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February, 1948

Velvet Bent As A Manufactured Product for Golf

By FRANKLIN HAMMOND

Grass can be produced as a manufactured product to meet very close specifications. The various steps in its production can be controlled to a surprising degree if one is willing to accept this theory. We are not producing a crop. What we are trying to do is to make a definite product for a particular purpose just as a manufacturer makes a radio, chair or any other object.

The materials of construction are known to us. A great deal of knowledge of how these materials act and react is at hand. Seed, soil, fertilizer, water, mowing, and pest control, all are familiar. We use them constantly. We have been lazy in our production of turf. We have left it to nature to do the work. We put all the materials into the machine (soil), sit back and wait for results. Sometimes the results are far from what we expect.

Why not select the exact materials we want in just the proportions we wish, leave out what we do not want and see if the results are not more satisfactory? Agriculture, nature, or whatever you wish to call it, has taught us how, why, and when to use the materials. We must adjust this knowledge to our own particular problem just as the chemist mixes his chemicals, watches reactions and keeps his work under control.

I believe turf growing as we practice it today is more or less of the trial and error method based on the principles of Agriculture as laid down for crop production. We are trying to produce a specialized product with a technique adapted to our needs rather than designing a method for the particular problems we have to deal with.

It is suggested that those engaged in the production and maintenance of turf follow standard practice for their locality only as long as it seems correct to the user. If some variation, or outright departure from accepted methods is indicated try it out.

Keep an open mind on the subject. If the other fellow gives you a hint of something you think is workable, try it out. Not once, but several times. If it works stay with it.

Be very careful in interpretation of results. You could be wrong. If you are convinced you are right stay with it. One can make mistakes with velvet bent and still have something left to start again. I hold radical ideas on the methods of producing velvet bent turf. Particularly so regarding the soil, seed bed, watering, and feeding.

Growing Methods for Velvet Bent

The materials and technique used, where they differ from accepted practice, have been developed over a period of 18 years of growing Kernwood velvet bent. So far they have proven satisfactory to me. The turf produced has pleased me very much. The methods used have been applied, not once, but several times and the results have confirmed my opinions. Much is suggested for improvement but progress has been satisfactory.

Reasons why velvet bent is desirable for fine turf are:

Top quality in appearance and feel.

Suited to a wide range of soils and locations.

Tough, vigorous, and a persistent grower.

Easily produced and maintained.

This grass was named for its appearance and feel.

Wherever grass may be grown in the northeastern United States velvet bent will grow. It can be produced on the complete soil range from heavy clay to light sandy loam. Even though the extremes of wet and dry soil are not good for turf this grass can be so managed under these conditions as to make a fairly satisfactory piece of turf. It does well in shady places and is excellent in the open.

Stands Mismanagement

From its many fine blades it acquires toughness. The abundance of roots and reproducing stems contribute much to the vigor of growth. The plants are able to maintain themselves in good health when cut as short as a quarter of an inch. It quickly adjusts itself to dwarf habits of growth. Once established in the soil it becomes the most dominant plant in the area. While it is slow to germinate the seed will produce plants which are permanently established and will stubbornly withstand mismanagement.

There are several strains of velvet bent in common use. Which is best I believe is a matter of personal opinion. Each grower is apt to think his strain is best and without doubt, for him, it is. The



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WESTGATE RUBBER CO.

February, 1948

writer's experience has been confined to Kernwood exclusively. As I have looked over various experimental plots in other locations it has not been difficult to convince myself that this strain was the best of the lot. At the same time other growers with me could easily see that their own particular strain was outstanding.

Many promising strains are still in nurseries throughout the country. Some of them will be heard from later, without doubt. Each grower should be on the watch for promising types and develop with one or two himself.

The original Kernwood strain was selected by the greenkeeper at the Kernwood CC. Salem, Mass., in the early 1920's. He did some work in propagating his selection. His successor at the club, Robert A. Mitchell, is the man who did most toward bringing this strain to the attention of the growers of fine turf. Mr. Mitchell ("Bob" or "Pop") has the natural qualifications for this work. He is very methodical, conservative, and slow to form judgments, and very careful in interpreting results. I have seen, at his club, nurseries containing several strains of velvet he has selected but as far as I know at this time Kernwood is still first choice with him.

Methods of Producing Turf

Turf is produced by two methods: Seeding and Stolons. Which method to use will be decided by the purpose of the turf and local conditions.

Velvet bent seed is very small in comparison with other fine turf seed, there being about 10 million seeds to the pound. Other lawn seeds such as Colonial bent average around five million seeds per pound. For this reason this seed should not be scratched or brushed in to the seed bed. Such an operation would bury the seed so deeply that it would be unable to push its first leaves above ground before the nourishment in the seed is exhausted and roots established to feed the young plant.

Preparing the seed for spreading requires judgment. The seed is so fine and light that the slightest breeez will carry it long distances. The motion of the arm, if spreading by hand, will create enough air current to carry the seed 20 feet or more in any direction.

Should pure cleaned seed be used it must be mixed with some form of a spreader or carrier. This spreader should be moist or sticky enough to reduce the wind action or the neighboring areas will benefit at the expense of the area being seeded.

If seed is combined with its own chaff no better spreader can be obtained. Until a good reliable material is developed for this purpose it would be well to secure seed in the "chopped hay" form from some reliable grower than to use pure seed with an unsuitable spreader.

After the seed is spread a light rolling will press it into the seed bed the proper depth. A 24-inch water roller half full of water will be a satisfactory tool for this purpose.

From this point on water and temperature are the important factors. The first week or 10 days the area should be watered several times a day with a fine spray. The aims are to keep the surface of the soil moist, not soaked, at all times; and to accumulate a little excess moisture which will gradually penetrate the seed bed as the roots develop. Keep in mind air must be available to the roots as well as moisture so do not flood the soil at this time.

Seeding may be done at any time during the growing season. There will be little germination with temperatures below 50 degrees or above 90 degrees (F). The more uniform the temperature within this range the better for germination. This is one of the reasons why Fall seeding is desirable. Competition with weeds is of minor consideration with velvet bent. This grass is such a vigorous grower in New England that very few weeds can compete with it. Where soil, water, and temperature are favorable velvet bent can start from scratch with any weed in this locality and crowd it out of the picture. Without doubt seeding in late August is best and will produce a dense tough turf by June of the next season.

If time, with regard to the use of the turf to be grown, is not important seeding is the best and most simple method of producing new turf. The seed is easily applied with a minimum of labor. Maintenance operations up to the time of the first mowing consists of watering only. Germination of the seed is slow, from 10 to 20 days being required. It could be a month before the grass is ready for the first mowing.

HARRIS BUSY IN ILLINOIS

Robert Bruce Harris, Chicago, golf architect, is reflecting current brisk activity in course construction with a considerable volume of work in Illinois. He has finished plans for a new course for Macomb CC, another one at Macomb for Illinois State Teachers' college, remodelling the Pekin Park District 9-holes and adding another 9 and a new muny course at Flora, in the heart of the Illinois oil fields.

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Hundred Attend Texas Turf Conference

Texas Turf Assn. members went home from the second annual conference at College Station Jan. 12-13-14 provided with practical material to be used in development of their turf by the country's outstanding specialists on all phases of golf course maintenance.

The 100-odd grounds superintendents and pros who attended felt that great advances are being made in improving their courses through the annual conferences.

Dr. Fred V. Grau, director of the USGA Green Section, Washington, D. C., in his opening day talk, stressed the need for a special turf experimental station at Texas A&M. Speaking on "What's New in Turf," Grau pointed out six developments in the past year.

1—That more turf associations are being formed over the country; 2—That more state experimental stations are beginning to spend additional time on the study of turf; 3—That the American Society of Agronomy has widened its scope on the study of turf; 4—That there is close cooperation between the newly formed American Society of Golf Course Architects and golf course supts.; 5—That the USGA Green Section has received close to \$15,000 in contributions to support the national decentralized cooperative programs of research and education in turf; 6—That turf research fellowships have been established at several colleges.

Grau also pointed out that the USGA Green Section is trying to coordinate on a national basis with all factors that are interested in turf, but that it is up to the sections to analyze their own problems.

Paul J. Talley, plant physiologist of Texas A&M, speaking the second day of the meet on grass care, startled his audience by revealing that he had not mowed his lawn in six months. He advised little watering, and that only if the grass is suffering.

Dr. Thomas C. Longnecker, senior soil agronomist of the Texas State Research Foundation, recommended early morning watering to keep down grass disease. "Keep the grass on the hungry side during hot weather," he cautioned.

Dr. Longnecker advised against overfertilizing. He also warned greenkeepers against improperly adjusted mowers, poor surface and underground drainage, and compacted soil. Play should be restricted and heavy equipment should be kept off the course during extremely wet weather or periods of overwater.

Dr. Grau, also on the second day's program, pointed out that mowers should be adjusted to cut from three-sixteenths to one-quarter of an inch for greens. Other speakers on the agenda included Gordon H. Jones of Fort Worth, regional agronomist of the CAA; Dr. H. G. Johnston, head of the department of entomology and Dr. W. P. Taylor, department of wild life management, both of Texas A&M; Dr. O. J. Noer, Milwaukee, Wis., Sewerage Commission; and Ben Lee Boynton, president of the Texas GA.

In his final day address, Dr. Gray, discussing burr control, recommended a spray of sodium arsenite, to be made of four to six ounces of arsenite for each 1,000 square feet of turf. The application must be repeated several years in succession to take care of long-germinating periods of burr seeds. Where the grass is thick and infested with sand burrs, fertilizer should be applied to get denser grass. He recommended application of a mixture of sodium arsenite and fertilizer in the late summer for elimination of crabgrass from Bermuda greens and lawns.

Dr. Longnecker said that cotton hulls, cotton burrs, grass clippings and leaf mold also are good sources of humus in compost.

Robert C. Dunning of the Southwest Turfing Co., Tulsa, Okla., in discussing care of Bermuda, rye and bent grass greens, warned against excessive use of nitrogen.

In closing the convention, members were advised by Gordon H. Jones that the 1949 meeting will be more diversified to include sports other than golf, and that field trips will be scheduled.

NEGRO PROS SUE FOR \$315,000 - Bill Spiller and Ted Rhodes, Los Angeles, and Madison Gunter, San Francisco, have filed suits for \$100,000 apiece against the PGA and \$5,000 apiece against the Richmond GC, contending they were barred from participating in the Richmond Open. Suits against the Richmond club are for loss of possible \$2000 first prize plus \$3000 for humiliation. Negroes claim PGA restriction to caucasians denied them right to earn livelihood as pros. Spiller and Rhodes finished among first 60 in Los Angeles Open and claimed eligibility to Richmond Open which was run under contract with PGA tournament bureau. Los Angeles Junior Chamber of Commerce, sponsors of LA Open, did not sign PGA contract. The Negroes said Richmond club officials accepted their entrance money, then returned it and told them they could not play. Pat Markovich, Richmond pro and tournament director, said the matter was beyond his jurisdiction as the PGA was running the tournament under contract and could fix qualifications of competitors as it chose. George Schneiter, PGA tournament bureau chairman, said provisional waivers have been sent the Negro complainants but he doubted the PGA would approve issuance.



Bermuda-Rye Greens Conversion at Nashville

By Charlie Danner

Summary of paper at Southern Turf Conference. Knoxville, Tenn., January 6, 1948.

Nashville and vicinity present problems in turf management on golf greens which are different than the ones encountered in sections farther south due to extremes in weather conditions. The winters in Nashville are very cold, with snow and sleet quite common. Temperatures sometimes go to zero with freezing nights and warm days frequent. But there are enough warm days throughout the winter for golfers to demand courses that are kept in good playable condition the year around.

As a rule, rye grass for winter play is seeded at Nashville during the first week in October, and never later than the second week of that month regardless of weather. We know from experience that the rye grass must be well established before cold weather. Once established it will withstand cold without losing color but needs warm weather for germination and initial growth. We have not used bent or other northern grasses. They may be all right farther south but in Nashville they go off color more than rye grass during midwinter.

The Bermuda turf is sacrificed before seeding the rye grass. Greens are handraked and then cross mowed with power mowers. This is done for two reasons; first, to remove the excess of Bermuda grass so the rye grass seed can make contact with the soil, and second, to set back and check the Bermuda in case weather should continue warm enough for its growth after the rye grass is seeded. Sacrificed Bermuda cannot make enough growth to crowd out the young rye grass.

Approximately three-quarters of each green is seeded. A small portion in front is left for play. The rye grass is sowed heavily at approximately 40 to 50 pounds per 1,000 sq. ft. and is put down with a fertilizer spreader in two directions using half the seed in each direction. Cross seeding eliminates streaking. The greens are topdressed lightly after seeding, using just enough to cover the seed. By keeping the green moist the seed will start to germinate in six days and will be up and out of the ground in nine days.

Mowing of New Rye

Mowing starts on the ninth day with mowers set at 5% inches. Height of cut is lowered gradually to approximately 3/16 inches. Mowing starts around the ninth day after seeding and greens are opened for play the following week. Then the front part is seeded using the procedure described above.

All mowers are overhauled and sharpened to razor-like sharpness so they cut clean without pulling out the tender young grass seedlings. A razor-sharp mower is the secret of early cutting at approximately one-half inch.

Milorganite is applied at 40 to 50 pounds per 1,000 sq. ft. during the second week after seeding, and again four weeks later. Fertilization was omitted purposely before seeding to prevent the rye grass from becoming soft and fall prey to damping-off. Nitrogen feeding would also make the Bermuda grow more aggressively should weather stay warm enough for it to grow.

The two applications of Milorganite carry the greens through December, January and February. Greens are topdressed in March and fertilized with 5-10-5 or Vigoro, followed by sulfate of ammonia at three-week intervals using 10 pounds of sulfate to each 1,000 sq. ft.

By April the greens are in beautiful shape. Everything done then until the rye grass dies out is aimed to help bring the Bermuda back. Starting in April the greens are forked, using a three-pronged fork. The fork is inserted into the soil every 4 to 5 inches. It is inserted to a depth of 5 to 6 inches and the handle is moved back and forth, to loosen the soil. This operation gets air to the Bermuda roots and helps drainage. Greens that are imperfectly drained are forked twice if at all possible. From experience we have found that Bermuda comes through best on greens with good drainage.

Gradual Transition to Bermuda

No attempt is made to kill the rye grass. In fact efforts are made to keep it as long as possible and to make the transition from rye grass to Bermuda grass a gradual one so play is not affected or interrupted. The rye grass lasts through May and well into June. When it begins to die the greens are spiked and sowed with 30 to 50 lbs. of hulled Bermuda grass seed to each green. They average 4,000 to 5,000 sq. ft. Then the greens are fertilized with Milorganite and sulfate of ammonia and topdressed. The transition period never lasts more than three weeks. Greens that have good drainage often have good Bermuda turf in ten days after disappearance of the rye grass.

The biggest problem connected with the transition period is crabgrass and crowfoot, or silver crabgrass. These weeds get started because the stand of Bermuda is thin. The use of rye grass for winter play weakens the Bermuda and retards its initial growth in spring. We intend to use a good knife on crowfoot, as in the past, and will rely upon PMAS or Milarsenite for the crabgrass. Results obtained with PMAS in 1947 were very encouraging.



1948 CALENDAR OF EVENTS

FEBRUARY

- 5-8—Texas Open—Breckenridge Park G.C., San Antonio, Texas, \$10,000.
- 5-8—Orangebrook Invitational, Orangebrook C.C., Hollywood, Fla. (Women's)
- 9-13—G S A Annual Turf Conference—Book Cadillac Hotel, Detroit, Mich.
- 10-14—Championship of Palm Beach, Palm Beach Club, Palm Beach, Fla. (Women's)
- 12-15—Rio Grande Valley Open, Harlingen Municipal Golf Club, Harlingen, Texas, \$10,000.
- 16-20—Everglades Invitational, Mixed Foursome, Everglades Club, Palm Beach, Fla. (Women's)
- 19-22—New Orleans Open, City Park or Metaire C.C., New Orleans, La., \$10,000.
- 25-29-Mixed Scotch Foursomes Open, Dubsdread C.C., Orlando, Fla.
- 26-29—St. Petersburg Open, Pasadena Municipal Course, St. Petersburg, Fla.

MARCH

- 2-3—Annual Seminole Pro-Amateur Invitational, Palm Beach, Fla., \$10,000.
- 2-6—South Atlantic Championship, Ormond Beach Golf Course, Ormond Beach, Fla. (Women's)
- 6-9-Miami Four Ball, Miami Springs C.C., Miami Springs, Fla., \$10,000.
- 8-12—Florida East Coast Championship, St. Augustine Links, St. Augustine, Fla. (Women's)
- 11-14—Jacksonville Open, Municipal Golf Course, Jacksonville, Fla., \$10,000.
- 14-17—Annual Convention, Club Managers Association of America, Radisson and Nicollet Hotels, Minneapolis, Minn.
- 15-21—14th Annual Amateur Senior Match Play Championship of America. Golfers fifty years of age and over, Sebring, Fla.
- 18-21—Titleholders' Championship, Augusta C.C., Augusta, Ga. (72 Holes Medal) (Women's)
- 19-21—Greater Greensboro Open, Starmount Forest C.C., Greensboro, N. C., \$10,000.
- 25-28—Charlotte Open, Myers Park Golf Club, Charlotte, N. C., \$10,000.

APRIL

- 1-4—Columbia Open, Columbia C.C., Columbia, S. C., \$10,000.
- 8-11—MASTERS', Augusta Nat'l. Golf Club, Augusta, Ga., \$10,000.
- 12-16—North and South Amateur Invitational, Pinehurst, N. C. (Women's)
- 19-23—North and South Amateur Invitational, Pinehurst. N. C. (Men's)
- 26-May 1-English Amateur Championship, Little Aston.

MAY

19-25-PGA Championship, Norwood Hills CC, St. Louis, Mo.

- 21-22—Curtis Cup Match, women's amateur teams, British Isles vs. United States at Birkdale, England.
- 24-28—British Amateur Championship, Deal Golf Club, Kent, England.
- 30-31—Nat'l. Junior College Golf Championship Tourney, Wentworth Military Academy, Lexington, Mo.
- 31-June 4—British Ladies Open Amateur Championship, Lytham and St. Anne's, Lancashire.

JUNE

- 10-12—U. S. Open Championship, Riviera C.C., Pacific Palisades, L. A., Calif. Entries close— Monday, May 17. Sectional qualifying rounds—Tuesday, June 1.
- 15-18—31st Western Junior Amateur Championship, Purdue University, Lafayette, Indiana.
- 17-20—Chicago Victory Open (C.D.G.A.) Midlothian C.C., Midlothian, III.
- 17-21-Southern Amateur Championship, Audubon C.C., Louisville, Ky.
- 21-26-Women's Western Open Championship, Skycrest CC, Chicago.
- 27-July 3—NCAA Championship, Stanford University, Palo Alto, Calif.
- 28-July 1—British Open Championship, Muirfield Golf Club, Gullane, Scotland.
- 29-July 5—46th Western Amateur Championship. Wichita C.C., Wichita, Kans.

JULY

- 19-24—U. S. Amateur Public Links Championship, North Fulton G.C., Atlanta, Ga. Entries for Sectional qualifying rounds close with Chairmen of Sectional qualifying committees— Wed., June 16. Sectional qualifying rounds —The period Sunday, June 27 to Saturday, July 3; exact date in each Section to be fixed by Sectional Qualifying Chairman.
- 26-Aug. 1—45th Western Open Championship, Brookfield CC, Buffalo, N. Y.

AUGUST

- 3-7-U.S.J.C.C. National Junior Amateur Championship, Lincoln, Neb.
- 12-15—Swedish Int'l. Amateur Championship. Bastad GC, Bastad, Sweden.
- 18-22—Southern 4-Ball Championship, Birmingham C.C., Birmingham, Ala.
- 30-Sept. 4—U. S. Amateur Championship, Memphis C.C., Memphis, Tenn. Entries close— Monday, Aug. 2. Sectional qualifying rounds —Wed., Aug. 18.
- 30-Sept. 4—Women's Western Amateur, Olympic Club, San Francisco, Calif.

SEPTEMBER

13-18—U. S. Women's Amateur Championship, Pebble Beach Course, Del Monte, G. & C.C., Del Monte, Calif. Entries close — Mon., Aug. 23.