

the purity (per cent. of seed named in relation to total weight) by the germination (per cent. of seed named which will grow) the product is a figure somewhat much more useful than either number alone.

Suppose there are two samples of Kentucky bluegrass to choose from; the first is 80 per cent. pure and germinates 70 per cent., and the other is 90 per cent. pure and germinates 60 per cent., and both are priced the same. Which is the better one to purchase? The product is 56 per cent. for the former and 54 per cent. for the latter, making the former slightly the better buy unless the weed seed content is greater.

Assume that the 56 per cent. sample was priced at 24 cents and the 54 per cent. one at 20 cents a pound. Which one is the cheaper? By dividing 24 by 56 one gets 43 cents a pound for the pure seed that will grow in the first case and the 20 divided by 54 equals 37 cents, the real price of the seed in the second. Obviously the latter seed is the better one to purchase.

The arithmetic may seem cumbersome but it offers a way to decide a somewhat difficult choice at times. This is another reason why it is much the safest policy to purchase the seeds as individual kinds rather than the fancy-sounding branded mixtures. The State laws seldom compel the seedsman to state the proportions of a mixture and there continues to be a practice of substituting a large percentage of temporary grass for the more expensive permanent grass seed in these mixtures. If a mixture of 95 per cent. Kentucky bluegrass and 5 per cent. colonial bent is desired, then buy the seeds separately and mix them or have the seedsman do it for you.

VACUUM MACHINE FOR HARVESTING BUFFALO GRASS SEED

WESTERN CLUBS where Buffalo grass is used on fairways and lawns will be interested in a report of improved methods of harvesting the seed. The seed of this grass has been difficult to obtain and is in great demand for the planting of abandoned wheat land as a means of controlling erosion by wind and rain.

Buffalo grass has demonstrated resistance to sun and wind and the ability to make a quick comeback when conditions are favorable. Buffalo grass leads the list of grasses which can best be used to regrass this idle and eroding land. It is also the best grass for lawns and fairways in the Great Plains territory where it is adapted.

The seed is found only on female plants and grows close to the ground among the curly leaves. Harvesting with grass seed strippers, or by cutting and threshing later, as is done with other grasses, is out of the question in the case of Buffalo grass.

SEASONAL REMINDERS

Fall Fertilizing: August is the month to make plans for fall fertilizing programs. Orders for fertilizer should be placed in sufficient time to have the material delivered ready for distribution in early September. Kentucky bluegrass and the other permanent turf grasses grow vigorously during the fall months if they are provided with ample food and moisture. Some clubs are able to supply both the food and moisture for fairway turf but most clubs are still dependent on nature for fairway irrigation. The drought this summer has done much damage to turf and if it is possible to purchase fertilizer it should be applied early in September so as to take full advantage of the fall rains. Expenditures for fertilizer this season will prove to be money well spent on practically any course.

Fertilizers should be purchased primarily on the basis of their plant food content. Fortunately for golf clubs, the day is rapidly passing when fertilizers are purchased without regard to the analysis. It should be remembered that all experimental work to date on turf has shown that nitrogen is the most important plant food to be considered in the purchase of fertilizers.

Nurse grasses are usually much less of a benefit in late summer than in spring plantings; in fact, it is highly doubtful whether ryegrass and redtop are desirable in a fairway mixture for August and early September planting.

The best test of what the mixture should contain is to find out what kinds of permanent grass the fairway contains now. If it is impossible to identify the grasses personally, someone who can do this should be found. Samples of the various grasses will be identified by the Green Section. Kentucky bluegrass is usually the major grass in the North except in New England and New York. Fescue also may be found and, if so, it should be included. A small proportion of colonial bent has been found to be beneficial in practically all northern fairway mixtures, and in New England it is the mainstay.

A fairway mixture that is widely adapted is Kentucky bluegrass from 90 to 95 per cent., and colonial bent from 10 to 5 per cent. A good mixture is Kentucky bluegrass 75 per cent., Chewings fescue 20 per cent., and colonial bent 5 per cent.

Dry knolls difficult to cover with grass should be spiked or disked in order to prevent the seed from being washed or blown away and to provide better conditions for germination. Although the spiking is by no means a perfect method, it is helpful in placing the seeds where they would be expected to find moisture and where they will not easily be washed away. A seeder similar to the grain drill but with less space between disks would probably give the best results.

A new suction machine built like a powerful vacuum sweeper has been developed by the Kansas State College and the Experiment Station at Hays. It has collected as high as 95 per cent. of the seed, or an average collection of about 64 per cent.

The collecting nozzle in the most successful models is about 6 feet long and 4 inches wide. A light chain dragging ahead of the nozzle loosens the seed from the stems or from the dirt where it may be slightly imbedded. Best results are obtained when the grass is closely clipped before the seed is collected. The most seed can be collected in the late summer or fall.

Buffalo grass also may be propagated vegetatively by scattering pieces of sod. The method of propagating Buffalo grass by this latter method is described in The Bulletin of the United States Golf Association Green Section, Vol. 13, p. 144.

In most golf course formulas, therefore, the nitrogen component should lead by a big margin. Phosphoric acid and potash, which are of great importance in many agricultural crops, are of less relative importance in golf turf fertilization.

Soil Samples: August is a good month in which to sample soils for testing as an aid in deciding upon the best fertilizer programs. If laboratory tests have not been made recently it would be well to have some made before deciding on the fall fertilizing program. The Green Section will be glad to make such tests for any club that is a member of the United States Golf Association. Samples should be collected and shipped as directed elsewhere in this publication. Examinations will be made as promptly as possible, and as complete reports and recommendations as are justified from the samples will be submitted to the club. We promise no elaborate tests nor exaggerated deductions.

Use of Lime: This is the best season to determine the need for lime in turf. Laboratory tests will serve as a useful guide in determining whether soil is ex-

cessively acid. There are, however, several distinct symptoms of excessive acidity which should be used in determining the need for lime. Some soils with a neutral or alkaline reaction may need lime. On the other hand, an application of lime to soils that are distinctly acid might simply prove to be another means of wasting money. In this connection, it would be well to read the discussion of soil acidity in The Bulletin of the United States Golf Association Green Section, Vol. 12, pp. 190-195.

Filling Low Pockets: At this season when there is much repairing to be done on greens it is well to be on the lookout for low pockets where water collects. Where grass has been killed in low places it should not be replaced with fresh sod until the depression has been filled with soil or other provisions made for adequate surface drainage. It is surprising how often this apparently obvious precaution is neglected.

Improving Soil in Putting Greens: After the heavy summer play is over and before the fall growing season arrives is a good time to remove sod from greens and do the necessary remodeling and soil improvement work that is necessary to reduce the turf injuries that have resulted from poor construction methods. Grass will recover quickly in early fall and a true surface can be obtained quickly by heavy top-dressings. If such work is contemplated it would be well to refer to the discussion of this subject in The Bulletin of the United States Golf Association Green Section, Vol. 9, pp. 142-151.

New Seeding: August is the month to get areas graded and prepared for new seeding so that the seed may be planted late in August or early in September, according to the latitude. In the northern states August plantings usually give best results.

Algae in Turf: Algae are minute green plants that grow to form a scum on turf that has been injured by disease or other causes wherever there is sufficient moisture. Scums of algae have not been as troublesome this year as in wet seasons. However, in low, heavily watered areas they are always troublesome. Thick growths should be raked with an iron rake or spiked to break up the scum. The affected areas should then be treated with corrosive sublimate and top-dressed.

Weeds in Soil Beds and Compost Piles: At this season some of the most troublesome putting green weeds are beginning to produce their seed. Therefore it is particularly important to check up on the compost piles and soil beds to make sure none of these weeds are going to seed there. This job is too often neglected on golf courses due to the rush of what is considered as more important work. Remember that a few hours spent this year in destroying weeds on and near the compost pile and soil bed may save dozens of hours' work next year in weeding putting greens.

Controlling Grubs: Grubs of May or June beetles, Japanese beetles and oriental beetles wherever they are numerous are now causing injuries to grass. Grub injury appears first as a wilting of the grass in irregular areas. The turf becomes loose as a rug and may be easily lifted from the ground since the roots are cut just below the surface. The grass dies and turns brown. Treatments to check these grubs should be made as soon as possible. Arsenate of lead applied at the rate of 5 pounds to 1,000 square feet is the most effective remedy for grubs. On some soils, particularly of a heavy clay nature, heavier rates of 10 or even 20 pounds to 1,000 square feet are needed to accomplish complete control.