

Reports on Research from Across The Nation

Technical Speeches at GCSA Meeting in Louisville Point to Progress That's Being Made in Lab and Field

Golf's Growth Calls for Steady Advance in Research

By WILLIAM H. BENGEEFIELD

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Mainly due to overcrowded conditions, several Western courses reported over 10,000 rounds of golf played every month during the summer of 1956. This is a lot of golf and presents the supt. with a multitude of problems. He is looking to colleges and other agencies for the solutions to these problems through research.

In 1956 research workers at Texas A&M and UCLA came up with data on soil mixtures for putting greens that will minimize compaction. The 85 per cent coarse sand, 1 1/2 per cent organic matter, and 7 1/2 per cent clay particle was the No. 1 research contribution to Western courses in 1956. Many experimental greens were established using this formula.

What about the grasses? Merion performed outstandingly on tees in the Northwest. It came through the severe winter of 1955-56 much better than any other grass. Alta and Kentucky 31 fescues provided good turf for roughs in the desert as well as in humid areas.

Of the bents, new greens of Congressional, Arlington and Congressional, Cohansey and Pennlu, were established last year. From early observations, all seemed to be an improvement over Seaside. Elmer Border, supt. at Olympic CC in San Francisco, had very good results in plugging Congressional into poa annua greens. Bill Beresford's bent selection, called Los Angeles CC bent, performed well on his course.

Seed of U-3 Bermudagrass received considerable publicity last year but in plot trials it was disappointing. Dr. V. Youngner of UCLA commented that in tests made at his station seeded plants were extremely variable and definitely not U-3 Bermuda.

In the fertilizer field a new material containing approximately 39 per cent potassium was introduced by a Los Angeles ceramic firm. The potassium is slowly released and the product reacts much like Urea-Formaldehyde materials. It may find a real place on light sandy soils, under heavy irrigation.

Weed control is one of the West's weakest

points from the research standpoint. Kikuyugrass, English daisies, Dallisgrass, and oxalis are major problems.

With golf enjoying such tremendous growth, we in the turf business must continue, indeed increase, our research activities if we are to have any hope of maintaining even present standards.

Courses Are Trial Plots for Laboratory Findings

By CHARLES K. HALLOWELL

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It is normal that there is a preparatory step before the research findings become standard practices on courses. Trial plots or field demonstrations constitute this step. These convince if the new is practical. Demonstrations often show an improved strain of grass growing alongside a strain long in use, or trial applications of herbicides, fungicides or insecticides may determine their action on grasses.

Development of better putting grasses on trial greens by John Monteith, formerly with the green section, and a number of golf course supts., showed that Arlington, Congressional, Cohansey, Collins, Toronto and Old Orchard, were the leading creeping bents.

Pennlu is a stolon bent and Penncross is a seeded bent, both having been developed by H. B. Musser of Penn State. They are now being carefully studied under playing conditions to determine if they are equal or superior to other improved putting green bents.

The Bermudas, developed in Florida and at Tifton, Ga., showed how important it is to continually carry on research work in developing better strains of grasses. Tifgreen shows promise and is being thoroughly tested by members of the Tidewater Turfgrass Assn. U-c Bermuda, after careful testing, is being grown on tees and fairways.

Merion, released more than six years ago, is coming into its own more and more each year. It is a superior grass but has limitations that must be determined by those using it.

Story Behind Aeration

Aeration by power-operated tools called for studying new management methods. First, facts were assembled by supts. getting together and pooling their experiences. Then in 1947, '48 and '49 a summary of the findings of members of the Philadelphia GCSA on how the aerifier assisted in reducing soil compaction and in aiding water and plant

food absorption was distributed to courses in the Philadelphia area.

Research studies came later. Penn State reported on actual figures on increased root growth, the amount of rainfall going into the soil after aeration in comparison to soil showing compaction and how phosphorous was placed in the root zone.

Vertical mowing machines, which aided greatly in removing mat and improving the surface, took many demonstrations before they were adopted.

Japanese beetles arrived in this country 30 years ago and intensified studies on grub control. The application of 3 lbs. per acre of one of the new insecticides and the immediate control of grubs is much different from Joe Valentine's reports on use of so-called insecticides in the early 20's which then were harmful practices. Joe says that when the grubs died so did the turfgrasses.

Research workers first brought forth arsenate of lead, then DDT, followed by chlordane, aldrin, dieldrin and heptachlor. Each one was an improvement on its predecessor.

Fungicides found to have a place in controlling diseases on greens were Tersan and the cadmium compounds. Both were applied by Penn State research workers carrying on studies in the field. Field plots at Merion in 1942 showed the effectiveness of what is known now as Tersan, and in 1948 Bob Mean's work at the Philadelphia CC, in cooperation with Marshall Farnham, determined that cadmium was effective in controlling dollarspot.

The green section's research work showed how effective sodium arsenite was, and still is, in checking weeds. The first work was done by Fred V. Grau, when a graduate student, in the early 30's. Later Mrs. Fanny-Fern Davis, who was in charge of green section's activities during World War II, discovered that 2, 4-D was effective in controlling broad-leaved weeds. It is still in general use today. This work was followed by herbicides developed by Jess DeFrance at Rhode Island U. and others and showed the place of phenyl mercury and disodium methyl arsonate in crabgrass control.

William H. Daniel of Purdue developed facts giving supts. confidence in 2, 4, 5-T to control clover in fairway turf and better guidance in applying arsenate of lead for checking poa annua.

Ureaform fertilizer was offered for general use after studies had been made at Penn State. Plot studies were made at the Experimental nursery; then there were comparison studies on the use of ureaform and known proved fertilizers, these trials having been made on fairway grasses.

Now that ureaform fertilizer is on sale, most of it that is used is being applied to greens. How much to use after application, and how frequently to apply it, calls for further studies which are made from observations, the amount of clippings removed, etc.

There has been a demand for additional facts on the use of ureaform. Again, supts. have been liberal in pooling their information on this new source of nitrogen fertilizer used on greens.

Research has been most helpful, and more is necessary, before we speak with confidence on how to get rid of poa annua. There is a strong demand for further facts on what to put into, or substitute, for soil when constructing greens. All of you know of other projects that show the need for more fundamental facts. As research data becomes available it is equally important that demonstrations be carefully carried out under actual maintenance and playing conditions.

1956 Was Great Year for Maintenance Contributions

By ALEXANDER M. RADKO

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1956 was a good year for supts. to try many things they had learned over the years through research, but had held for future use. When things are going well, it is difficult to sell a membership on needed course improvements, but after the hurricane season of 1955 in the Northeast, the membership was psychologically prepared, and the supt. had the opportunity to set wheels in motion to make necessary changes suggested through research.

The use of select vegetative strains of creeping bentgrass has increased sharply. Most prominent among these has been use of C-1 Arlington and C-19 Congressional strains. Many new plantings of this mixture were made in nurseries or directly into greens. A notable example of the expanded use of these strains: an original planting of 6,000 sq. ft. by Arthur Anderson of Brae Burn CC, West Newton, Mass., has been used to plant 100,000 sq. ft. of putting turf in various courses in the Boston area. During the past two years, local commercial growers of C-1 and C-19 creeping bentgrass were unable to keep up with demand. These creeping bentgrass strains have been working out very well where tried.

Penncross is Popular

Demand for Penncross seed for putting green purposes also has been on the upgrade. Several nursery putting green plots have been installed for observational purposes. Supts. are enthusiastic about turf cover obtained. Texture, color, and quality generally have been most encouraging. The demand for seed in 1956 exceeded the supply . . . many more supts. would have tried it if they could have obtained Penncross seed.

Use of Merion bluegrass on tees has been on the upgrade. During the tough year of 1955, Merion bluegrass stood up better than most other cool season grasses at several courses in the Northeast. As a result, many new tees were planted to this strain in 1956.

Putting green diseases were a major problem