



Seed must be evenly distributed. Dragging after seeding helps accomplish this and helps establish good seed-soil contact.

Overseeding, 1971, to Transition, 1972

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July and August—months of continual “alert” and “combat” for the Northern golf course superintendent—are the months of planning and preparation for his Southern counterpart. Fall overseeding lies just ahead for the Southern superintendent, and the quality of next winter’s golfing turf depends largely on how successful the overseeding program goes this fall. Overseeding warm season grasses for winter color has been practiced since the early 1900s, but it is still a much-discussed topic which lends itself to very few certainties.

Extensive studies by O. J. Noer, C. Wilson, and J. Latham in the early 1960s yielded much useful information and particularly advanced the use of *Poa trivialis*. Other studies have been conducted at various experiment stations,

but results vary from year to year and no panacea has evolved for our overseeding problems.

One of the many unsolved problems is the exact time to establish the winter grass. It occurs to a serious student of this operation that perhaps soil temperatures may be used to ascertain the appropriate date much as they are for field crops. A new seedling is largely influenced by temperatures in the microclimate and may grow rapidly while temperatures one inch above or below are adverse. By the time the plant parts grow beyond the microclimate, the chances are the air temperature will have changed considerably. The optimum seeding date would therefore seem to be more related to soil temperature than air temperatures.

Damping off a problem? New overseedings are always in danger of disease because of the susceptibility of these tender shoots and because temperature and humidity are ideal for disease about the time of planting. Since we can't control the climate, appropriate fungicides must be used to control the disease. Captan has proven to be effective against many turf diseases and has the advantages of being economical as well as gentle on the new seedlings. Certainly there are other fungicides as effective or possibly more effective than Captan, and most superintendents will recognize the need for specific fungicides to combat specific diseases. The important thing is simply to recognize the need for and the value of a good preventive fungicide program.

Which Grass Is Best?

Each year prior to overseeding there is a great deal of discussion about which grasses to use. The mixtures used are almost as numerous as the golf courses that overseed because there are unlimited combinations possible. Each turf species or variety has its own characteristic color, texture, resistance to disease, plus other special attributes or deficiencies. Varieties are used singly or in combination to give the performance and special effect desired.

The ryegrasses have long been the king in the field of overseeding, and new varieties promise to keep them in this position for a long time. These grasses give fast germination because of seed size and have good color and density according to the rate seeded. New varieties such as Manhattan, Pelo, NK 100, and some varieties from Pennsylvania State University now under test, are darker green, more heat tolerant, more disease resistant, finer textured and seem to go through the transition period better.

Creeping red fescues are desirable in mixtures because they add stiffness of blade to the putting surface, which is a characteristic that adds speed and trueness to the green. These are narrow-bladed grasses and are slower to establish than rye but they seem to make for an easier transition from overseeding to bermuda in the spring.

The bents are expensive and rather weak in the fall, but they produce good quality greens in the spring. These grasses are more heat tolerant, especially Penncross, and if you are planning to hold your winter greens a little longer or you have a special tournament in April or early May, you should give strong consideration to some bent in the mixture. Bents can be discouraged to give a good transition but are aggressive in early spring and the transition is dependent on management.

Because of the heat tolerance and aggressiveness of bents, more and more courses are making the transition to year-around bent. This is relatively simple to accomplish, but well drained greens are essential and the farther south you go, the more important it is to have both good internal and surface drainage. It follows also that the further south you are and the warmer the winter climate, the more bent required for a successful overseeding.

The bluegrasses with the exception of *Poa trivialis* have generally proven rather poor for overseeding purposes. The seed is slow to develop by comparison, the blade is rather coarse, transition is often poor and the seed is more expensive than other grasses which produce the same or better results. On the other hand *Poa trivialis*, ranks next to the ryegrasses as the backbone of the overseeding program in the South. This is a fine-to medium-bladed grass which masks *Poa annua* and offers a better-than-average transition. The primary problem with *Poa trivialis* is contamination of the seed with weeds and only triple-cleaned seed should be used.

Possibly some of the newer strains of bluegrass will prove worthy of consideration, but as of this year, only *Poa trivialis* measures up. Because of seed crop failure, *Poa trivialis* was scarce in the late fall of 1970 and availability may not be good for the fall of 1971. If this is the case, everyone should be extra careful about reading the seed tags to see when the crop was harvested and beware of outdated seed which may provide greatly reduced viability. The best alternative would be to select other varieties which have shown up favorably in testing.

Planting Techniques for Greens

Selecting the overseeding grasses is important, but it constitutes only a minor part of successful winter greens. More important are good planting techniques and proper subsequent maintenance. Almost any of the grasses mentioned will provide acceptable greens, but even the best grasses are only as good as the management they receive.

Planting is a crucial step in bringing about good winter greens. The planting date varies with location and seasonal variations in weather, but everyone is shooting for a date that coincides with the onset of cooler temperatures. This condition is more favorable for the grasses being planted than for bermuda. If the weather remains hot after planting, renewed bermuda growth and disease often destroy the overseeding and replanting becomes necessary.

There are several ways to go about planting

winter greens, and here again almost everyone has his own special technique. To start with we will list only the major points to be considered:

1. Get the seed in contact with the soil,
2. Strive for even distribution of all seeds planted,
3. Protect seedlings against disease,
4. Insure adequate nutrients and moisture, and
5. Mow properly.

Getting the seed into contact with the soil is usually accomplished by vertical mowing to remove thatch and excess bermuda growth. Topdressing is also used before seeding or after seeding or both. Vertical mowing and/or spiking after seeding is a third measure to further insure good seed-soil contact. Any one of these methods or any combination may be used successfully. Aeration, however, should be discontinued for five to six weeks before overseeding to avoid tufts of grass coming out of the aeration holes.

Even distribution of the seed is usually accomplished by sowing different size seed separately in as many different directions as practicable (two directions minimum). Small seed in lighter quantities may need a carrier such as sand or organic fertilizer. Skillfully operated, a knapsack or other broadcast type spreader is faster and insures good distribution, but the seed is more likely to be displaced by wind. If the drop type spreader is used to reduce the wind factor, then a splash board is necessary to prevent seed rows.

We have already covered the necessity of a good preventive fungicide program, so don't be caught short trying to save a few dollars by leaving your new grass unprotected with before and after seeding treatments of fungicide. Your investment in seed alone may run well over \$20.00 per thousand square feet, so why risk failure trying to save your club a couple of hundred dollars or less on an investment of perhaps \$3,000.

Adequate nutrients, especially phosphorus, should be applied prior to seeding and then as required to keep it growing rapidly. Slow release materials have some definite advantages on young seedlings, but all fertilizers should be used carefully during the establishment period. If you have made adequate preparation for a fertile seed bed before planting, the nutrients in the soil and the food stored in the seed should carry you at least two weeks from the time of germination.

Moisture is critical at planting time, and it makes no difference how wet the soil is underneath if the surface is dry. The first tiny root the seed puts out must have moisture at all times or the new plant will die in a matter of minutes. The quantity of water applied each

time increases as the roots develop, but the soil should always be moist in the entire rootzone. Heavy watering just after seeding will only wash the seed into pockets or off the fairway, so be gentle.

Last of all, I wonder how many tons of seed have been pulled up by a dull mower? The first few mowings should simply have the effect of rolling or firming up the seedbed. The mower should be set at half an inch or higher to just nip off the tops of the higher shoots. And the mower should be sharp. The height of mowing is then gradually reduced to the desired level as the seed becomes better established.

Temporary Greens?

With all this done the new seed should be well on the way, but you should also take some extra precautions, such as providing temporary greens for a few days after seeding so the tender shoots won't be walked off the greens. If the overseeded greens must be played immediately, move the cups frequently and keep them on the front so that traffic is minimized on the major portion of the green. Now you can take a short coffee break before you begin to worry about getting rid of all the seed you have just planted so the bermuda will come back in the spring.

During the next few months, most superintendents may be found anxiously watching the daily weather forecast for ice, sleet, snow, or rain or cutting out little plugs of turf to see how the dormant bermuda likes it. You have heard the saying that "green is good and brown is bad." When it comes to dormant bermuda stolons and rhizomes, a light milky brown is pleasing to the eye, but black means the funeral services are in progress.

The Spring Transition

If Nature is kind, spring will come as a gradual warming period and the transition from overseeding to bermuda will be gentle, gradual and relatively undetected by the golfer. Bermuda breaks dormancy at about 50°F and will continue to gain strength as the temperature increases to around 100°F. A few days of 60°, followed by a couple of 80° days, then a drop to 20° will cause some trouble unless we get back into the 70s pretty fast. These false starts followed by long periods of warm days and cold nights cause more trouble than much of the severe mid-winter cold.

When warm weather finally arrives for the summer, the golf course superintendent takes on a whole new set of problems. Now the aim is to discourage the overseeding and bring out the

bermuda. Too much discouragement will cause a rough transition with the cool season grasses going out before the bermuda is ready to take over. If the overseeding is pampered and allowed to remain too long, bermuda is retarded and may not come back at all. The process must be gauged according to the weather and the progress of the bermuda.

Early season vertical mowing lightly to thin out the cool season turf will get more light to the bermuda and help warm the soil. Spiking also helps to put air into the soil surface and speeds soil warming. Later on, aeration will introduce still more air into the soil and encourage the warm season turf.

Putting stress on the cool season grasses by a reduction of watering frequency and eliminating the use of more water than is required to just keep the turf alive will slow down the overseeding without affecting the bermuda.

Apply only enough fertilizer to keep a satisfactory cover on the greens and avoid stimulating top growth in the overseeding. Light doses of quickly available nitrogen as needed only to maintain some color and density are helpful. Quite often a gradual, almost imperceptible transition can be made, but a rather rapid transition is possible if it is required for a tournament or other special event. Once you are sure the bermuda base is strong and healthy and pushing to come through the overseeding, enough fertilizer can be applied to complete the changeover more rapidly. Since the cool season grass is tottering on the brink and bermuda is in an active growth stage, larger amounts of quickly available nitrogen of up to one pound per 1,000 square feet will stimulate rapid bermuda growth and virtually eliminate the overseeding. Just be careful not to apply so much fertilizer and withhold water to the point of damaging bermuda.

Closer mowing will also help to thin out the competition from winter grass and a combination of many or all of the practices reviewed may be helpful. A delicate touch is required for an easy transition, and each spring is different.

It is a sad state of affairs when you have to start thinning out a nearly perfect putting surface, but if properly done, the putting surface will be acceptable through the transition and nearly perfect again early in the summer.

Planting Techniques for Tees and Fairways

Overseeding tees and fairways is another matter. Tees may or may not be too complicated, depending on the maintenance standard of the individual course. Fairways require the least attention of all. Except in the very popular resort areas, we are only trying to give some winter color to fairways, and the lighter the seeding rate with which we can accomplish this, the better. Tees are intermediate between fairways and greens, but approximately the same general rules of overseeding apply to all areas.

Where possible, fairways are left unseeded, but concentrated traffic requires a protective winter cover on tees and greens. Bermuda fairways which have not been overseeded and are not subject to heavy traffic will come out in the spring two or three weeks earlier and in much better condition.

Instead of overseeding, dyes have been tried on greens, tees and fairways but have met with limited success. Dyes last only so long as the dormant cushion on which they are sprayed. Where traffic is heavy and concentrated (such as on trees and greens), thin turf covers soon develop, mud holes may result, and the dormant bermuda is often completely destroyed. With dyes, the playing conditions can only get worse because without a live surface, they will never be any better than they were when the bermuda went dormant. Don't rule out dyes altogether (especially for fairways), but recognize their limitations. Don't expect dyes to do anything but add color.

Hopefully, we will gain more knowledge about overseeding each year, and, better still, find a turf which needs no overseeding in the South. Until then, just be thankful for each success and try to learn from each failure.

THE CHANGING SCENE

G. Duane Orullian, Western Agronomist of the Green Section since 1968, has accepted a position as Director of Golf for the City of Pocatello, Idaho. He will be in charge of golf operations for the City's 36-hole course. During his three years with the Green Section, Mr. Orullian visited USGA Member Clubs in the

Eastern, Mid-Continent and Western Regions.

Carl Schwartzkopf joined the Mid-Continent office region as an agronomist in June. Schwartzkopf is a graduate of Michigan State University and will work with Lee Record in the Midwest and assist in Western Region visits as well.