
**VEGETATION MANAGEMENT
GUIDELINE: Johnson grass
(*Sorghum halepense* [L.] Pers.)**

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Johnson grass invades riverbank communities and disturbed sites, particularly fallow fields and forest edges, where it crowds out native species and slows succession. It quickly dominates the herbaceous flora and reduces plant diversity.

Johnson grass is a very aggressive, perennial grass. It occurs in dense clumps that spread by seed and rhizomes to form nearly pure stands. The grass emerges late in spring and forms seed by late July, reaching a height of 2.4 m or more. Stems and leaves die back after the first frost, but the dead litter often covers the ground all winter. Rhizome cuttings commonly form new plants, making it very difficult to eradicate. It spreads rapidly and is not affected by many of the agricultural herbicides.

In areas with light infestations of Johnson grass, clumps and individual plants may be hand pulled during June, just after a rain when the ground is soft. All plant parts should be removed from the area. Broken stems and roots left in the ground should be dug up if only a small area is involved. It is more effective to spot-treat the individual plants with herbicide than to pull them, and large clumps can be sprayed with 2% Roundup (a formulation of glyphosate) using a hand sprayer or backpack sprayer. Herbicide treatment may need to be repeated for several years to ensure good control.

To control Johnson grass in heavily infested areas, seed panicles should be cut and removed from the area where practical. Dense patches can be controlled by spraying the foliage with 2% Roundup during

June, just prior to seed maturity. Care should be taken to avoid contacting nontarget plants, since Roundup is a nonselective herbicide. Do not spray so heavily that herbicide drips off the target species. The chemical should be applied while backing away from the area to avoid walking through wet herbicide. By law, herbicides may be applied on public properties only according to label instructions and by licensed herbicide applicators or operators.

On severely disturbed or buffer sites, repeated and close mowing kills Johnson grass seedlings, prevents seed production, and reduces rhizome growth and regrowth of shoots. Sites may be tilled where it is practical (e.g., abandoned cropland), leaving the exposed roots to winter kill. Repeated tillage (e.g., six times at two-week intervals during the growing season) prevents rhizome development and reduces Johnson grass populations. Limited early season tillage, however, encourages rhizome growth by spreading pieces of the rhizomes. Tillage has several drawbacks: it is not practical in many places because of terrain and erosion hazard, it seldom is effective by itself and allows other weedy species to invade, and it may also destroy native species present.

In a monoculture, livestock may be used to eliminate Johnson grass by grazing. Like tillage, grazing has drawbacks. Grazing increases the potential for introducing other exotic plants. Also, livestock trample the soil and damage other species. Spraying 2% Roundup on foliage using a tractor and power sprayer provides effective control on severely disturbed sites.

Once control has been successful, a preferred method of maintaining control is hand pulling individual plants immediately upon discovery. All plant parts, including rhizomes, must be removed. It may be necessary to hand pull a population several times to obtain control. Surrounding seed sources should be eliminated where possible to prevent continual reinvasion. Another treatment is spot application of 2% Roundup to eliminate invading individuals the first year and to eliminate all surrounding seed sources.

Practices that were found to be ineffective in controlling Johnson grass include the following: (1) mowing — usually does not kill or eliminate established plants, (2) spring burning — may encourage regrowth, (3) single applications of herbicide — seldom eliminates the species from an area. Although grazing is a means of biological control that may reduce plant vigor, it has several negative impacts if used in natural areas. No other biological controls are known that are feasible in natural areas.

GENERAL REFERENCES

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