

TURF GRASSES

There are several more or less distinct regions favorable for certain grasses. The northern limits of the region in which Bermuda grass is the most extensively used fairway grass is, roughly, an imaginary line running from Washington, D. C., to Asheville, N. C., north through Kentucky to St. Louis, Mo., thence through the southeastern corner of Kansas, through the southeastern portion of Oklahoma, across the northern portion of Texas, and through the center of New Mexico and Arizona. The Bermuda grass belt includes most of southern California and the interior valley of the northern portion of the State. North of this line lies the section in which Kentucky bluegrass gains the ascendancy. All along this line there are sections projecting for great distances from one territory into the other in which either Bermuda grass or Kentucky bluegrass encroaches. The line is also broad, since Kentucky bluegrass and Bermuda grass grow side by side over a range of sometimes a hundred miles in width. The southern limit of the Kentucky bluegrass territory is roughly the southern limit of the bents and fescues. Redtop and clover will thrive much farther south.

Throughout Florida and over an area extending up the eastern coastal plain to North Carolina, and from Florida west along the Gulf as far as Texas, lies the region in which carpet grass can be used. Throughout certain sections of New Jersey, the New England States, and the maritime provinces of Canada, Rhode Island bent frequently gives excellent results. In certain sections of the Northern States and in Canada some beautiful fescue fairways are found, but at the same time these Rhode Island bent and fescue sections will grow excellent Kentucky bluegrass.

Redtop may be mixed with bent for seeding putting greens. Redtop seed has been and still is very much cheaper than bent seed. Redtop germinates very quickly and produces a vigorous seedling which is of a very fine texture and practically identical with bent the first season. Redtop becomes coarser during the second growing season, but on putting greens it will not stand the continued close cutting and dies out before its coarseness has become objectionable. Bent will stand close cutting and, due to its tendency to spread and form a dense turf, will soon replace redtop. Redtop is used with bent on either putting greens or fairways for the purpose of economy, but with Kentucky bluegrass it is used for a dual reason. Redtop is usually more economical than bluegrass and will last several years in the fairway. On fairways redtop forms a good turf while it lasts; and as fairways are not cut as close as putting greens, in some sections it will remain for many years when mixed with other grasses.

Kentucky bluegrass requires about twice as long as redtop to germinate and it is seldom recommended for planting alone since it is not aggressive in the seedling stage. When sown with redtop the latter acts as a nurse crop until the second year. When the bluegrass has formed a substantial root system it will usually crowd out the redtop, due to its habit of spreading by rootstocks. Kentucky bluegrass is rather coarse for use as a turf on putting greens; still there are some clubs, where the soil is especially adapted to bluegrass, that have managed to keep it fine by frequent cutting, top-dressing, and fertilizing, so that it makes a fair putting surface.

There are several fescues that are used on golf courses. Chewings' fescue seed is produced in New Zealand and is easily obtainable. It is also notably pure. Genuine or creeping red fescue forms a more desirable turf than Chewings' fescue, due to its habit of spreading by slender creeping rootstalks. One should, however, be careful in purchasing red fescue seed since it is liable to contain much sheep's fescue seed and noxious weed seeds. Sheep's fescue is much coarser and more inclined to bunch than red fescue or Chewings' fescue, and its only use on golf courses is for the rough or on mounds and bunkers.

Several different kinds of bent are commonly used for seeding putting greens in the North. South German mixed bent contains a large percentage of Rhode Island or Colonial bent, a fair percentage of velvet bent, some creeping bent, and some redtop. Rhode Island bent is similar to Colonial bent. They are not creeping bents, but both make fine putting turf. Velvet bent is the finest in texture of the bent grasses. It produces an exceedingly fine, close-knit turf and is creeping in habit. Very little pure velvet bent seed is on the market, but velvet bent may be planted with stolons in the same manner as creeping bent, as will be described later.

Creeping bent has many different strains, and since some of these have a decided grain or are comparatively coarse for putting green purposes they are commonly established by planting with stolons rather than with seed.

Bermuda grass is used both on putting greens and fairways in the South. It is creeping in habit and vigorous in growth. Local strains usually make good fairways, but the finest possible strains should be chosen for the putting greens.

In purchasing seed of Bermuda grass it is well to get Arizona grown seed, since the Bermuda grown in that State is composed of strains which produce a comparatively fine turf. On very light sandy fairways it is often difficult to produce Bermuda turf from seed, unless water can be supplied plentifully. The young seedlings dry up in hot dry weather, since they are only rooted in the surface and have not a sufficient root system to procure moisture from deeper in the soil. In such cases old Bermuda sod can be torn apart and the runners or stolons planted in plow furrows, the furrows being 3 to 4 inches deep. The planters follow the plow, dropping stolons in the bottom of the trench, the stolons being covered as the next furrow is plowed.

Except in the southern part of Florida, Bermuda grass will turn brown and become dormant after the first frost, and it does not readily recover until the spring. On fairways where play is not so concentrated, the dead turf lasts fairly well during the winter and is helped out considerably with Japan clover and various winter weeds which appear at this season. However, the putting greens must be replanted to other grasses to form a winter turf. The old Bermuda turf should be skinned off to the surface soil, and the green top-dressed and seeded to Italian rye grass. Redtop, Kentucky bluegrass and fescue either alone or mixed, are also used for winter turf in the South, but both Kentucky bluegrass and fescue are rather too slow to germinate and to develop a turf, and redtop is subject to brown-patch injury in Florida. Mixtures of these grasses are frequently used, but it is doubtful if they have any advantage over the pure Italian rye grass, which is quick to germinate and forms a good turf in the seedling stage.

Carpet grass makes a tougher and better looking winter turf than Bermuda; it also keeps out weeds, particularly sand spur, which in time tends to ruin Bermuda turf. But even in its native regions carpet grass will not thrive on the variety of soils and locations that Bermuda will. Also it is very slow-growing and requires a nurse crop the first year. Consequently it is well to sow a mixture of Bermuda and carpet grass. If the location is suitable the carpet grass will crowd out the Bermuda grass after several years.

The accompanying rates-of-seeding table is intended for ready reference. It should be understood that in most cases the rates of seeding are quite flexible. Experience, however, seems to indicate that the rates suggested in the table are safe and economical to follow.

RATES OF SEEDING FINE TURF GRASSES

	PUTTING GREENS	FAIRWAYS	ROUGH, MOUNDS, BACKS OF BUNKERS	WINTER GREENS	LAWNS
	Per 1,000 sq. ft.	Per acre	Per acre	Per 1,000 sq. ft.	Per 1,000 sq. ft.
	Pounds	Pounds	Pounds	Pounds	Pounds
All bents (for economy, 2 parts* redtop, 3 parts bent).....	3- 5	.....	.....	..	3
Redtop	3- 5	.....	.....	5	3
Kentucky bluegrass	12-15	175-200	.....	15	10
Rough-stalked bluegrass (<i>Poa trivialis</i>)	12-15	.....	.....	..	10
Red fescue	10-15	175-200	.....	..	8
Chewings' fescue	10-15	175-200	.....	..	8
Sheep's fescue .....	.....	.....	40-60	..	..
Italian rye grass.....	.....	.....	.....	15	..
Annual bluegrass (<i>Poa annua</i>)..	12-15	.....	.....	..	..
Dutch or white clover.....	.....	.....	.....	..	2-3
Bermuda grass	5- 7	50- 75	.....	..	4-5
Carpet grass .....	.....	50- 75	.....	..	4-5
One part redtop, 4 parts Kentucky bluegrass	8-10	125-150	.....	..	5-7
One part South German bent, 4 parts Chewings' fescue or red fescue .....	.....	125-150	.....	..	..
One part redtop, 4 parts Chewings' fescue or red fescue.....	.....	125-150	.....	..	5-7
One part redtop, 4 parts rough-stalked bluegrass	10	.....	.....	..	5-7
One part redtop, 1 part Kentucky bluegrass, 1 part meadow fescue .....	.....	130-160	.....	..	..
One part Bermuda grass, 1 part carpet grass .....	.....	50- 75	.....	..	4-5
One part redtop, 4 parts Italian rye grass .....	.....	.....	.....	10	..
One part redtop, 2 parts Italian rye grass, 2 parts Kentucky bluegrass .....	.....	.....	.....	10	..
One part Canada bluegrass, 1 part sheep's fescue .....	.....	.....	50-60	..	..
One part sweet vernal grass, 1 part Canada bluegrass, 1 part sheep's fescue .....	.....	.....	40-50	..	..
Vegetative planting. Creeping bent or velvet bent.....	.....	.....	.....	.....	.....

One square foot of nursery turf will plant 10 square feet of putting surface.

* By "parts" are meant parts by weight.