

Seed selection is important

*This first step in turf operation may seem relatively simple—
but there are pitfalls.*

By DR. ROBERT W. SCHERY

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Seeding the golf course may seem a singularly uncomplicated operation, compared to the delicacy in rates and timing needed for weed control, disease prevention and fertilization of the pampered greens. Yet, there are factors the superintendent may never have considered. Conceded, that every superintendent understands good seedbed preparation; still, the best in planting can be defeated if choice of seed is not wise.

For plantings where the soil has been sterilized, chiefly greens, the superintendent must be exceptionally careful about the seed he sows, or the sprigs and stolons he plants. If not, he may waste his sterilization investment.

Fairway plantings are less demanding, but even there careful scrutiny of seed quality is merited. The close clipping that tournament play now calls for increasingly focuses attention on bolster-seeding. Overseeding becomes a regular maintenance requirement, just as is the winterseeding of southern greens.

Dr. Daniel, Purdue University, points up the revival of interest in Kentucky bluegrass fairways, once considered impossible under low mowing. Now Daniel feels bluegrass has much to recommend it, provided modern maintenance precautions are taken. Among them he advises "repeated light overseedings at 10-40 lbs. for each acre." Seed purchase shares importance with other budgeted items.

With the spread of fairway irrigation (and close mowing), many turfs have

turned largely to *Poa annua*. These may need partial renovation, including introduction of low-growing species such as economical Highland bentgrass. Firestone Country Club, site of the All American Golf Classic, vertical-thinned its fairways, overseeding with Highland bent in the hope of having "something else" handy should the prevailing *Poa annua* find the going too rough during a muggy summer spell.

ABOUT SEED SPECS—The required label effectively covers familiar marketing standards such as germination—the ability of the seed to sprout—the importance of which is obvious. But other implications are less obvious. For example, what are the underlying inferences from the "purity" figures on the tag? A lower purity percentage might occasionally be a better buy (if the remaining percentage is merely inert). Even where purity is extremely high, a small unspecified residue can be hazardous if it includes live seeds of species that are *weeds* in fine turf. These don't necessarily have to be listed on the label (it varies with state law).

A couple of winters ago imported rough bluegrass (*Poa trivialis*) winterseeded to southern golf greens carried a bit of rosette crucifer seed, probably shepherd's-purse. Courses utilizing it had to lavish many man-hours of hand digging to eradicate the pockmarks (since herbicides could not be trusted on the delicate green grass). This was certainly

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an expensive seed purchase regardless of price.

Let's review some of the factors that make for a good seed buy. Price of seed by the pound is really the least important. Far more meaningful to a golf course are the "headaches" to be avoided by choosing seed wisely.

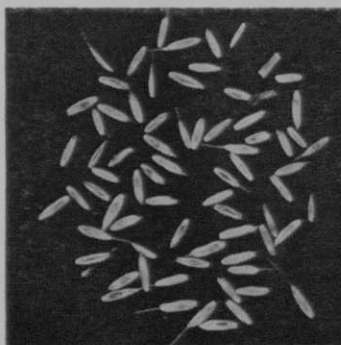
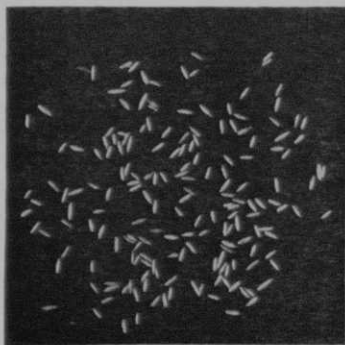
CHOICE OF SPECIES—I can't tell the superintendent what variety to choose. Proper genetics are his to assess, in the light of local conditions, experience and preference. Some managers prefer one variety, some another. So long as the proper environment is maintained for the chosen variety, its performance will be excellent. If anyone, the superintendent is capable of maintaining proper grass environment. It's his profession. For the green he will have many vegetative strains to choose from, each with its subtle peculiarities. Typical are such true-to-type vegetative varieties as Toronto, Cohansey, Washington, Congressional, Old Orchard, Arlington, Pennlu, Evansville and Nimisilla, listed in the order of their rating by Dr. J. B. Beard, Michigan State University.

A convenient, economical alternative is seeded creeping bentgrass such as Penn-cross. Reports indicate Penn-cross to have performed remarkably well all across the country, though its vigor does entail a bit more attention to avoid thatch. Seaside, an old favorite creeping bentgrass from seed, is considered more disease-susceptible than is Penn-cross. There is also a velvet bent, Kingstown, now available as seed; and of course the recog-

nized colonial bentgrasses (used mostly for fairways, but occasionally for bolstering greens), such as the work-horse Highland, and at higher prices Astoria and Exeter.

For fairways and tees a number of seeded bluegrasses and fine fescues are standard, often preferred in combination. Kentucky bluegrass has no equal as a rhizoming sod-former. Fine fescues such as Chewings, Illahee and Pennlawn are included especially for dry soil in the shade and for sandy outcrops not well fertilized. Mowed tall, as in the roughs, Kentucky bluegrass-fine fescue seedings endure indefinitely with little attention. Merion Kentucky bluegrass has been much used for tees. Its relatively low growth and dense foliage equip it well for this use. Non-premium varieties are usually used for the voluminous fairway seedings, natural Kentucky bluegrass or a combination of proven varieties that include Arboretum, Delta, Park, Newport.

Other than for winterseeding of greens, increasingly being done with northern "fine-textured" grasses (fine fescues, Kentucky bluegrasses, bentgrasses, various Poas), Southern golf turfs receive relatively less seeding. Improved Bermuda selections such as Tifdwarf and Tifgreen for the greens, Tifway for the fairways, must be vegetatively planted since they don't come true from seed. A good many golf courses do seed common Bermuda, and perhaps occasionally in the deep South bahia, carpet, centipede and zoysia. For discussion here, however, we must confine attention to species adapted to the northern two-thirds of the nation where seeding is usual.



Kentucky bluegrass, far left, is nearly 100% pure, with little inert, and no detectible, weeds or crop. Rye-grass, right, two stem fragments (inert), upper left, some smaller seeds could be fescue; if so, they are "crop" in ryegrass.

WHAT TO GUARD AGAINST—
Equally as important as what is wanted, is what is not. Here is a "rogue's gallery," of the grasses and weeds most pestiferous in turf, as determined by the Velsicol Chemical Co. survey and this writer's "The Lawn Book," Macmillan, 1961 (See Chart). Obviously, they vary widely with the climate and location and many others could be added to the list.

Of these turf rogues, any golf course superintendent realizes that many—almost all of the broadleaf sort—are controllable these days with herbicides. It's a different matter with many grass-type weeds, which should be guarded against more carefully as inclusion in purchased seed.

HOW TO IDENTIFY QUALITY—
A germination percentage is required by law on the seed label or tag; it is checked by official policing. The higher the germination, naturally the greater the value (by the same proportion). But it makes not a great deal of difference in getting a stand, whether the bluegrass you sow germinates say 80% or 90% (though the

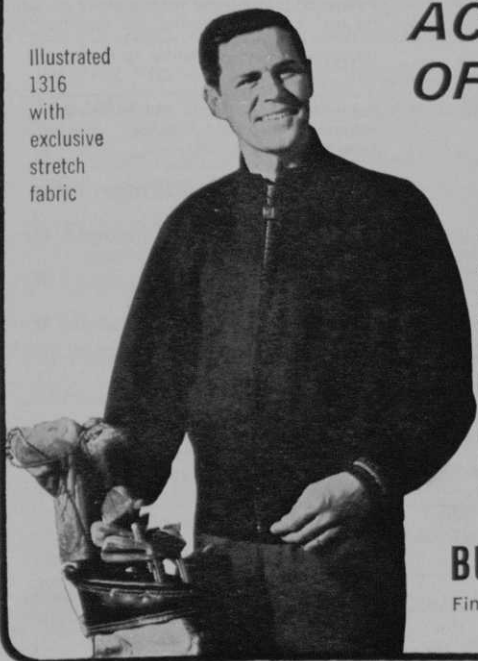
higher germinating seed should then receive at least a 10% price advantage). It is normal for germination to vary among species, and even between lots from one region and another. Except for a casual check to note value, one can pretty well take for granted adequacy of germination on seed reaching market through regular channels.

Purity is another common standard of sale. It signifies the weight of designated seed as a percentage of the total weight. The best lots of some seed types may run as high as 99% pure, the remaining 1% being a bit of dust or chaff termed "inert." With other seed 85% purity may be usual. Much depends upon the kind of seed, and even the year of harvest. There are instances where cleaning out the last bit of chaff would also eliminate good seed, and thus raise the price for no real benefit. But again, lesser purity should certainly be compensated for by proportionally lower price.

Varying according to state seed law, weed content must also be listed on the label. Some weeds especially pernicious

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in agriculture may be forbidden entirely. Others, less serious, must be grouped as "weeds" but don't have to be individually named. Naturally, for fine turf such as on the golf course, purchasing seed with any significant amount of troublesome weeds (those of Chart) is questionable. But it well may be that certain weeds bothersome on the farm are of no conse-

quence in mowed turf—things like *Galium*, dodder, etc. Nevertheless, it behooves a superintendent to specify essentially weed-free seed unless an analysis by a testing laboratory reveals exactly what the weeds are, and the superintendent sees that they are of no consequence.

So far, quality considerations are reasonably clear-cut. But there's a less obvious aspect worthy of checking on, too. This is the "crop" content. Most state seed laws allow up to 5% each of non-

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EPITOMIZED TURF WEED SURVEY

(in approximate order of recognized pestiferousness)

| Grasses And Other Monocotyledons | Comment |
|--|---|
| crabgrass, <i>Digitaria</i> | An annual, now controllable with herbicides. |
| annual bluegrass, <i>Poa annua</i> | Good golf turf except for seedheads and summer die-out risk; no good herbicide control. |
| goosegrass or silver crab, <i>Eleusine indica</i> | A tropical annual, favoring hot, compacted ground; moderately controllable with herbicides. |
| quackgrass, <i>Agropyron repens</i> | Tough, persistent perennial with deep rhizomes; noxious, no selective control. |
| dallisgrass and other <i>Paspalum</i> s | As bad as crabgrass in middle and southern latitudes; perennial, not easily controlled. |
| nimblewill, <i>Muhlenbergia schreberi</i> | An increasingly important perennial pest of the Midwest, fine-textured but patchy; herbicidal control erratic. |
| sandbur, <i>Cenchrus sp.</i> | Annual developing troublesome burs; herbicidal control moderately successful. |
| tall fescue, <i>Festuca arundinacea</i> | Perennial bunchgrass taking place of crabgrass as No. 1 pest in lawns; no selective control. |
| other "haygrasses" (orchardgrass, timothy, brome) | Perennial problems similar to tall fescue. |
| nutsedge, <i>Cyperus</i> | Perennial clumps of fast-growing, yellowish foliage from deep "bulbs"; no satisfactory selective control. |
| wild onion or garlic, <i>Allium sp.</i> | Problem similar to nutsedge, mostly middle latitudes. |
| (Others, less frequently listed as important, are: barleys, barnyard grass, foxtail, <i>Panicum</i> , redtop, smutgrass, stinkgrass, velvet- | grass, and occasionally bentgrass or bermuda when invading other type turf.) |
| Broadleaf Weeds, The Dicotyledons | |
| dandelion, <i>Taraxacum officinale</i> | Easily controlled. |
| plantain, broadleaf and buckhorn, <i>Plantago sp.</i> | Easily controlled. |
| knotweed, <i>Polygonum aviculare</i> | Controlled with newer herbicides. |
| chickweed, common, <i>Stellaria media</i> | Controllable selectively. |
| chickweed, mouse-ear, <i>Cerastium vulgatum</i> | Controllable selectively with persistence. |
| spurge, spotted, <i>Euphorbia maculata</i> | Controlled with newer herbicides. |
| speedwell, <i>Veronica</i> | Controllable selectively with persistence. |
| henbit, <i>Lamium amplexicaule</i> | Controllable selectively with persistence. |
| (Others frequently quite a nuisance are: black medic, clovers, docks, ground-ivy, hawkweed, mallow, mustards, (<i>Cruciferae</i>), | pennywort, puncture vine, purslane, sheep sorrel, shepherd's-purse and other cresses, wild carrot, wood sorrel and yarrow.) |