

How Pinehurst Prepares Turf for Winter Play*

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To provide a good turf for winter play on the three 18 hole courses at Pinehurst two grasses have to be considered; Bermuda and rye. Bermuda is the basic grass and it provides the turf for winter play, but since it is dormant and brown at that time, rye grass is used to provide a green color for the fairways and a good smooth putting surface for the greens.

The growing season for Bermuda is roughly March to October or the period between killing frosts. During that period Bermuda has to be developed to provide the winter turf. Maintenance practices at Pinehurst prior to 1948 were aimed primarily at developing the Bermuda into a thick weed-free turf that would provide a soft cushion to walk on and an ideal surface from the golfing standpoint. Essentially the maintenance program consisted of applying lime in sufficient quantities, as determined by soil tests, to keep the Ph up to around 6 on the fairways and 7 on the greens. Then organic fertilizers, such as cotton seed meal or Milorganite, were applied around the first of June, July and August at 700 lbs. per acre for each application. This was supplemented with phosphoric acid and potash as the need was indicated by soil tests.

After years of this maintenance, it became increasingly difficult to obtain stands of rye grass that would survive uniformly during the winters. During periods of dryness and sudden drops in temperature to freezing, the rye grass would die in irregular patches due to the fact that the roots were not firmly established in the soil because of the thick Bermuda turf and mat of roots and clippings on the surface. In order to try and help the situation the fertilizer has been reduced to one application in the summer of 700 lbs. of 5-10-5 per acre around June 1, while still using enough lime to keep the Ph at 6 or over. Spot applications of fertilizer are made during July to any areas that show a need for it.

Lime Essential to Bermuda

Adequate lime is considered essential for the Bermuda grass. While it is true that it will grow in soils that are moderately acid, tests at Pinehurst in past years have showed that it produces a better turf where

the Ph is kept between 6 and 7. It will stand periods of dry weather better; weeds do not grow as well where soils are well limed and disease attacks, especially on greens, are less severe. Spiking is done at favorable times during the summer to break up the mat of clippings and to enable water to penetrate better.

The Bermuda grass is mowed from $\frac{1}{2}$ to $\frac{3}{4}$ inch during the spring and early summer and $\frac{3}{4}$ to 1 inch during the late summer and fall as often as needed, varying from one to three times a week.

Sow Rye in October

Rye grass is sowed in the fairways around the middle of October using 250 lbs. per acre. It is applied with the Little Giant lime spreaders (that have a whirling blade similar to the Cyclone seed sower) pulled by a tractor going over each fairway twice. Two men handle the entire operation and can do a complete course of about 50 acres in two 9 hour days, including small places around greens that are done with a hand Cyclone seed sower. The courses are spiked from 4 to 6 times after seeding with John Deere Rotary hoes, and preferably after a rain when the soil is moist. After spiking a chain drag is used to brush the loose soil down, and then everything is mowed to smooth the grass and also provide a light rolling to help press the soil and seed down.

Milorganite is applied at the time of seeding, using 700 lbs. per acre, and a second application is made in March at the same rate. The application in March also feeds the Bermuda, getting it off to a good start and carrying it until the June application as mentioned before.

As to mowing, the rye grass has to be cut short to keep it smooth, usually around $\frac{1}{2}$ inch—certainly not over $\frac{3}{4}$ inch. Frequency of mowing depends entirely on growth and may vary from once every 3 weeks to 3 times a week.

Fairway divots are patched about once a month from November through April, using the best soil with some rye seed mixed in.

June Beetle Control

Insect damage is confined almost entirely to the grub of the June beetle. Control in

* (NGSA convention paper)

the past was obtained by applying about 400 lbs. arsenate of lead per acre once every 4 years; but since the price went so high we tried on No. 3 course last September a spray application of 5% DDT and 3% BHC at 2 quarts per acre. However, there was no rain until about two weeks later and no control could be noted. We intend to try these and other new materials in the future.

Keeping Greens Turf Fine

Greens for winter play are provided by seeding with rye grass, and a good Bermuda base helps to give a cushion and also provides a surface for the rye seed to work down in and remain in place.

The main requirement for a good green is a true putting surface and this is best provided by having a grass of fine texture. Since rye grass is naturally a coarse growing grass, it has to be dwarfed through proper maintenance practices. The first requirement is to seed heavy enough so that the individual plants don't have room to grow coarse. The other is to provide only what topsoil and fertilizer are needed to keep the grass growing healthy. Rye grass responds very fast to nitrogen so it is better to apply small amounts as the growth indicates the need for it. We prefer the organic form since it lasts longer and provides a more uniform rate of growth.

Play is never stopped during the transition from Bermuda to rye. The Bermuda greens are mowed at 5/16 inch and the first rye is seeded during the first week in October. Fifty lbs. per 1,000 sq. ft. are used and applied evenly using the hand Cyclone seed sowers. The seed are then brushed down into the Bermuda by dragging with a carpet at least twice in different directions. Light watering after seeding will help work the rye seed down. When the greens are dry, topsoil which is dry and has been screened through a ¼ inch mesh screen is applied very light with Root spreaders, using only enough to cover the seed. This soil is smoothed and worked down into the Bermuda by dragging flexible steel mats over the greens in two directions. After this operation there is no soil on the surface to interfere with either play or the mowers.

The greens are then watered lightly twice a day until the rye seed germinates, then watered as needed.

About 3 weeks later another 50 lbs. of rye seed per 1,000 sq. ft. are applied, brushed in, topdressed and watered as before. During the latter part of November any thin places are reseeded as needed to make the grass uniform. The topdressing after this seeding covers the brown Bermuda which is dormant at this time.

The greens are mowed daily at 5/16 inch

and when the rye grass is long enough to mow, the greens are treated with mercury and calomel mixed half and half at the rate of 1½ oz. per 1,000 sq. ft. Future applications are made as needed, depending on weather conditions and prevalence of disease. Applications may vary from one to four weeks apart, but the average time is two weeks. Our main trouble is with brownpatch. We have some damping off in the fall, and a few dollar spots, on one green especially, in the fall and spring.

Fertilizing Program

As to fertilizing, none is applied for about 3 or 4 weeks before the rye seeding. The first application is about 3 weeks after the first rye seeding using about 12 lbs. Milorganite per 1,000 sq. ft. Future applications are made as the grass shows the need for it, varying in time from 2 to 4 weeks, using 10 to 15 lbs. per 1,000 sq. ft. Cyclone seed sowers are used to apply it in preference to distributors to eliminate streaking.

The greens are usually mowed at 5/16 inch until spring and then at ¼ inch, using mostly hand putting green mowers. Some power mowers are used for very heavy cuttings and when height is lowered. Grass catchers are used when the cuttings are heavy, otherwise the cut grass collects on the wheels and rear rollers of the mowers and the resulting job will not be even. During periods of cold weather when mowing isn't done every day, and after applications of fertilizers and fungicides unless it rains, the catchers are left off. The greens are mowed a different direction each day, thereby helping the grass to grow more erect and giving the greens a pretty pattern effect. Divots or ball marks are repaired each day before mowing by prying the soil up and applying a few rye grass seeds which are spiked into the soil. In a week or two the seed germinates and the signs of the ball marks disappear.

On the two courses that are closed during the summer the procedure for opening the greens varies some. Since they are mowed the same as fairways during the summer, they have to be cut down close. This is done with power green mowers and several mowings are needed to get them down to 3/16 inch. All clippings are removed. Seeding and topdressing are the same, but the seed is not brushed in because there is no surface Bermuda to hold them in place. Usually more topsoil is needed to cover the seed, and this is smoothed with wood scrape boards instead of the steel mats; mowing starts at ½ inch and is gradually lowered to 5/16 inch when opened for play 15 days later.

This covers pretty well the standard operations to produce and maintain win-

ter turf at Pinehurst. Naturally operations vary at different courses and probably work better. However, these methods have worked well for us for quite a while, and although changes are needed and will be made from time to time, we believe we're doing the right things most of the time.

Well, it sounds simple enough when telling about it, doesn't it? And that's just what most people, including the majority of golfers, think it is. Simple, just sow your seed, fertilize and water it, and there's your grass! Only the fellows who are engaged in the production of turf know the headaches and worries that go with it.

Comfort of Non-Playing Guests Helps Driving Range Patronage

By Bob Hall

If you want to please today's driving range customer, you've got to give him what he wants.

That's why one of Southern California's popular Practice Fairways is the one the pros raved about during the winter tour at Lakewood. Manager Al Smith and his corps of four PGA instructing pros try to keep everyone happy.

For instance, if you're a family man, you likely have trouble getting out at night. So does your wife, if she wants to hit a few practice balls, too.

What does Smith do? He installs a Children's Playground on the northeast corner of the range, out of the way of the hitting area, and fully lighted. The playground includes a teeter-totter, three swings, a merry-go-round, plenty of lawn and it's all fenced.

Mama and papa come out to sharpen their game, the kids get a little exercise and plenty of fun — and everyone's happy.

Then there's the problem of comfort.

How many times have you taken a friend, who doesn't golf, but kinda likes to tag along, to the fairways while you hit a few before dinner or prior to the show, the dance or the double date?

Well, Lakewood Practice Fairways has answered that one too.

Your friend doesn't have to stand and watch. He can either sit in an easy chair right alongside your tee-set, or he can lean back in comfort in the porch swing or garden chairs in the patio of the range's clubhouse.

Speaking of the clubhouse, there's another item for the customer's convenience.

They've a full line of golf equipment — balls, bags, clubs, sweaters, shoes, gloves, tees and what nots.

For the golfer who doesn't like to be crowded when he's hitting 'em, the range

offers a 408-foot tee width, and a chair behind each set for the girl friend, wife or boy friend.

The tee area is 160 feet deep, allowing for a change of tee line three times a week.

There's an underground sprinkling system covering the entire area.

Six greens are maintained for those who like to practice pitching to the pins. Two of them are listed at 75 yards, and one each at 125-yards, 150-yards, 200-yards and 225-yards. All are slightly trapped to make the play more interesting.

The tee sets are so planned as to hit the long drives through a row of trees, beginning at about 200 yards from the front tee.

There are eight light standards, with six powerful globes on each standard, giving off in total 50,000 candle-power. A 250 yard drive can be seen from impact to fairway just as in daylight.

Another customer-convenience is the radio system between the driving range, the clubhouse and grill and the pro shop.

Anyone wishing to "hit a few" before teeing off on a busy day can be contacted immediately at the range from the pro shop or starter house that he's up in five minutes, or wanted on the tee at such and such a time.

It is estimated that an average of 12,000 balls are hit off the Lakewood Practice Fairways every day of the year.

The range is lighted until 10 p.m. about 9 months of the year, closing only during the three mid-winter months for night activity.

A neat little range "pro shop" is maintained, including a canopied patio in which soft chairs, soft drinks and soft radio music are available.

Instructors on the tee at present are Charles Koontz, Larry Gleason, Bob Tucker and Vic Baker, who is pro at the Lakewood Country Club, but gives many of his lessons on the range. Vic's assistants in the Lakewood shop, Vic Owen and Wendall Wilmot, also give their lessons on the range tees.

But, do you know, the factor that Manager Al Smith kept pointing to the most as something the customers liked, was that Children's Playground.

"You'd be surprised how many bring their youngsters along in the cool of an evening and hit a few while the kids have their fun, too," he'll tell you.

Maybe that's why the PGA clinic at the Long Beach Open at Lakewood in January was rated by George Schneider in his resume of the Winter Tour, as the most graciously received and one of the most successful.