

Prepare Your Own Topdressing

by BRAHM P. VERMA

TOPDRESSING used for greens is a mixture of two or more particulate materials. A machine is described by which topdressing for golf course greens can be prepared. The machine can also be used for preparing all soil mixes used in the construction of greens.

The operating principle of the machine is shown by a schematic diagram in the figure. The principal components of the machine are hoppers for each material, a conveyor belt on which mixing is performed, and a rotary mixer. The materials are metered through the hoppers onto the belt to form a traveling ribbon of materials to be mixed by the rotary mixer. The rotary mixer intercepts the ribboned materials and makes it airborne

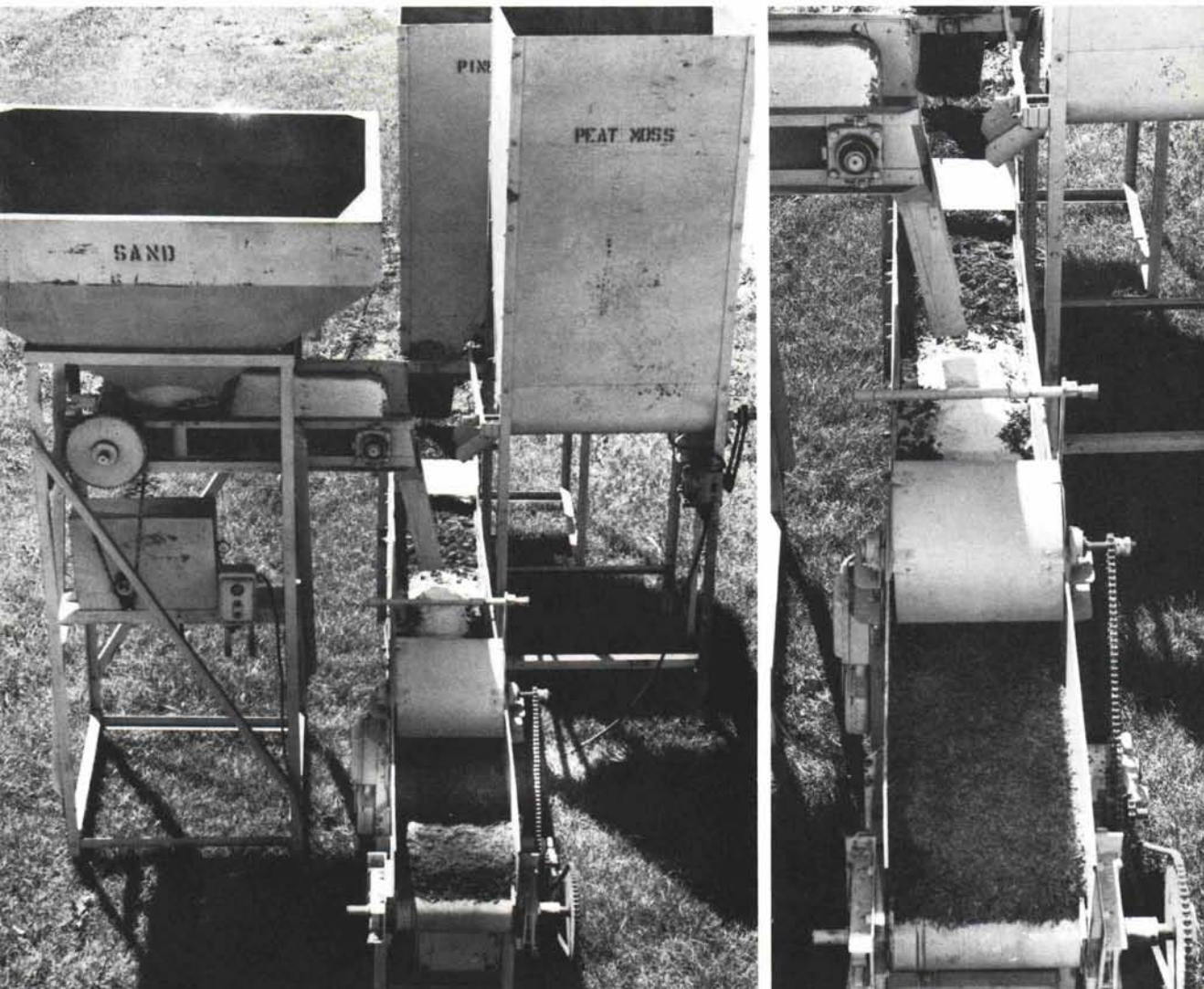
resulting in uniform mixing. The mixed material is discharged on the other side of the rotary mixer and deposited on the belt. The belt conveys the mixed material to a desired location.

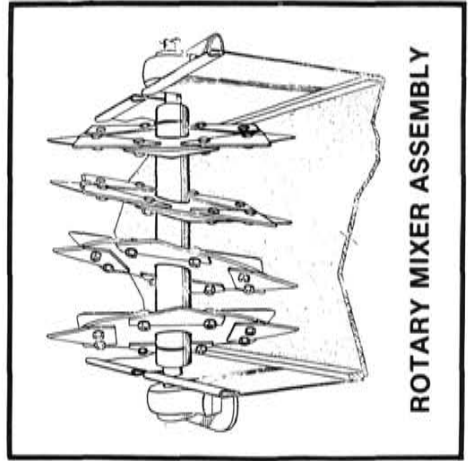
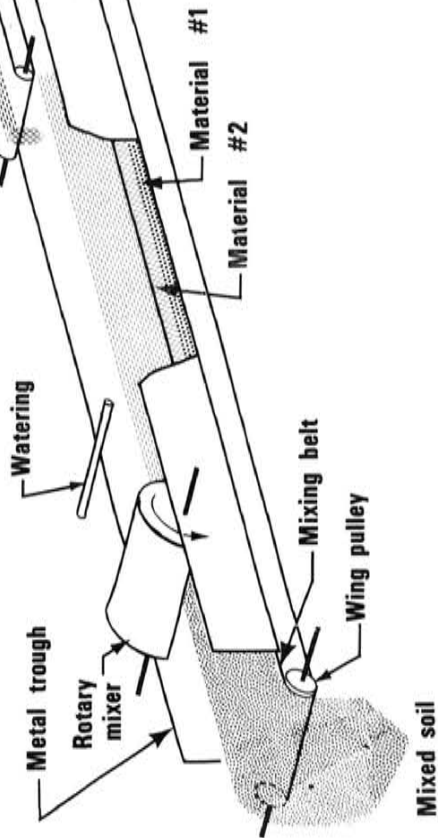
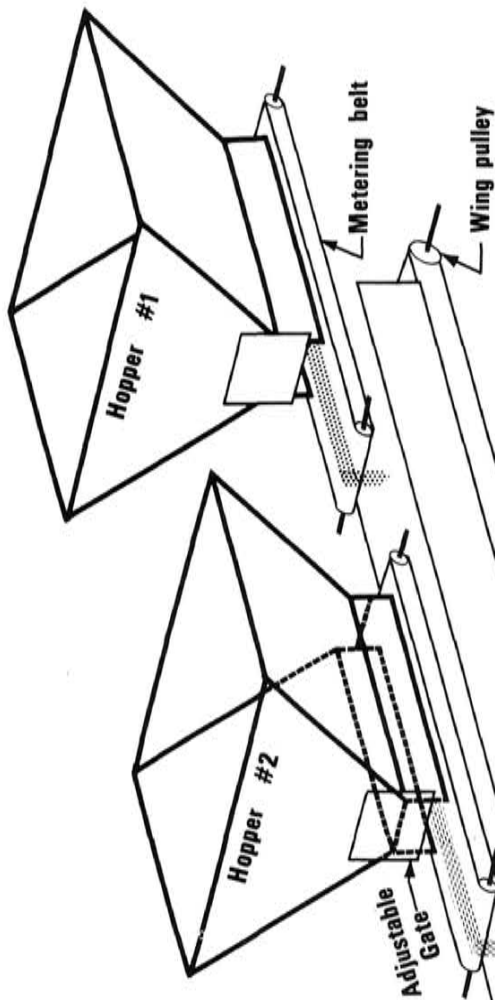
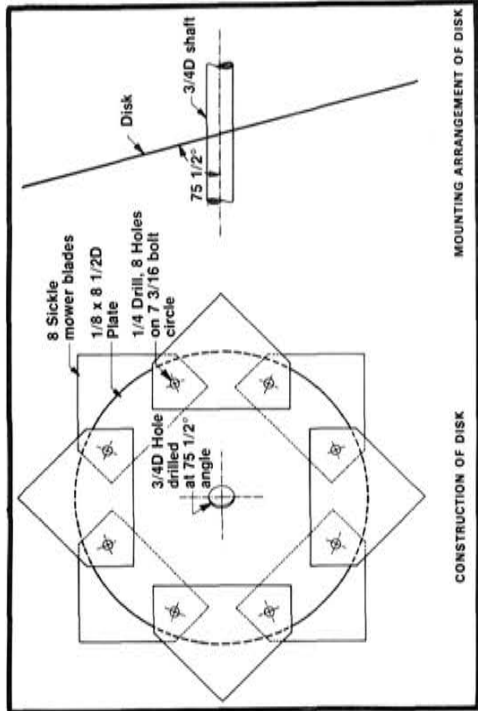
CONSTRUCTION

Construct a sheet metal trough, 12½ inches wide, 15 feet long and 8 inches deep. Mount a wing pulley at each end for the belt in a manner so that the belt is supported by the bottom of the trough. Use a 12-inch-wide belt of appropriate length and mount it over the pulleys. Support the entire assembly on legs at desired height.

Starting from one end of the trough, mount the hoppers so that the discharged material from each

The mixing machine with a closeup view on the right of the conveyor belt.





SCHEMATIC DIAGRAM SHOWING OPERATING PRINCIPLE

Brahm P. Verma, Georgia Experiment Station, Experiment, Ga. 30212

is distributed evenly over the width of the belt. The coarsest material should be deposited first. The number of hoppers used will depend upon the number of materials to be mixed. Use the first hopper (discharging material to form the bottom layer) for the coarse material.

The hopper design should be such that the slope of the walls does not exceed more than 30 degrees from the vertical. Most of the materials flow well when they are not wet. In general, sloped-wall bottom-unloading hoppers will provide an uninterrupted flow of materials. A hopper design is shown in the figure which can be used for metering materials. The metering rate can be changed by changing the gate opening and/or by changing the metering belt speed. A vibrator on each side wall may be used if one anticipates using wet materials, especially sand. A perforated pipe may be mounted over the belt to add water to the materials if needed for good mixing.

The main component of the machine is the rotary mixer. The mixer is constructed by mounting four 11 $\frac{3}{4}$ -inch-diameter discs, three inches apart, on a $\frac{3}{4}$ -inch-diameter shaft at 75 $\frac{1}{2}$ degrees from the axis of the shaft. The disc mounting should be phased over a 90-degree turn of the shaft for balanced loading. The mixer assembly

should be positioned so that the tips of the blades have an $\frac{1}{8}$ -inch clearance over the conveying belt. The construction of the disc is shown in the figure. A metal shield should be constructed to cover the mixer and to direct the airborne material on the belt.

Two electric motors will be needed to drive the metering belts, the mixing belt and the rotary mixer. One motor will be needed to drive the mixing belt and the mixer. The belt speed should be approximately 30 feet per minute for a mixer speed of 350 rpm. The hopper belt speed will depend upon the type of mix desired. A drive train should be constructed to interconnect all the hoppers so that a single electric motor can drive the metering belts.

For safety, place appropriate shields around all moving parts. Construct a control panel and mount all the motor switches at a convenient location.

The mixer blends materials to form a very uniform soil mix. The capacity of the mixer can be easily changed by increasing the metering rates and increasing the speeds of the mixing belt and the rotary mixer. At the speeds recommended above, one should expect a mixing rate of approximately 12 cubic yards per hour.

Brahm P. Verma, Associate Professor, Department of Agricultural Engineering, University of Georgia, Georgia Station, Experiment, Georgia 30212. Tel. 404/228-7217.

POA ANNUA Bulletin Now Available

We are pleased to announce that the new bulletin *Annual Bluegrass (Poa annua L.) — Description, Adaptation, Culture and Control* will be released in December, 1977. This bulletin was prepared by James B. Beard, Professor, Texas A&M University (Editor); Paul E. Rieke, Professor, Michigan State University; Alfred J. Turgeon, Associate Professor, University of Illinois; and Joseph M. Vargas, Associate Professor, Michigan State University.

A major portion of this work is the result of a seven-year study supported by the USGA Green Section Research and Education Fund, Inc. This is the first comprehensive research study on annual bluegrass since 1937 and is another example of the USGA's interest on behalf of golf and its Member Clubs, through its agronomic arm, the Green Section. *Poa annua* is the most controversial of all grasses found on golf courses. Many superintendents promote and encourage it while others loathe

and attempt to eradicate it. *Poa annua* is found on golf courses in all parts of the nation.

Included in this work is a section prepared by the Green Section agronomists that deals with cultural programs designed to maintain *Poa annua*. There is also a section devoted to *Poa annua* control measures for those who work towards its eradication.

Two copies of this important bulletin are being mailed to every USGA Member Club; one addressed c/o of the Chairman, Green Committee, and one addressed to the Golf Course Superintendent, with the recommendation that one of these copies be made a permanent part of the Green Committee file at the club.

We are pleased to have this opportunity to participate in this extraordinary research bulletin as an example of how your USGA research money is being spent in the interest of better golf through the Green Section's golf-related research program.