DALLISGRASS

Integrated Pest Management for Home Gardeners and Landscape Professionals

Dallisgrass, *Paspalum dilatatum*, is a tufted perennial grass that was introduced into the United States from Uruguay and Argentina. It is now naturalized in much of the southern United States. In California dallisgrass is found throughout the state except at high elevations, such as the Great Basin and Sonoran Deserts. It has been used as a pasture grass in wet areas or irrigated sites, but it is less commonly used as forage in California because of its weedy character. The seed heads are susceptible to an ergot fungus that is toxic to livestock when ingested. Dallisgrass is primarily a weed in turfgrass, wet roadside areas, irrigation ditchbanks, and in some orchards and vineyards. It is closely related and similar in appearance to knotgrass, *Paspalum distichum*, which is a mat-forming perennial grass with good forage qualities and more desirable attributes for natural areas. Bahiagrass, *Paspalum notatum*, is also a warm-season tufted perennial with short rhizomes that could be confused with dallisgrass.

Figure 1. Dallisgrass grows in a clump and increases in diameter as its shallow, underground stems (rhizomes) grow outward.

IDENTIFICATION AND LIFE CYCLE

Dallisgrass is a coarse-textured grass that grows in a clump and slowly increases in diameter as its shallow, underground stems (short rhizomes) grow outward. The rhizomes have short internodes (the length of stem between the joints) that look like concentric rings on its surface (Fig. 1). The presence of these distinctive rhizomes is a good way to distinguish dallisgrass from other common clumping grasses in lawns, such as crabgrass. As the clump matures, the center may die and a different grass or weed may be growing in its center. Where large numbers of dallisgrass plants grow together they can form almost a solid planting with uneven texture and poor turfgrass qualities.

The leaf blades of dallisgrass are fairly wide (¼ –½ inch) compared to desirable thinner turf grasses. If left unmowed, blades will grow 4 to 10 inches long. At the base of each leaf blade is a collar with a membranous ligule about ¼ inch long and no auricles or projections. At the base of the collar is the leaf sheath, which is slightly flattened. Frequently there is purplish coloration at the base of the grass stems (technically called culms). The flowering stalk (raceme) grows 14 to 65 inches tall and the flower head (inflorescence) consists of 2 to 10, often drooping, spikelets (delicate branches) that arise from different points at the top of the flower stalk. Each spikelet has two rows of flat, egg-shaped seeds along its entire length and is pale green to purplish in color. (Fig. 2).

For information on other troublesome species of grasses or grasslike weeds, see *Pest Notes* on Annual Bluegrass, Bermudagrass, Crabgrass, Kikuyugrass, Nutsedge, and Green Kyllinga listed in Suggested Reading.

Dallisgrass produces abundant amounts of seed, which are its primary means of dispersal. Water, lawn mowers, and humans or pets spread the seed to new places. Seeds usually germinate in spring and summer when soil temperatures are in the 60° to 65°F range and grow to form new clumps. The optimum air temperature range for growth is 80° to 90°F and when temperatures are in this range, plants grow very rapidly. This weed is often found growing in wet areas such as drain ditches, low places, and in heavily irrigated turfgrass. It tolerates both sandy and heavy clay soils and, once established, is drought-resistant and frost-tolerant. Dallisgrass does not become off-color in winter like many

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warm-season grasses. It responds to nitrogen fertilizer and competes well against turfgrasses in fertilized sites.

IMPACT

Dallisgrass creates an unsightly clump in turfgrass that can be a problem in golf courses, sports playing fields, and home landscapes. The stiff clumps are much coarser in texture than other grasses common in developed recreational areas such as lawns, golf courses, or parks and can present a hazard in sports fields and play areas, causing people to fall. It has a faster growth rate than turfgrasses. The flower stalks (racemes) often escape mowing and spring back up above the rest of the turfgrass, causing problems in golf courses and sports fields as well as lending a rough, uneven appearance to lawns (Fig. 3).

MANAGEMENT

A major component of dallisgrass management is preventing establishment of new plants. In home landscapes, removing young plants by digging them out before they form rhizomes or set seed is the best strategy for control. Mature plants can also be dug out, but they sometimes grow back if rhizomes are left behind. In professionally managed turfgrass areas, prevention is an important component in managing this weed. When dallisgrass is abundant or the plants are located over a large area, it may be necessary to supplement cultural practices with herbicides.

Prevention

Dallisgrass can be introduced into lawn areas with new turfgrass seed or sod, but often the seed is introduced on mowers that have been used in contaminated sites and then moved to weed-free sites. Cleaning a mower after mowing a contaminated site should reduce the chance of invasion into new areas. Inspect sod before taking delivery to make sure dallisgrass is not present. Don't use soil from dallisgrass-contaminated areas to repair low or bare spots in lawns. In dallisgrass infested areas delay or minimize the amount of aeration performed on the turfgrass in spring when new seedlings germinate to avoid small open areas where dallisgrass plants might become established.

Cultural Control

Because dallisgrass is a perennial plant, persistence is required to kill it with cultural practices. In lawn areas the clumps can be removed by digging. Mowing the turfgrass will not remove dallisgrass, but when turfgrass is mowed at its optimum height, it is better able to resist an invasion of this weed.

When dallisgrass has been established for some time in the turfgrass, seed will be abundantly present in the soil. In well-established turfgrass, seedlings may not be able to establish, but if there are open areas in the turf, seed will germinate in these areas. If bare areas are present, overseed them with desirable turfgrass species to reestablish the turf.

Dallisgrass is not normally a problem in ornamental beds, but if it does occur, the plants can be dug out and a thick layer of mulch laid over the area to control the seedlings. Along roadsides and fences or in orchards and vineyards, the plants can be dug out during summer and left in place for the clumps of rhizomes to dry. As long as all the rhizomes are dug up and dried, the plant will not regrow. New seed will continue to germinate and establish unless the seedlings are removed.

Mulching with organic materials is not very effective for the control of mature dallisgrass. However, if the tops of the plants are removed down to the soil line, laying black plastic or landscape fabric over the area will control the remainder of the plant as well as any new seedlings. Summer solarization with clear plastic significantly helps control dallisgrass seed and reduces rhizome regrowth. For information on solarization, see the publication *Soil Solarization: A Nonpesticidal Method for Controlling Diseases, Nematodes, and Weeds* listed in References.

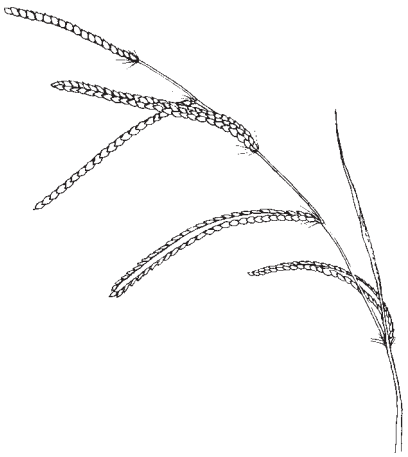

Figure 2. Dallisgrass flower head.

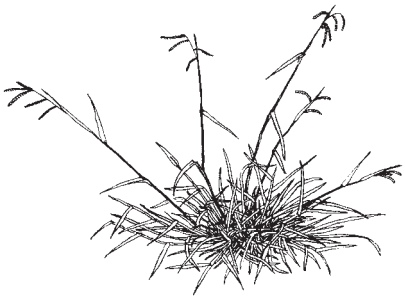

Figure 3. Dallisgrass creates unsightly clumps in turfgrass and the flower stalks often escape mowing causing hazards in recreational areas.

Chemical Control

Where digging out clumps of dallisgrass in turfgrass is not practical, herbicides may be used. Herbicides to control established plants are referred to as *postemergent* herbicides. These herbicides are either selective and kill only specific weeds, or they are nonselective and kill any plant they come in contact with. To control germinating seed, *preemergent* herbicides are used. In order to obtain complete control of this perennial grass weed, it is necessary to control both the established dallisgrass plant and the germinating seed.

Established Plants in Turfgrass. The postemergent herbicides MSMA or CMA (such as Weed-Hoe or Weed-B-

Gon Crabgrass Killer for Lawns) can be used by home gardeners to control clumps of dallisgrass growing in lawns. These herbicides are relatively selective and must be applied two to three times at 3-week intervals in the summer. The turfgrass and dallisgrass should be in good growing condition before application. Also, it is best if the turf is left unmowed for 2 weeks before the first application to create the maximum amount of leaf area for coverage by the herbicide spray. Withhold irrigation for 24 hours after application. Don't apply these herbicides during extremely hot weather and check the label for rate adjustments during warm weather to minimize the risk of injuring the turfgrass. There are some restrictions on turfgrass types where these products can be used, such as on St. Augustinegrass.

Foramsulfuron (Revolver) is a new postemergent herbicide for control of cool-season grass weeds and turf species in warm season lawns. It can only be used in bermudagrass and zoysiagrass lawns and has good weed control activity on dallisgrass, but be aware that it is harmful to most cool season turfgrasses. This product is only available to professional applicators at this time, but may be used on residential lawns.

Some turf managers and home gardeners use the nonselective herbicide glyphosate (Roundup) to control dallisgrass in turf. Glyphosate kills both the dallisgrass and the turfgrass, leaving an area of dead turf. To keep the turf vigorous and growing well enough to out compete germinating dallisgrass seed, the spot needs to be overseeded or a preemergent herbicide needs to be applied. Sometimes dallisgrass is not entirely killed after an herbicide treatment, even though the turf is severely damaged or killed, and retreatment may be required. Other nonselective postemergent herbicides are not as effective as glyphosate.

Seed in Turfgrass. Preemergent herbicides can be used in established turfgrass to control germinating dallisgrass seed. Apply preemergent herbicides in late winter or early spring before dallisgrass seed germinates. Herbicides that control crabgrass such as benefin + oryzalin, bensulide, DCPA, dithiopyr, oryzalin, oxadiazon pendimethalin or prodiamine, are also effective on dallisgrass. (Bensulide, DCPA, and oxadiazon are for professional use only and may have some restrictions for use on residential lawns.) Preemergent herbicides used on lawns need to be irrigated into the soil with about ½ inch of water relatively soon after application in order to become effective. Consult the label for application details.

Ornamental and Noncrop Areas. In ornamental or noncrop areas, glyphosate can be used as a nonselective treatment to control established plants. Apply glyphosate when dallisgrass is flowering but before seed has been produced.

The preemergent herbicides napropamide, oryzalin, pendimethalin, or combinations of benefin plus oryzalin are effective to prevent dallisgrass seed from germinating. Benefin plus trifluralin is also available, but only for use by commercial pest controllers. Once seedlings appear, then postemergent herbicides may be necessary to control them chemically.

REFERENCES

DiTomaso, Joseph M. and E. A. Healy. 2007. *Weeds of California and Other Western States*, Oakland: Univ. Calif. Agric. Nat. Res. Publ. #3488.

Holms, L. G., D. L. Pluckett, J. V. Pancho, and J. P. Herberger. 1977. *The World's Worst Weeds, Distribution and Biology*. Honolulu, HI: The University Press of Hawaii.

Murphy, T. R., D. L. Calvin, R. Dickens, J. W. Everest, D. Hall, and L. B. McCarty. 1987. *Weeds of Southern Turfgrasses*. Athens, Ga: Coop. Ext. Serv./Univ. Ga College of Ag. and Env. Sci.

Selected Weeds of the United States: 1970. U.S. Dept. of Agric.. Agric. Res. Service, Agriculture Handbook No. 366. U. S. Government Printing Office, Washington D.C.

SUGGESTED READING

For information on other troublesome species of grasses or grasslike weeds, see these additional *Pest Notes* on Annual Bluegrass, Bermudagrass, Kikuyugrass, Nutsedge, and Green Kyllinga. Available online, http://www.ipm.ucdavis.edu/PMG/PESTNOTES.

Elmore, C. L., and W. B. McHenry. 1989. Weed control in turf areas. In *Turfgrass Pests*. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 4053. Out of print.

Elmore, C. L., J. J. Stapleton, C. E. Bell, and J. E. DeVay. 1997. *Soil Solarization: A Nonpesticidal Method for Controlling Diseases, Nematodes, and Weeds*. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 21377.

LeStrange, M. and C. A. Reynolds. Jan. 2004. *Pest Note: Weed Management in Lawns*. Oakland: Univ. Calif. Agric. Nat. Res. Publ. 74113. Also available online, http://www.ipm.ucdavis.edu/PMG/menu.weeds.html.

Reynolds, C. A. and M. L. Flint. 2002. The UC Guide to Healthy Lawns. Univ. Calif., Davis, UC Statewide IPM Program. Available online http://www.ipm.ucdavis.edu/PMG/menu.turf.html. Accessed Apr. 17, 2008. ❖

For more information contact the University of California Cooperative Extension in your county. See your telephone directory for addresses and phone numbers.

AUTHORS: M. LeStrange, UC Cooperative Extension, Tulare Co.; P. M. Geisel, UC Cooperative Extension, Statewide Master Gardener Program; D. W. Cudney, Botany and Plant Sciences emeritus, UC Riverside; C. L. Elmore, Plant Science emeritus, UC Davis
TECHNICAL EDITOR: M. L. Flint
COORDINATION & PRODUCTION: P. N. Galin
ILLUSTRATIONS: **Fig. 1:** W. Suckow; **Figs. 2, 3:** C. DeWees

Produced by UC Statewide IPM Program, University of California, Davis, CA 95616

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