

Clean Seeds and Fewer Weeds

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Editor's Note:

Considering the original cost of grass seed, the expense involved in seeding a golf course, and the possibility of infesting turf with obnoxious weeds, quality in seed sown is of tremendous importance. Mrs. Pattison is one of the outstanding authorities on seed analysis in the United States.

AGROSTIS of all the genera in the grass family is the most important to the person interested in golf. Much has been written regarding this interesting genus, both in America and Europe in order to clear away the uncertainties that exist.

The most helpful and enlightening work has been done by three scientists of the U. S. Department of Agriculture, Prof. A. S. Hitchcock, Systematic Agrostologist, the late Dr. C. V. Piper, Agrostologist in charge of Forage Crop Investigations, and Prof. F. H. Hillman, Associate Botanist, Seed Laboratory. It is to Prof. Hillman that we owe our present knowledge of the seed characteristics.

Of all the species of Agrostis, Redtop is the most valuable agriculturally. It is known botanically as *Agrostis alba*, and its other common name is Herd's grass. Besides its use as a turf grass it is widely used as a meadowgrass, but it will be discussed here only in its relationship to turf. Redtop is a perennial and is a much larger plant than any in the bent group which will be discussed later. It is not indigenous to North America but was introduced from Europe. It thrives best on acid soil. The principal seed producing area is Southern Illinois. Two hundred cars, or 6,000,000 pounds of seed is considered a normal crop. Wholesale prices during the last ten years have ranged from 10 cents to 35 cents per pound for re-cleaned seed.

Virgin is the name given to the rough seed. This seed after reconditioning is marketed as Fancy Redtop, which means re-cleaned seed minus its outer glume; unhulled Redtop, the seed with the outer glume adhering, and chaff Redtop, which is practically free of any seed.

There is no call for unhulled and chaff from Golf Clubs. These by-products are often used as fillers in the cheap lawngrass mixtures.

Identification of Redtop Plants

The standard commercial grade of Fancy Redtop seed tests 90 per cent pure and 90 per cent germination, but, higher testing qualities are generally demanded by those wanting the best turf results. The highest grade now

offered tests 98 per cent pure. But technical purity isn't the only thing that should be considered. It is better to have 96 per cent with practically no weed seed content than to have 98 per cent with 1 per cent weeds. Seed containing 1 per cent weeds may mean sowing 50,000 weed seeds with every pound of seed.

The plant at maturity is from one to four feet tall, with rootstocks, flat blades and an erect often reddish panicle from four to eight inches long with verticillate lower branches. As previously stated, it is a much coarser plant than any of the Bents. It is better suited to fairways than to greens.

Seeding Mixtures

When the seeding of greens with pure Bent is too expensive for a club, economy can be practised by seeding two pounds of Redtop seed and three pounds of Bent per thousand square feet. Any mixture containing a

larger amount of Redtop will not give a satisfactory putting surface because of too many Redtop plants. Redtop when used for fairways is usually mixed with Kentucky Bluegrass and Red Fescue. The late Dr. Piper advocated a mixture of four pounds Kentucky Bluegrass and one pound of re-cleaned Redtop, using 150 pounds of seed per acre. Very excellent results have been obtained in the Metropolitan section by using the following formula:

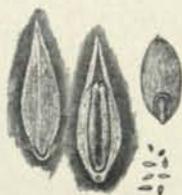
40% Kentucky Bluegrass	(24 lbs. 85%)
25% Fancy Redtop	(95%)
20% Red Fescue	(95%)
15% South German	
Mixed Bent	(90%)

The best seeding time in northern states is between August 15th and September 15th. The amount of seed used is 150 pounds to the acre.

Time will not be taken here to discuss seedbed preparation and sowing. These will be discussed in the final chapters after we have finished with all the groups.

There was a time not so long ago when unhulled Redtop was generally sold for Rhode Island Bent, and this practice could not be stopped until Professor Hillman made it possible to identify the seeds of the various genera. Too much credit cannot be given Professor Hillman for this valuable and useful contribution.

Even though the seed characteristics are well known it takes the most skillful of analysts to make perfect determination. A great deal of harm is yet being done by improperly trained analysts who are attempting analy-



**AGROSTIS AL-
BA (Redtop)**

*Drawing made by
and published
through the cour-
tesy of Professor
F. H. Hillman, As-
sociate Botanist
U. S. Department
of Agriculture*

sis of Bent and Bent mixtures. Present space does not permit a recital of golf tragedies that are the result of these faulty analyses. In our chapter on Bent, a few cases will be given.

For the benefit of those who wish to study the seed characteristics we are giving them.

Description of Redtop Seed

The seed of *Agrostis alba* (Redtop) is larger than the seed of any of the Bents. The lemma is yellowish, thick and glazed. The prickles near the apex are not more than one-quarter the distance from the apex. The apex is pointed, the base hairs long and fairly spreading, the palea is broad and two-veined. The adherent type of palea is generally wrinkled. The palea tip is not rounded. The prevailing condition of the palea tip is truncate or broadly notched. The hilum is usually long, slender and dark, linear, not wedge-shaped and elevated. While the seeds of Redtop are sometimes awned, the awn is very rarely below the middle and very rarely long or twisted.

Weed Seeds Commonly Found in Redtop

Achillea millefolium
Potentilla monspeliensis
Cerastium vulgatum
Plantago rugelii
Juncus tenuis
Anthemis cotula
Rudbeckia hirta
Panicum lanuginosum
Eleocharis obtusa
Silene antirrhina
Rumex acetosella
Chrysanthemum leucanthemum
Panicularia nervata
Agrostis elliottiana
Scripus sp.
Plantago major
 Yarrow
 Cinquefoil
 Mouse-ear chickweed
 Blackseeded plantain
 Slender rush
 Mayweed
 Browneyed Susan
 Hairy panicum
 Blunt spike rush
 Sleepy catchfly
 Sorrel
 Oxeye daisy
 Nerved manna grass
 Plantain

The presence of certain of the above weeds in a sample of *Agrostis* indicates American Redtop.

The next article will be devoted to *Agrostis Vulgaris*—Rhode Island Bent.

GREENKEEPER'S ALMANAC

MARCH

By JOHN MACGREGOR
Chicago Golf Club

THERE may be some painting to be done yet, tee boxes, benches, buildings.

* * *

It is not wise to do much tree pruning now, as the sap has started to flow on some trees, but dead wood can still be cleaned out.

* * *

Burn the rough, and kill innumerable weed seeds, and make the rough a pleasure to cut. It is hard to cut dead grass, and you will find the grass has a healthy hue after burning.

* * *

If fertilizing is to be done, do it before the frost leaves the surface, as this eliminates unsightly ruts caused by machinery and the early rains will carry the fertilizer to the roots.

* * *

See that the compost is in shape for the first top-dressing. In some states top-dressing and watering never ceases.

* * *

You will have bought your new equipment at the Golf Show, so that you will be "rarin'" to go at the first sign of spring.

* * *

If the regular greens are kept open all winter, be careful to keep players off the greens for a week or more until the frost is out, as much damage can be done at this time.



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