
Turfgrass Portraits I:

Kentucky Bluegrass

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

KENTUCKY bluegrass may have been brought to the Midwest before 1700 by French missionaries. Some claim it was "introduced" into Kentucky, where it acquired its present familiar name in the early 1800's, by Harrison's Kentucky volunteers returning from the battle of Tippecanoe. It's a good guess that today more Kentucky bluegrass clothes America's suburbs than there are corn plants in the Corn Belt. Why this spectacular success?

A combination of traits is responsible, in all of which Kentucky bluegrass rates near the top. Bluegrass spreads by underground stems (rhizomes), and thus is not an offensive thatch-former as are most stoloniferous grasses. It is soft of texture, aristocratic in stance, its arching culms graceful, the bluish-green color luxuriant in the lawn. Kentucky bluegrass is widely adapted, can survive under differing conditions, in distant regions. It is strongly recuperative, revives well after drought, wear, scalping, or disease. Its maintenance is not demanding. It mows neatly (except for a brief span

when seedheads form). It is self-sufficient without being transgressive—pleasantly ladylike at flower bed borders compared to quack or bermuda. And it is durable under pesticide treatment, enabling selective clean-out of most pests in a bluegrass turf.

Growth Pattern

Autumn, with its warmish soils, bright days (but crisp nights), gentle October rains, is very much bluegrass' cup-of-tea. Food reserves build then. Sod thickens with the formation of many fat side shoots (tillers). But, responding to shortening day length, growth is low; mowing is not uncomfortably increased, no matter how much the lawn is fertilized. There is some increase underground right through winter. Come spring, bluegrass is resplendent even before the trees leaf out. Rhizomes spread and tillers fill. Soon the main culms initiate seedheads, are destined to turn stiff, and become a bit of a nuisance for the mowman.

A touch of shabbiness follows seeding season. Each stem that initiated a seedhead withers, and summer finds bluegrass thinning. New tillers won't become robust where summers are hot, and are sometimes not really adequate until autumn. Summer is a trying season for bluegrass, energy often being dissipated faster than photosynthesis can replenish it. It does little good to force bluegrass with fertilizer in hot weather; indeed, too abundant nitrogen then may lead to "disease," and rather complete debilitation.

Adaptation and Preferences

Kentucky bluegrass obviously benefits from a more northerly climate. South of Tennessee or the Texas Panhandle, mountain

elevations excepted, there is just too much hot weather for bluegrass. Perhaps the winters are insufficiently cold, too. Except in the shade, it mostly passes out in summer.

As with any plant, bluegrass performs best in rich, friable soils, well drained and retentive. But it's widely tolerant. A lot of good bluegrass grows on clay almost boggy in spring. It can be perpetuated on sands, if fertilized enough and watered occasionally. It looks starved on infertile soils, but generally persists. It relishes neutral, limy soil, but tolerates acidity. One thing bluegrass does resent is close mowing, scalping; set the mower 1½ inches high, maybe more in middle latitudes. Water? — bluegrass can "sit out" drought, revive when conditions turn favorable. Indeed, there are indications that summer drought is therapeutic to bluegrass (perhaps because competing vegetation is injured more and recuperates less well). But for continuously green sward, irrigate bluegrass whenever it turns blue with incipient wilting and is no longer resilient enough to "wash out" footprints.

Propagation

Bluegrass tenacity, and ability to spread by rhizomes, permit its propagation by plugs (biscuits of sod), or by sod itself. But seeding is simpler, more economical. There is excellent seed production in this country, with a long and honorable history. Between 20 and 30 million pounds of Kentucky bluegrass seed is sowed annually to America's fine turfs. In each pound there are approximately two million seeds—clean, plump, of at least 85% purity and 75% germination (accepted trade standards; most bluegrass is essentially weed-free; the non-seed fraction, "inert," is mostly

Weeds and Turf is proud to present the first in a series of profiles of common American turfgrasses by Dr. Robert Schery of The Lawn Institute. Dr. Schery, a frequent *W&T* contributor and world-renowned authority on the subject, covers history, characteristics, and maintenance methods for each species, so that turf professionals may use each installment as a "working manual" and as a training aid for maintenance crews.

chaff and hulls, impractical to winnow away in the cleaning operations because there would be loss of viable seed too).

Recommended seeding rate, usually in mixture with fine fescue, is 2-3 lbs./M, 20 or more potential plants per square inch. On good seedbeds, loose and crumbly, even lighter rates are possible—provided so little seed can be spread evenly (use a good spreader). Watered as needed, and mulched to conserve moisture, bluegrass sprouts in as little as five days in warm weather. Where warmth or humidity are less than ideal, several weeks may pass before bluegrass is very much evident. Bluegrass sprouts best, as it grows fastest, in a 65-80° temperature range.

What To Watch Out For

Trouble can beset Kentucky bluegrass when weather gets warm, especially if the grass is succulent from nitrogen. Disease gets blamed for its demise, but "soft" bluegrass can't stand up to 100° temperature anyway. So go light on summer feedings where hot days aren't at least counterbalanced by cool nights.

Leaf spot (*Helminthosporium*) may be rampant in the cool of spring. If the grass is not oversucculent, and is mowed reasonably high, chances are the disease will not extend to the foot rot stage, with appreciable loss of turf. The lawn can be sprayed with one of the excellent general-purpose fungicides*. Bluegrass is quite tolerant of fungicides if applied correctly.

Sometimes insects attack. Sod webworm, the larva of the lawn moth, has been serious in the Midwest in recent years. It can be controlled by drenching insecticide into the crowns (where the webworm makes its burrow). Chlorinated hydrocarbons (aldrin, chlordane, dieldrin, DDT, heptachlor, toxaphene, etc.) have worked well through the years, but webworm populations seem building up resistance. Lawnsmen may have to

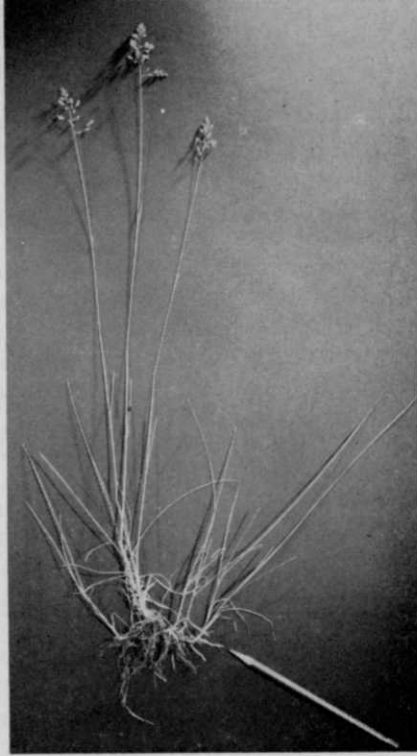
turn to the phosphatics such as Diazinon, Ethion, and Trithion, or to safe general insecticides such as Malathion and Sevin. The same is true with chinchbug, though this is not the serious pest with bluegrass that it is with st. augustine in the South.

Grubs in the soil may do damage; one cure is a long-lasting insecticide such as chlordane or dieldrin drenched into the soil. Fortunately, recent cold, dry winters have reduced the once prevalent Japanese beetle over much of the Northeast.

Varieties

Adventive Kentucky bluegrass, termed "natural" or "common," represents a mixture of hereditary combinations that have survived in a diversity of environments since colonial times. "Survival of the fittest" assures that these are well adapted to their particular niches. Seed harvested from natural stands, especially in Kentucky (where the gene pool is perhaps the broadest), ends up in the seed bag as many "natural selections," suitable to as wide a variety of ecological situations as occur in the seed fields. This covers most of the varying conditions apt to be found in the average lawn. Moreover, tests have proven that so broad and flexible is Kentucky bluegrass heredity, that seed from one region adapts readily to another location even though a thousand miles removed. This striking adaptiveness of natural Kentucky bluegrass is an advantage shared by few species.

Even so, man wishes to select from this wealth of natural types certain forms he fancies, or which behave in a singular way. Because Kentucky bluegrass is largely apomictic (nonsexual; i.e. most seed does not require sexual fertilization, but represents exactly the parent plant), almost any bluegrass plant can be perpetuated as a pure line. It is no wonder that there have been numerous Kentucky bluegrass releases, and many selections under test. It is equally no surprise that few exceed natural Kentucky bluegrass, selected



A complete natural Kentucky bluegrass plant which was yanked from the soil in mid-spring. Notice the spreading rhizomes underground (one at pencil point), the clusters of trilliers, and the seedheads on older culms.

and proved by nature, in more than a few respects.

The first commercially important selection was Merion, noticed as an attractive patch on the Merion Golf Course near Philadelphia. Merion has received much publicity and acclaim; it is noteworthy for its comparatively low growth, density, color, and resistance to leaf spot disease. But no variety has a corner on all desirable traits; Merion does rust (and catches other diseases), demands heavier fertilization, and (because of tight growth) tends to thatch quicker than most bluegrasses.

Park is another established variety, noteworthy for heavy seed that sprouts readily. Park results from the interplanting of a dozen natural bluegrass selections made by the University of Minnesota. It contains a good measure of the genetic variability that is natural to Kentucky bluegrass.

Other American selections include Arboretum, a "southern" bluegrass population from Missouri; Delta, from Canada, a good seed yielder; Newport, from a west coast of Oregon clone (out of which came C-1), dense and vigorous in autumn but tending to peter out; Windsor resembling Merion a little, too new to be reported on.

*Acti-dione-thiram, Captan, Dyrene, Kromad, Maneb, PMAS (not on Merion), Tersan OM, Thiram, Zineb, etc. are recommended for leaf spot and most other diseases.