

Kentucky Bluegrass Still "Old Reliable" in North

By H. L. LANTZ

(GCSA address)

THERE are over 5000 species of grasses in the world and around fourteen hundred are found in the United States. The great group of grasses belong in one family, Graminae.

The root systems of grasses are always fibrous, and are excellent soil binders. The flowering stems are jointed, are usually round and hollow between the nodes. Stems may be erect, or with bent knee-like bases, or they may trail on the surface of the ground (stolons) and root at the nodes, or they may grow in the top few inches of soil (rhizomes).

The leaves of grasses are always parallel-veined and vary from very narrow to broad in width and from short to long.

The flower clusters of grasses are always made up of a number of subdivisions called spikelets which may be arranged in panicles, or two rowed spikes, or one sided spikes or racemes. The flowers of grasses are minute in size, are simple and very similar and are rarely used in classification.

Cool season grasses can be loosely defined as those grasses which are adapted to areas of the temperate, moderate rainfall areas of the midwest, northwest, east and northeast; a region which comprises the areas of Missouri on northward and as far west as those parts of Kansas, South and North Dakota which enjoy moderate precipitation, and eastward to the Alleghenies, the New England states and also Northward into the provinces of Canada.

No one of our commonly used turf grasses or any combination of turf grasses is equally well adapted to all parts of this great area. Rainfall, summer heat, winter cold, and the various soils all have definite influences on how grasses behave. Excessive summer heat and deficient moisture may be responsible for poor stands of grass or even the elimination of a grass that survives under more equitable temperatures and moisture.

If I were to ask golf course superintendents to select one grass that has for many years been one of our most reliable

cool season grasses, their vote would in all probability be for Kentucky bluegrass, *Poa pratensis*. Kentucky bluegrass is found in nearly all parts of America, but in no region is it more at home than on the fertile black loamy soils of the mid-west region. Here it has been the backbone of our turfgrass cover. As we go northward bluegrass becomes increasingly satisfactory as a turfgrass cover for lawns and fairways. The reason for this is due to a higher average of precipitation during July and August than is enjoyed further south and west.

Moisture In Bluegrass Control

This leads us to propose that moisture is the chief controlling factor and determines whether Kentucky bluegrass will make a tight, tough, and beautiful turf so much desired by those who wish good lawns and dependably good fairways. In Iowa and in the adjacent states, hot dry weather in July and August may prevail and result in browned-off grass. And a cease-growth period lasts until the first good rain in late summer or fall. Within a few days after a rain bluegrass greens up rapidly.

The tenaciousness with which bluegrass holds on to life can be well illustrated by the Midwest experience of 1953. The last appreciable rain fell about June 20. During the balance of the season there was no precipitation and there was no snow cover until the first week of March 1954. In April and May of 1954 acres of fairway turf appeared to be dead but with good precipitation until June 21 of 1954, the dead-appearing areas began to come to life. The bluegrass in some instances was thin but nevertheless here was further evidence of the great staying power of bluegrass.

In 1954, Iowa again experienced a dry hot period from June 21 to August 15. Again bluegrass all over the state went brown and off color. Abundant rains after August 15, and bluegrass produced a marvelous resumption of growth! Seldom have we seen handsomer lawns and fairways than prevailed in Iowa during late summer and on up to November 1. Another

demonstration of the marked role played by moisture. Infrequent, heavy watering on fairways and lawns will maintain good, strong, green bluegrass turf in Iowa throughout the season.

Disease: Kentucky bluegrass in Iowa has some infection nearly every year, of leaf spot (*Helminthosporium*). Seldom does leaf spot do extensive damage. Other diseases such as rust, curvularia, and brownpatch have not been a problem in bluegrass.

Weed Problem Diminishing

Weeds: Before the introduction of 2,4-D in 1945, dandelions, broadleaf plantain, and narrow leaf plantain were a real problem. Thanks to 2,4-D all turfgrass areas may be kept relatively free from the broadleaved weeds.

With crabgrass it is another story. Once established and permitted to seed, crabgrass becomes a serious competitor of bluegrass and does more to ruin good turf than any other weed. Progress in the control of crabgrass is being made. Phenyl mercuries have demonstrated value, as has potassium cyanate. Last year plots treated with Crag 1 were outstanding. These were

premerge treatments, and will be further investigated in 1955.

Fertilizers: There are fairways in Iowa which have had no fertilizer applications for 20 or more years, and are still producing excellent tight turf. Many fairways on thinner soils are greatly benefited by annual applications of 40 to 60 pounds of actual nitrogen per acre.

Management: Nothing is more important than skillful management. The informed superintendent will as a rule have soil tests run particularly on those fairways where the grass lacks vigor, is weedy and off color, and then will apply the needed plant food materials, and lime, to feed the grass and induce better growth. He will also in so far as is possible destroy weeds and thus make available to the grass the soil moisture and plant food materials required to grow weeds.

Compaction Problems

Aerification: Fairways are terrifically compacted. It is true that freezing and thawing have a beneficial effect on the soil during the winter. But during the wet spring and early summer months, grass



Louisville Courier-Journal photo

CADDY SUNDAY SCHOOL AT LOUISVILLE CC 9TH GREEN

Shown in session is the caddy Sunday School at the 9th green of the Louisville (Ky.) CC. It's the only one of its kind in the world. It began when the club's professional, Eddie Williams, a genuinely religious man, was bawling out a caddy for stealing balls, and Williams' friend, Rev. Edward Perry, pastor of the Broadway Baptist church heard the performance. After Williams and Rev. Perry had discussed the situation plans were made for holding Sunday School between the time the lads had been brought to the club by the club bus and before they started their caddy-ing rounds. At first Southern Baptist Theological Seminary students conducted the school. Then Bernie Alwes, a 38-year-old sign painter, an ex-caddy, born in the neighborhood from which many of the lads come, took over with Sunday School lessons based on his own experience and illustrated by chalk talks. That scored with the caddies and Alwes now is the regular teacher. Ora Spaid, religious editor of the Louisville Courier-Journal, recently wrote a highly interesting newspaper feature on the caddies' Sunday school.

requires mowing. Tractors and mowing equipment must run over the wet soil and compaction is inevitable. Aerification of fairways will alleviate compaction. There is need for extensive and intensive research to determine when and how often and under what conditions aerification will best improve soil tilth and encourage better growth.

Kentucky bluegrass will long be relied upon throughout the middle west for general turf purposes. Good management will do as much for bluegrass, as it does in maintaining golf greens. Botanists tell us that there are some 400 species of poa. Kentucky bluegrass, based on long years of experience, shows as the queen of them all.

New and Special Purpose Grasses

Based on our plot experiments at the Iowa Agricultural Experiment Station, and experiments of a similar nature which are being conducted in practically all the cool season grass areas of the United States, we have convincing evidence that turf research is on the threshold of discovering, or originating new and superior grasses, that may produce better turf for general or specialized use.

One advance appears to be Merion blue grass. The plots at Ames, part of which were established in 1949, and a larger plot area in 1952, demonstrate that Merion is superior to Kentucky bluegrass, as a lawn grass. There is every reason to believe that Merion will prove to be a superior turfgrass on fairways.

Merion in our plots required a year longer to develop into a good tight sod than is required by ordinary bluegrass. It tends to be dwarfish in growth and probably would require less frequent mowing than Kentucky bluegrass.

At no time has disease been a problem in any of the bluegrass plots at Ames. Helminthosporium can be found in most seasons, but apparently there has been no damage of consequence. Curvularia has never been serious. Rust on unclipped Merion was severe in 1954. Merion plots mowed at 1 in. have not been attacked by rust. Unclipped Kentucky blue and Arbotum adjacent to Merion were not attacked by rust.

Common creeping red fescue, Illahee and Pa. 74 in combination with the bluegrasses in sunny unirrigated plots have not been impressive. Our conclusion to date is that on Iowa's rich black loam soils, the red fescues are not likely to be valuable in a blue grass mixture except

in shaded or partially shaded areas.

Seeded alone in 1952 plots Pa. 74 suffered considerable winter kill during the dry open winter of 1953-54. When mixed with bluegrass, little or no winter damage to the fescues was apparent, but there is no evidence that the bluegrass and Merion plots were improved by seeding with the fescues.

Alta fescue alone and in bluegrass mixtures has been very impressive. During the hot dry summer and fall of 1953 the Alta plots remained green until November, a remarkable characteristic as contrasted with the bluegrass plots which browned off in August.

It is interesting and pertinent that the 1949 mixed plots of Alta and Kentucky bluegrass have remained green and succulent until November nearly every fall. These plots were seeded to equal parts by volume of bluegrass and Alta. The Alta has never been dominant but has been present and very noticeable because of its broad leaves. During 1954 it became apparent that Kentucky bluegrass was gradually becoming dominant in these plots. In fact in plots which were seeded to Alta


Forest Lake Country Club
 BLOOMFIELD TOWNSHIP, MICHIGAN
CARE AND MAINTENANCE OF THE GOLF COURSE
 By Members and Guests

The course is maintained in the best possible playing condition through regular maintenance by the Greens Superintendent and his staff. Housekeepers, all of us as players can help tremendously to maintain the course in good condition by observing these rules:

- REPAIR BALL MARKS ON GREEN**
Insert tee ball into pushed up turf and use level action to smooth out mark. Press down firmly after repair is made.
- REPLACE DIVOTS ON TEES, FAIRWAYS AND BOUNDS**
Remove as much displaced turf as possible and insert neatly into divot hole. Press down firmly after repair.
- SMOOTH CLUB MARKS AND FOOTPRINTS IN SAND TRAPS**
Use hand rake or golf club until area is smooth.
- KEEP COURSE CLEAN**
Place cans, paper cups, cigarette packages, etc. in waste containers.
- WALK CAREFULLY ON THE GREEN**
Do not scuff greens with spikes while walking or turning. Only use hand shoes are allowed on the course. Use bare cavity shoes go in cup, not on edge of hole, while preparing to putt.
- PICK UP WOODEN TEES AND LOOSE SPIKES**
Spikes cause serious damage to the mooret.
- WALK AROUND BUNKERS AND TRAPS**
Make the course in pleasant playing condition for others. NEVER walk out of the back of a sand trap—always leave by rear entrance.
- PRACTICE ONLY IN DESIGNATED AREAS**
Practice on the course is not allowed. Use the practice tee and fairway practice areas only. Do not practice putting on the green. Do not walk into areas practice putting green after finishing the 18th hole.
- TEE OFF BETWEEN MARKERS**
Ball must be placed between markers on tee not more than 2 club lengths behind markers. Be careful not to damage turf on previous teeing.
- BE CAREFUL WITH CADDY CARTS**
Do not put carts across green or through traps.

Members are requested to explain these rules to their guests and to see that caddies help observe them. This care will make your game (as well as others) more pleasurable.

GREENS COMMITTEE
FOREST LAKE COUNTRY CLUB

BE NICE TO THE COURSE

This is the educational sheet, measuring 8 1/2 in. by 11 in., that the Green committee of the Forest Lake CC (Detroit dist.) gives to its members and guests in telling them how to cooperate with the superintendent and his staff in keeping the course in good condition.

alone, blue grass has come in and is markedly assuming the aggressor's role.

Bents in Iowa

For a good many years Colonial bent has been used in the seed mixtures in Iowa; five to 10 percent. Colonial bent seems to have a place, but very often creeping bent has developed in sizeable areas where soil conditions are suited to creeping bent. I know of one golf course where the original seeding was bluegrass, but today creeping bent dominates the turf. The fairways are flat, partially shaded and probably enjoy the benefits of natural subirrigation.

We have been rather favorably impressed with Highland bent seeded alone in 1952. The plots are well filled and attractive, and do not seem to be injured by dry weather. In bluegrass mixtures, the general effect is satisfactory.

Under Iowa conditions it appears doubtful whether the creeping red fescues add anything to turfgrass that is to be grown in open sunny exposures. In shaded areas the fescues and the bent grasses are regarded as essential as is *Poa trivialis*. On eroded hilly areas, a generous fertilizer program is regarded as essential no matter what the grass cover may be.

At Ames we have a plot of common *Z. japonica*, a broadleafed strain that has withstood the winters for four years. The sod is dense, but the slow starting in the spring and the early "frost-off" are undesirable characteristics. Meyer, Z72 and Z73 will require at least three seasons to fill out these plots. Judged by our experience with the zoysia grasses in our experimental plots, it is our opinion that the zoysias will not be popular. A hardy zoysia that will green up a month earlier, and be less easily frosted off in the fall is needed if zoysia is to succeed in lawns and on fairways and tees in Iowa.

Since 1939 more than 30 strains of bent grasses have been grown in replicated plot tests at Ames. These bent grasses were in part, C1, C7, C15, C17, C19, C27, C32, C50, C51, C52, C114, C115, ten strains from Pennsylvania, and local acquisitions, also Polycross from Pennsylvania.

These plots were stolonized and are mowed at 3/16 in. and maintained as would be a golf green.

Those strains which have been hardy, fine grained, and desirable as close clipped bent grasses include C1 Arlington, C19 Congressional, C27 Collins, C52 Old Orchard.

Of these, Arlington, Congressional and

Old Orchard have been the choice of Superintendents in Iowa for the past five or more years. I know of no one in Iowa who has built a golf course in recent years who selected either Washington or Metropolitan for greens.

Our plots of Polycross bent are too new to comment on, except to state that the color is a dark rich green, the leaves are narrow and show evidence of making a green of fine grained appearance.

Bluegrass will for many years be the most used turf grass throughout the great areas from New England to the Pacific coast in that region commonly defined as the cool season grass area. This area extends far northward into Canada. Merion is becoming better established as a worthwhile grass every year. The evidence is that Merion will not be entirely satisfactory as far south as is Kentucky bluegrass. Seed supplies of Merion are still too limited and too expensive for widespread use. Seed supplies of Merion are, however, increasing every year.

It is recognized that the fescues have a place in building turf under special conditions and for special uses. On the fertile black loams of the middle west it is a question whether the creeping red fescues add anything to turf for the open areas on lawns and fairways. There is no question of their value in shady areas.

In bent grasses, Arlington and Congressional bents are dependable, and mixtures of the two are performing exceedingly well. Old Orchard is the choice of many superintendents and has a wide range of adaptation.

There is no such thing as "best" so far as bent grass strains are concerned. Many local factors of soil, drainage, and management enter the picture and for this reason certain strains may be favored in local areas. For example C15 Toronto and C7 Cohansey are performing exceedingly well in states other than Iowa. Neither have been satisfactory in our test plots. Seeded greens in many locations have been satisfactory. The Polycross contribution of the Pennsylvania station gives new hope that superior seed is going to be available, and thus perhaps simplify and lower the cost of greens establishment.

Better grasses are needed. Grass breeders have a field that is wide open.

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