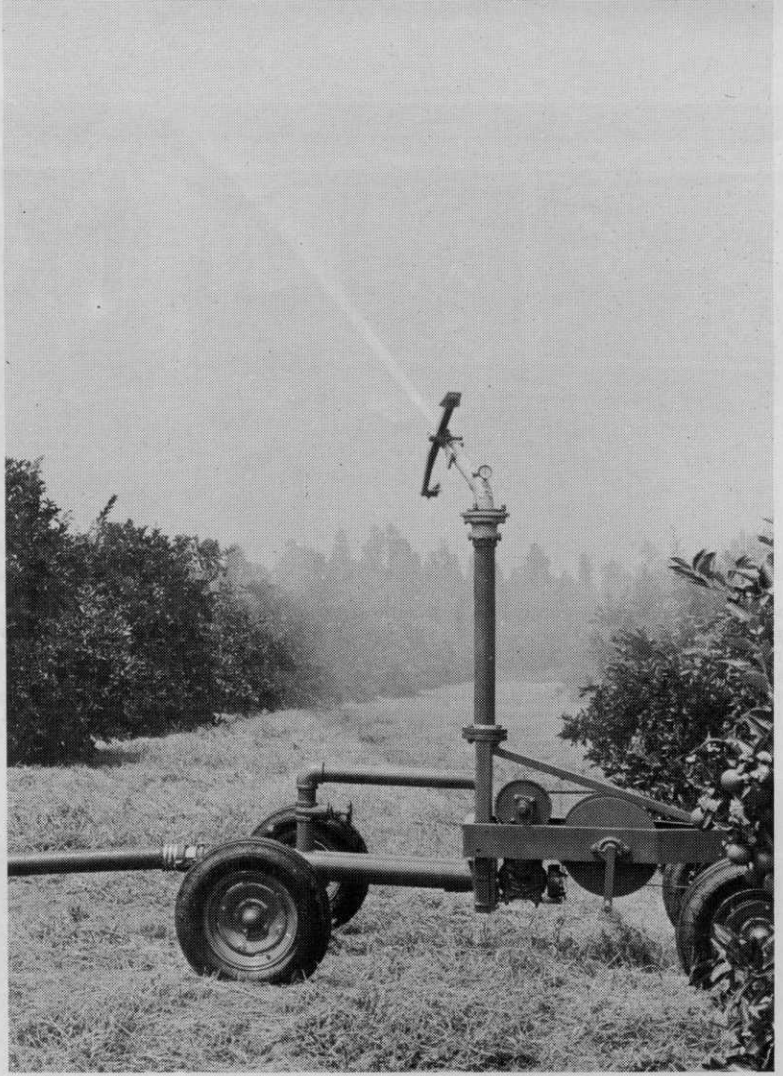


As the water gun atop the Turbo-Rain unit revolves, it lays down as much as 500 gallons of water a minute. It will operate unattended for hours at a time, advancing across a field according to a preset speed.

Turbo-Rain Gives 24-Hour Unattended Large-Area Irrigation

By EDWARD G. DICKSON
Hialeah, Fla.



AN IRRIGATION device which literally walks itself across a field — unattended — while a water gun mounted atop it sprays up to 500 gallons of water a minute is being introduced to a variety of agricultural uses.

Turbo-Rain, built in Winter Haven, Fla., to help alleviate the critical manpower problem of the citrus industry, is being used, too, in other

activities — to irrigate row crops of many kinds, and pastures. At least one unit has been sold for irrigating a sod farm. Conceivably, its builders say, it could be a water source for a variety of turf locations, including parts of golf courses.

Once harnessed by "mobile pipe" to a water pumping station and with its guide cable anchored in the ground ahead of it, the Turbo-Rain

will operate without an attendant for hours at a time. Its forward speed and the amount of water it lays down can be determined at the outset by a valve adjustment. It will operate at night as well as during the day, the makers say.

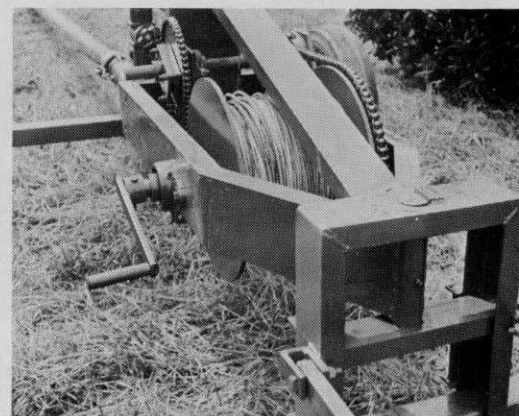
Turbo-Rain is manufactured by Hydro Equipment Co., headed by Richard P. Georges. According to Sales Manager John W. Baker,



John W. Baker, sales manager, points to Turbo-Rain design features — a water turbine and gear box. The gears are driven by the turbine and pull the wheeled machine along a long steel cable.



Forward movement of the Turbo-Rain can be adjusted with this by-pass valve. The valve regulates the amount of water passing through the turbine, thus changing the "walking" speed of the machine.



The steel cable on which the Turbo-Rain "walks" itself is reeled in on this drum, at the forward end of the irrigation machine. The end of the cable is anchored in the ground.

about 200 units of the irrigation machine are in use. Some have been shipped as far away as Argentina.

The irrigation system, he said, is being used in the peanut fields in Georgia, on vegetables in California and Michigan, on grain fields in the Midwest, as well as in the Florida citrus groves. One sod farm in Georgia has purchased the equipment, Georges said. A Florida horse farm is using it for pasture.

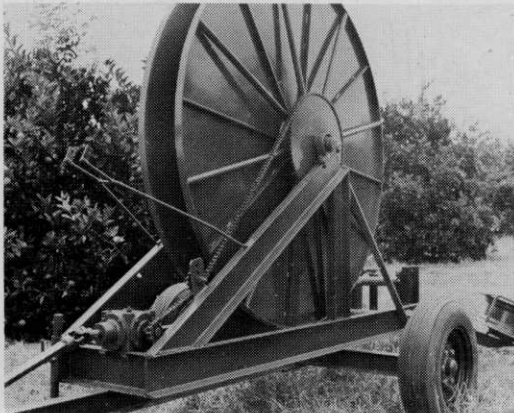
There is a common denominator in all these uses—to provide irrigation without requiring a workman in constant attendance and without having to install a permanent system.

An ideal application, Baker said, would be a square 40-acre field of reasonably level ground and uninterrupted straightaway runs for the Turbo-Rain.

If this field were broken up into four areas, each 330 feet wide and 1,320 feet long, the Turbo-Rain could make a pass through one of these areas in 12 hours comfortably. For example, this strip could be watered during the night without any supervision except at the start. It would shut itself off at the end of the job.

Key feature of the machine is the water turbine. Water from the pump enters the turbine from the hose which connects the pump and the machine. The turbine action turns gears in an attached gear-box. These gears, in turn, pull the machine along a 1-4-inch galvanized cable, 1,400 feet long, which is anchored in the ground ahead of the Turbo-Rain.

A by-pass valve, which controls the amount of water going into the turbine, makes it possible to vary the forward movement of the machine from 6 to 60 inches a minute. The water gun has a 1¼ nozzle and has maximum water coverage of



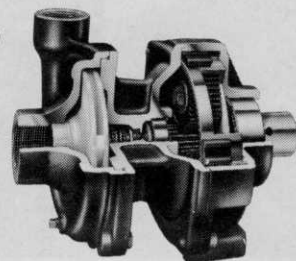
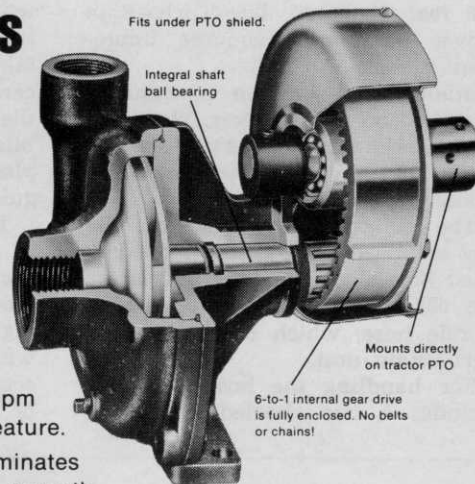
This is the hose reel unit operated from the power-take-off of the pulling vehicle. This unit is owned by Green Swamp Grove of Harmon Brothers, Winter Haven, Fla.

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500 feet diameter. The Turbo-Rain moves on four pneumatic implement tires.

Maintenance on the machine is slight, according to Baker. There are five grease fittings to service and the grease in the gear-box must be changed periodically.

The pumping equipment can be any standard type. The water flow must be reduced to four inches for the 630 feet of non-stretch 4-inch mobile hose, which reaches to the Turbo-Rain unit.

For handling the hose, the unit includes a two-wheeled hose reel,

which can be pulled by a tractor or truck and is operated by power take-off. It can lay the hose in the center of the row or at the side of the row. Also for handling the mobile hose are two capstands, usually placed at the ends of the runs to guide the pipe on turns.

The company also makes a model of the Turbo-Rain for groves or orchards with tall trees. On that model the water gun is located much higher and the machine is equipped with counter-balancing tanks to compensate for the greater height of the unit.

Hydro Equipment Co., is a division of Superheater Sales Co., which produces a crop protection system.

National distributor (outside of Florida) for Turbo-Rain is Ames Irrigation Co., of Gainesville, Fla., a division of Rucker Co., of Oakland, Calif.

Tree Odor May Help Solve Air Pollution

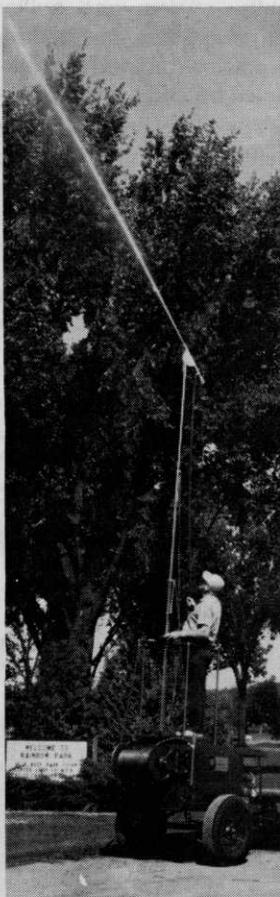
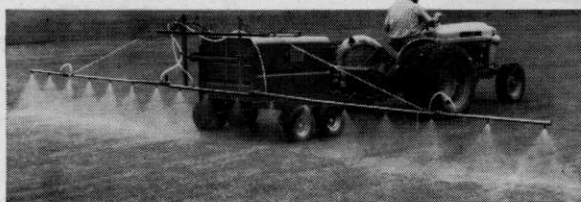
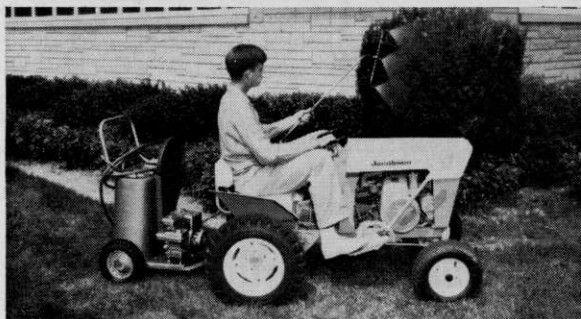
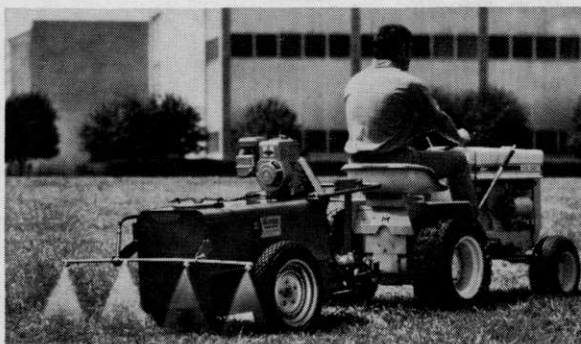
Strange as it may sound, the taste and smell of trees may provide the key to solving many of the problems man faces today.

James Hanover, associate professor of forestry at Michigan State University, says that leaves and stems of trees give off vapors which often result in a unique odor associated with individual trees, species and large forests.

Only recently, the potential significance of these vapors for problems of insect attraction, human allergy, atmospheric contamination and ecological regulation has been realized.

An instrument called the gas chromatograph, which is far more sensitive than the human nose, is being used to measure tree odors and determine their chemical composition. Further study of the different odors given off by different trees will give insight into specific ecological problems.

"Corresponding measurements of the 'taste' of internal chemicals of tree tissues are also being conducted," says Hanover. "Eventually, the chemical codes which determine whether certain trees are resistant or susceptible to damaging diseases or insects may be unraveled and used to improve the environment."



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