



Jim Watson describes some-turf tests to Toro dealers. Section of the large R&D building is in background.

Research and Development Center Opened by Toro

TWO YEARS AGO Toro Mfg. Co. began construction of a \$300,000 research and development plant in suburban Minneapolis with the objective of coordinating grass and machinery testing under golf course operating conditions.

The completed plant was the scene of the recent meeting of the Toro distributors.

On 11 acres of the 22 acre test grounds are green, fairway, rough, tee, bunker and lawn areas built to present a wide range of normal and difficult conditions, many grass test plots, and a large building equipped for constructing and testing future items of the Toro line. This building also houses Toro's agronomy and mechanical department offices. A considerable quantity of Toro parts are warehoused in this building which is 10 miles from the company's main plant.

In the summer of 1952, construction of the research and development center was put under way by Dave Lilly, pres.; and Bob Gibson, vp., of Toro. They engaged Jim Watson as agronomist. Watson came from Texas A&M where he was teaching and doing turf research for the Texas Agricultural Experimental station.

After taking his bachelor of science degree at Texas A&M Watson had worked three years at Penn State on grass research under Bert Musser. There he acquired his PhD.

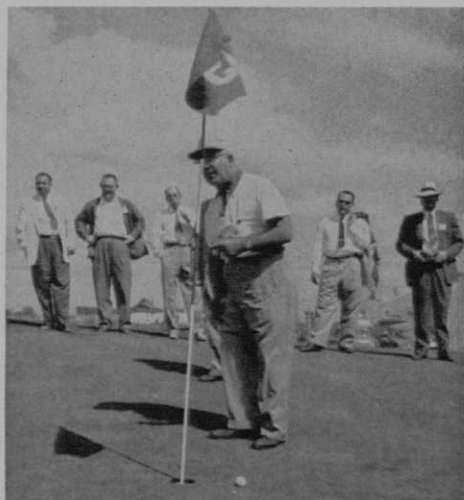
Built Course Test Features

M. R. (Scotty) McLaren, widely known as Toro's veteran field service engineer,

and Leo Feser, long prominent as a successful golf course supt., and an official of the national and Minnesota golf course supts.' associations, collaborated in laying out the golf course testing features. These include a huge green that presents in its contours, bunker shoulders, approaches and general design every sort of a maintenance problem. Tees with slopes that give maintenance and budget headaches, steep and sharply rolling fairways and swampy rough also were provided.

Part of the area is irrigated.

The Minnesota Golf Course Supts.' Assn.



The veteran Scotty McLaren points out results of tests made on specially built green.

and the Minnesota Golf Assn. cooperate with Toro in appraising research projects and financially.

The machinery development phase of the operations is under the management of Don O. Benson, who is well known in engineering circles as a sound and brilliant practical man. Machinery development and testing is being done pretty much on the policy of the major automobile companies with "top secret" work going on, some of which will eventually be presented to the golf market as thoroughly and severely tested before getting onto the production line.

Watson Sets Up Research

With Watson in the agronomy phase of the operations is John L. Kolb, a gradu-

ate of the University of Minnesota.

Watson's broad experience as an experimental station scientist and in his relations with course supts. on their courses and in their meetings, before and since becoming associated with Toro, gave him a practical approach to the research problem.

There is no "basic" research at the R&D plant. It takes the basic research of the agricultural experiment stations and colleges and applies it to course operating conditions. Watson is working with Paul Weiss, chairman of the GCSA committee on research, and with Emil Picha and Leo Feser of the Minnesota GCSA research committee.

The turfgrass plots were put in during 1953. By fall good coverage was obtained

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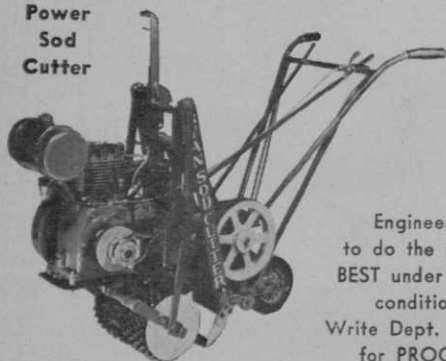
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on the irrigated areas but drought in the summer of 1953 resulted in scanty coverage of the non-irrigated areas and a crop of weeds. This latter condition, instead of being regarded as altogether a loss and disappointment, is operated by Watson as another research project of potential value to many courses.

There are 15 strains of cool season turfgrasses in the plots. There were 16 warm season strains in the plots at the start. Of these three zoysias and two Bermudas survive. Last March the Minneapolis district had 25 below as bottom temperature. The surviving Bermudas came in with other grass sent by Texas A&M. The surviving Bermudas are being sent to Robinson at Tifton, Ga., for breeding experiments.

Management Practices Appraised

The broad principle of the research projects is "the improvement of turf through management practices." There are four major projects:

(A) To determine the efficiency of various types of turfgrass cutting equipment for specific grasses on various usage areas;

(B) To determine optimum fertility levels for specific turfgrasses on various usage areas;

(C) The improvement of turf through selection and breeding of turfgrasses; and

(D) A study of the efficiency of various chemicals used in turfgrass culture.

Subdivisions of these major classifications involve a vast number of subjects covering almost every phase of turf management. This year work has been done by the Minnesota GCSA and Toro on nightcrawler control, poa annua control, influence of copper on peat fairways, and snowmold control.

Mowing Height Tests

Although too early to evaluate conclusively any of the research results, numerous jobs show interesting promise. Among them are the tests on mowing heights. These tests began last year. Generally, indications point to frequency of mowing rather than height of cut being the significant factor on many turfgrasses. Results to date show that when $\frac{1}{4}$ in. to $\frac{1}{2}$ in. of the grasses tested is mowed off the grass remains in robust condition but when 2 in. or 3 in. are whacked off at a cutting many grasses are seriously injured.

Watson is reporting on the work at the station as he makes the rounds of the superintendents' sectional meetings.