

of this immature seed can be eliminated in the recleaning. Most of the seed is recleaned after it comes from the thresher.

According to the best information I have been able to obtain without exhaustive inquiry, the best seed-producing sections are eastern Louisiana, western Mississippi, and such portions of the Gulf Coast states as have a loam soil of moderate fertility.

QUESTIONS AND ANSWERS

All questions sent to the Green Section will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Section.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

Effect of close cutting on bluegrass; controlling clover in fairways. Our fairways and tees were planted in late fall four years ago. The fairways were seeded with a mixture of 4 parts of Kentucky bluegrass and 1 part of recleaned redtop, at the rate of 150 pounds to the acre. The tees were seeded with the same mixture at the rate of 200 pounds to the acre. The soil of neither the fairways nor the tees was fertilized sufficiently to insure vigorous growth. The soil is naturally an alkaline clay which packs and bakes readily during summer. The grass on our tees burns out after the first spell of intensely hot weather in spite of the fact that they have been continuously top-dressed since being constructed. The tees have been cut usually not more often than twice a week and never shorter than $\frac{1}{2}$ inch. It is argued that more frequent and shorter cutting of the tees would make the grass stool out and become stronger and thus better able to withstand drought and heat, while on the other hand it is argued also that more frequent and closer cutting of fairways and tees is liable to make the grass turn yellow and burn out during dry, hot spells, on account of both the shortness of the blades and the tendency of the soil to pack more readily with short turf. What is your opinion on this point? Also give us your opinion on the effect of close cutting on the clover with which our fairways are infested. The clover seems to be more prevalent than previously in spite of the fact that everything possible has been done to encourage the growth of the bluegrass. The fairways are cut twice and sometimes three times a week, never much shorter than $\frac{3}{4}$ inch. It is argued that it would benefit the bluegrass if the fairways were cut shorter and more often, since the clover blossoms and leaves would thereby be removed to greater extent, thus permitting the bluegrass to have more sunshine and air. (Pennsylvania)

ANSWER.—The argument that grass stools and becomes stronger and healthier under close cutting so that it can better withstand drought and heat is correct if one is comparing a hay field or deep rough with a pasture or fairway but it does not hold if one is com-

paring a low cut with a high cut when there is a difference of only an inch or two between the cuts. To a certain extent grass will stool and form a turf more quickly when cut. This can be noticed after the first cutting of new fairways. The tendency to form turf under such conditions is due to the fact that the plants are prevented from making large leaf growth and even from going to seed, and hence, instead of supporting so much leaf growth the plants tend to produce stolons or make lateral growth. However, when once there have been many new plants established, even though the turf may be thick it is not as strong under close cutting as a turf that is not severely pruned. The leaf of a plant, when having free access to light and air, performs a function in some respects similar to digestion in an animal. Pruning of the leaf impairs the digestion and weakens the plant. Therefore we would recommend that you cut both your fairways and tees frequently but that the length of the grass be kept as great as the players will permit. It is better to cut frequently than to allow grass to grow too high and then to cut it comparatively short. Frequent cuttings of grass kept reasonably long simply snip off the ends of the leaf blades and do little injury to the plants.

Clover can better withstand short cutting during warm weather than can bluegrass, and we would recommend that you do not try to eliminate clover in that way. On the other hand, if you could let the bluegrass grow long enough it would smother out the clover. This can be observed on many golf courses, where one has only to step on the rough from the fairway to notice that the clover stops at the edge of the rough and that the bluegrass becomes solid and dense in the rough where it is allowed to grow much longer. Continued early fall fertilizing with fertilizers comparatively high in nitrogen, and an early spring fertilizing with soluble nitrogen, such as in sulphate of ammonia, will do much to enable bluegrass to crowd out clover. When clover is becoming established it also may be practical to burn large areas of it by a heavy sprinkling with sulphate of ammonia applied directly to the clover, followed immediately by top-dressing the area. In this way the clover is temporarily set back while the nitrogen applied in the sulphate of ammonia helps to encourage the grass to fill in the thin areas where the clover has been checked.

Rate of seeding bent grass.—You have recommended a rate of 5 pounds to 1,000 square feet for seeding putting greens with German mixed bent seed. Why is it that frequently seeding rates as high as 15 pounds to 1,000 square feet are recommended by those who have had experience? (New Jersey)

ANSWER.—Three pounds of bent seed of good quality sown on 1,000 square feet will give a good stand of grass. We consider therefore that 5 pounds of bent seed of standard quality is ample for 1,000 square feet and that any heavier rates of seeding represent merely a waste of money. If the seedsman provides a good grade of bent it should be possible to get a good stand with this rate but if he furnishes a very poor grade largely composed of chaff it is possible that it would take 15 pounds to give a good stand. However, the big majority of seedsmen are handling well cleaned seed and we think you are perfectly safe in using the 5-pound rate.



Eighteenth hole (425 yards), Pine Valley Golf Club, Clementon, N. J.



We may only work in conjunction with Nature; none may war against her successfully; and the wise man is he who judges if Nature's opposition to his desire is real or only apparent; if it is real he abandons the battle.

George Moore

