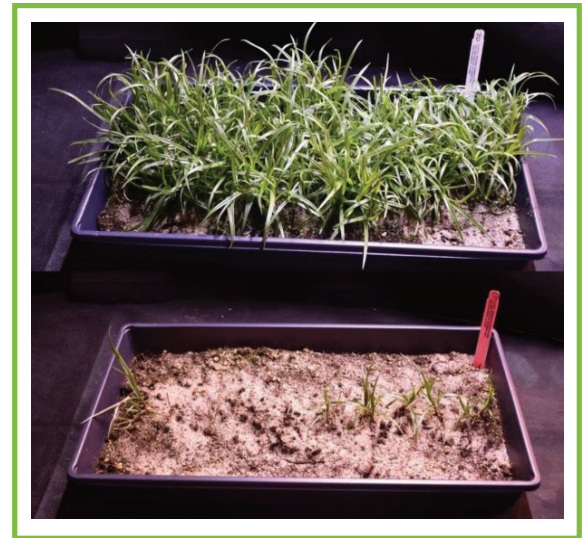


Figure 5.

False-green kyllinga regrowth from non-treated rhizomes (top) and two Arkon applications (bottom).



SUMMARY

- Arkon applications reduce both tuber number and viability of purple and yellow nutsedge.
- Arkon reduces the amount of regrowth from herbicide-treated false-green kyllinga rhizomes.
- These findings contribute to long-term, residual control of purple and yellow nutsedge and false-green kyllinga control using Arkon herbicide.

Data courtesy of the University of Georgia and Rutgers University.