

Irrigation

Many turf specialists are suggesting irrigation has been misused, especially in the north and northeast. Battles with *Poa annua*, bentgrass in a stand of bluegrass, and turf disease are thought to be related to misuse of water. Much research on healthy irrigation levels for turf is needed. The practicality of using irrigation systems for chemical applications needs to be considered more seriously. This might well be a reason to install or upgrade an existing irrigation system since coverage would be critical for such use. Wetting agents may be one of those chemicals applied to improve the utilization of water by the turf.

Use of effluent or even city water may prove more economical than drilling a well or building a lake. In some areas, an extra meter can be installed on the system and sewerage treatment fees deducted from the water bill. If use is limited to necessary times water use can be curbed.

Mowers

Hydraulics have gained a strong position in the mower market. Original resistance caused by extra

maintenance for hoses and pumps is being overcome. Use of larger mowers is more practical due to hydraulics. Transporting large mowers no longer requires stopping the mower to pick up side units.

Hydraulics have helped the use of flail mowers for turf. Manufacturers offer fine edged blades for flail mowers. Benefits are said to be reduced blade sharpening and adjustment.

Hydraulic reel mowers offer an alternative to PTO driven versions or wheel driven versions. Gangs provide the extra flexibility of freeing the tractor for other jobs. Rotaries remain the modern workhorses due to high maneuverability and low maintenance. Hydraulics have eased some of the problems with belts on rotaries.

The sickle bar mower has slowly faded into almost strictly agricultural use.

Seeders/Spreaders

The technology of seeders and spreaders has not abandoned the drop spreader, although broadcast and hydraulic seeders are dominating commercial use.

Convenience of size and speed of ten outweigh the accuracy of the drop spreader. Broadcast spreaders throw a wide swath of material in a short time. Distribution is less uniform, however. Large broadcast spreaders have greatly increased the practicality of topdressing with sand.

The hydraulic seeder quickly solves large seeding jobs. The seed can be applied with the fertilizer and mulch at one time. Blowing straw becomes unnecessary. Seeding rates are higher but instant protection against weather is provided and the job is completed quickly. Mulch quality must be carefully watched. Always use the well-known brands to avoid problems.

Verticutter

More aggressive Kentucky bluegrasses have increased the need for vertical mowing. Increasing popularity of overseeding and topdressing also encourages the use of vertical mowers. Like the aerifier, the verticutter is used only occasionally. Combined with turf vacuums, verticutting can be a fairly quick form of turf improvement. Verticutting large areas remains a

EQUIPMENT

The Toro Company

Toro began as the Toro Motor Co. in 1914 when the Minnesota-based operation was commissioned to build engines for a manufacturer of farm machinery. It turned from its agricultural orientation in 1922 when the golf course superintendent of a local course suggested the company design a tractor-towed gang mower for fairway maintenance. By 1925 Toro turf maintenance machines were in service on nearly every major golf course in the country and on parks and large estates as well.

Toro produced its first power mower for residential use in 1939 but it was not until 1945 when it began to move into the home lawn market. Through a combination of acquisitions and research and development Toro began to expand operations around the country. Plants now exist in Bloomington, Windom, Shakopee, Fairmont, and Willmar, MN; Tomah and Hudson, WI; Riverside and San Marcus, CA; Columbus, OH; and Mason City, IA.

The company entered the rotary mower market with the purchase of Worldwind Inc. in 1948. Soon after Toro developed its wind tunnel housing, a major step in its technological growth. Toro was the first manufacturer to develop a mower with electric starting, the first to offer a rotary lawn mower with a bagging attachment, and led the way in establishing safety features for mowers.

Toro entered the snow thrower market in 1951, a major step in transforming the company from a seasonal business to a year-round supplier. It pioneered the development of compact, lightweight snow throwers and is now the leading manufacturer of snow throwers.

From snow equipment, Toro expanded into the irrigation field with the purchase of Moist O'Matic in 1961. Toro made extensive use of plastic in place of metal for irrigation equipment. Other innovations in irrigation include valve-in-head sprinklers, rotary gear driven sprinklers capable of sending a stream of water a diameter of 150 feet, pop-up pop-down sprinkler heads which virtually eliminate vandalism, and vibration-free easy-to-service sprinkler heads for all types of farm irrigation.

In 1979, Toro entered the lawn care service with the acquisition of Barefoot Grass, Columbus, OH. Its consumer yard care line which included both rider and walk-behind mowers has been broadened in recent years to encompass tillers, lawn debris pickups, flexible line trimmers, garden hoses, chain saws, and other outdoor appliances.

Toro's line of turf maintenance equipment ranges from a 21-inch walk-behind rotary mower to the giant HTM 175 that operates up to seven reels hydraulically and mows up to 80 acres a day. A total of 56 distributors in the United States and 56 in the rest of the world distribute Toro products.