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## Turfgrass Portraits V:

# Bermudagrass

By DR. ROBERT W. SCHERY

Director, The Lawn Institute  
Marysville, Ohio

This is the fifth in a series of nine articles on the basic traits and maintenance procedures for common turfgrasses. Next month author Schery discusses *Zoysias*.

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**B**ERMUDAGRASS is as successfully ubiquitous in the warmer regions as is Kentucky bluegrass farther north. And its origins and interrelationships are equally complicated. Bailey lists "Europe and Asia" as place of origin, but most authors do not care to be even that definite, describing *Cynodon* (the bermudagrass genus) merely as native to warmer regions of the world. There is reason to suppose that early introductions into the United States were from Europe via the Atlantic islands; otherwise why "bermuda" and "bahama" grass for *C. dactylon*? Genetic source of many lawn varieties is Africa. Of course so widespread and aggressive a grass has received many common names, including the derogatory "wiregrass" familiar along the eastern seaboard. Even the generic name, *Cynodon*, lacks priority, but has been conserved (over *Capriola*) by international agreement.

No wonder that from among this worldwide complex of species, hybrids, varietal selections, and ecotypes, a welter of bermudagrass possibilities faces the

lawnsman. And no wonder universities concerned with bermuda breeding have hundreds of selections under observation, in such dissimilar climates as Florida, Kansas, and Arizona. But perhaps the richest source of improved bermudagrasses has been the Coastal Plain Experiment Station, Tifton, Ga.

Bermudagrasses can be grouped as the heterogeneous "common," volunteering widely, and available as seed; and a series of finer-textured, denser varieties, many of them hybrids, which must be propagated from living shoots because they are either sterile or do not come true from seed. The latter are for the finer-kept lawns and golf courses; the former for more casually kept turfs, where economy is a consideration.

All bermudagrasses love warm climates, doing well in the United States from Southern California to the Piedmont of the Carolinas. Sunturf and U-3 are fairly winter-hardy from eastern Kansas into the Ohio Valley. Even more reliably hardy selections are promised out of Kansas research (in recent winters much U-3 has been killed in latitudes as far north as Missouri).

In the Deep South,—viz. southern Florida and the humid Gulf Coast,—bermuda does passingly well, but usually takes a back seat to other southern grasses better adapted or more easily cared for. Thus bermuda domain is most strikingly the "upper South," centering from middle Georgia to eastern Oklahoma, and the lower elevations of the Southwest.

### Growth Pattern

True to its southern personality, bermudagrass grows only in warmer weather. Indeed, it seems never too warm for bermuda, if water and fertility are adequate. But at the approach of frost, October in most of its homeland, bermuda slows, turns off-color (eventually to a dreary brown), not to revive again until about April. Aside from sometimes winterkilling, dormant bermuda restrains winter weeds poorly. These make the brown lawn even less attractive because

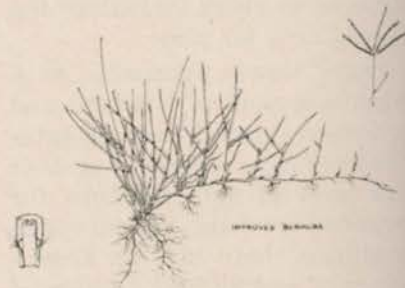
of the contrasting splotches of green. That is why bermuda turfs are winterseeded to fescue-bluegrass mixtures, as described in Portrait IV (WT, Oct., pg. 16).

But in warm weather bermuda growth is insatiable. It spreads rampantly by both runners and rhizomes. That is at once a virtue and a fault. Such vigor makes a thick lawn in a hurry, squeezes weeds, and brings quick recuperation. Also it means that mowing must be uncomfortably frequent (twice per week, or more often on a golf green), and that a lot of fertilizing and watering are needed to keep bermuda looking well. A bermuda turf, especially of the select varieties, is not for low-maintenance swards.

### Maintenance

Overriding is bermuda's abhorrence of shade; it will not grow under trees. Other than that, and the winter dormancy spoken of, its weaknesses are few and moderate. Appearance is attractively fine textured and deep colored. It is widely tolerant of soil. It is moderately resistant to drought, salt air, and wear. It is not frost tolerant, but recovers quickly when warm weather returns. It mows neatly, is not unduly susceptible to disease or insects. But most varieties are quite a bother in invading flower beds and borders.

Fertilization of well-kept turfs is recommended every four or five weeks, at 1 lb. elemental nitrogen/M, using a complete fertilizer at least occasionally. Natural vigor and this stimulation make frequent mowing mandatory, in most instances best accomplished with a reel mower set  $\frac{1}{2}$ -1 $\frac{1}{2}$  inches. Water-



Diagrammatic drawing of a bermudagrass plant.



ing should fit soil and climate, keeping in mind that a "high-living" grass such as bermuda needs plenty of drink, especially on the sandy coastal plain.

### What To Watch Out For

In the Southeast, sting and lance nematodes are becoming increasingly troublesome. Soil treatment with a nematocide often gives much improved turf. In the Southwest, the Eriophyid mite (*Aceria*) has become quite a pest; injury can be reduced by diazinon spray combined with fertilization. Arizona also has some spiral nematode trouble.

The upper Midwest has experienced severe winter loss from an uncertain ill called "spring deadspot." Patches of bermuda die much like snow mold on bent, and runners will not recolonize the blemishes. Dieldrin, an insecticide, helps thwart the trouble, and Mal-linckrodt now has a preventive.

Many diseases that bother other grasses attack bermuda, including *Helminthosporium* (summer blight is *H. cynodon-tis*), *Sclerotinia* dollarspot, and *Rhizoctonia* brown patch. Webworms frequently damage bermuda. And it is only natural for so vigorous a grass to thatch quickly.

Most bermudagrasses are tolerant of selective herbicides, fungicides, and insecticides. Tifgreen is a little sensitive to 2,4-D, and Texturf 10 discolors from chlorinated hydrocarbons, but both recover quickly. Banvel-D may cause blemishing, and Trifluralin has damaged bermuda. Most preemergence herbicides afford no difficulty, nor usually do even Simazine and Atrazine if applied when the grass is dormant. Arsonates may temporarily discolor some varieties. Of course, grass killers such as Dalapon, Vapam, and methyl bromide should be avoided.

### Propagation

Seeding is simplest and most economical, but of course only applicable to the genetically mixed "common." Seed that has been dehulled sprouts quickly. It is usually sown at 2 lbs. or less/M. Unhulled seed requires



Striations in putting green bermudagrass made by vertical mowing are pointed out by Dr. Evert Burt, Plantation Experiment Station, Ft. Lauderdale, Fla.

more time to soak up moisture, but, if sowed amply ahead of need, is as adequate as dehulled seed. It is often sowed 3 lbs./M.

The named varieties must be propagated from living starts,—plugs (biscuits of sod), sprigs (individual stems), or stolons (chopped stems,—scattered, top-dressed, and watered: if kept moist, bermuda roots readily). Quantity for planting varies with how quickly sod is demanded. Plugs and sprigs planted 6 inches apart will be quicker to fill than the same starts planted on 12-inch centers (but of course more than twice as much planting material is required). Stolons may be planted as lightly as one or as heavily as six bushel/M.

### Varieties:

**Common**—Unselected *C. dactylon*. Attractive if well kept, but somewhat more open and coarser than named varieties. U-3 seed must be regarded as "common," since genetic re-assortment results in turf not identical with parent U-3.

**U-3**—A denser, more cold-tolerant selection than the general run of common, widely planted in middle latitudes for golf course fairways. Wears well, is drought tolerant, but spreads more slowly than many varieties. In severe winters, it kills appreciably in the transition belt,

and recently it has been injured by spring deadspot.

**Sunturf**—This is a purported natural hybrid between *C. dactylon* and *C. transvaalensis* (named *C. magennisii*), introduced from South Africa. A sterile triploid hybrid, it produces few seedheads. Like U-3 it is denser and more attractive than common. It is reasonably tolerant of cold, and remains green a little longer in autumn than do most bermudas. Runners stay mostly above ground, so that control at borders is easier than with varieties which rhizome strongly. Sunturf does suffer somewhat from rust.

**Tifgreen** (Tifton 328)—The most widely planted grass for golf greens in the South. Like Sunturf, a sterile triploid hybrid between *C. dactylon* and *C. transvaalensis*. An excellent fine-textured grass that has dominated low-clipped bermuda usage. Somewhat sensitive to 2,4-D and certain other herbicides, and to webworm, but fairly disease- and cold-resistant.

**Tiflawn** (Tifton 57)—A tough hybrid suited well to lawn and athletic turf, very vigorous, deep green, resistant to insects and disease. Moderately cold-tolerant and drought-resistant.

**Tifway** (Tifton 419)—A chance triploid hybrid of *C. dactylon* and *C. transvaalensis*, of fine texture and deep color, resisting cold discoloration, with a "stiffer" consistency than most bermudas and hence recommended for golf course fairways. Spreads rapidly.

**Other Familiar Varieties**—Ormond is a presumed natural hybrid found at Ormond Beach, widely planted in the deep South, quick-growing, of good color, but not too disease- or cold-resistant, mostly used for lawns and fairways. Everglades is similar. "Texturf" selections are from the Texas Experiment Station, with Texturf 10 receiving fair usage for lawns and athletic fields in the Southwest. Tiffine is an early Tifton hybrid of fine texture, not now widely used.

For a thorough review of bermuda selections, see Agricultural Handbook 270, USDA, "Evaluation of Bermudagrass Varieties," by Juska and Hanson, August 1964, Superintendent of Documents, Washington, D.C.