



DERBY IS THE BEST OF THE LOT ... BY A LOT

Derby is the leader in the new generation of turf-type ryegrasses because it performs so well in an endless variety of situations.

It was tough enough for the turf at the Rose Bowl and Super Bowl XIV, and yet it produces a dense, even surface when cut consistently to 3/16th inch on a golf green.

A dark green beauty, it is heat and drought resistant, has excellent cold tolerance, responds rapidly to fertilization and mows beautifully.

In Northern areas Derby is a natural for permanent turf including tees, greens, fairways, parks and playgrounds, playing fields and home lawns, while it is considered a premier overseeding grass in the Southern U.S.

Derby Turf-type Perennial Ryegrass

- Germinates in less than a week under ideal conditions
- Thrives when cut to one inch or less on tees and fairways
- Mixes nicely with the fine fescues and bluegrass, retaining its good looks when cut to 1½ inches
- Persists in heavy, compacted, poorly drained areas where traffic is not intense
- Tolerates a wide range of soil types from heavy clay to sandy

Derby is registered with the Plant Variety Protection Office.

PVPA No. 7500009

A Product of

INTERNATIONAL SEEDS, INC.

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EQUIPMENT

Jacobsen Division of Textron Inc.

A couple brothers, Knud and Oscar Jacobsen, and AJ Dremel founded the Jacobsen Co. in 1921 with the development of the "Four Acre," a lawn mower which could cut four acres in one day. This machine weighed 275 pounds and sold for \$275. The following year, the founders took back all 75 pieces that were sold and checked and reconditioned them to make sure they were working smoothly.

The Four Acre was the first mower with an engine designed for parks, cemeteries, and other heavy-duty operations. The second Jacobsen model arrived in 1923, called the "Estate." The next year the company introduced the first cast aluminum, power engine greens mower. Golf course superintendents hesitated to use the greens mower but soon realized it was ideal for cutting bentgrass.

The industry's first automatic recoil starter came out of the Jacobsen workshop in 1928, the same year the company unveiled its own fairway gang mower. That year Einar Jacobsen, Knud's son, joined the company and later became president.

In the years following, the company introduced many firsts to aid those involved in turfgrass maintenance: the first polyethylene grass catcher; the first mower with four reversible, replaceable, retractable blades from rotaries; the first with pneumatic tire equipment; the first mower with hydraulic tri-plex screens; and the first out-front hydraulic fairway mower.

Before 1929, someone cutting turf of any expanse had to walk behind the mower. Thus Jacobsen saw the need for and invented the sulky, an interchangeable riding attachment for power mowers.

In the spring of 1939, the company introduced the Lawn Queen for \$87.50. It was the first homeowner-type power mower for lawns and cut an 18 or 21-inch swath.

Jacobsen bought the Johnston Lawnmower Co. in Otumwa, IA, which built all-steel hand mowers. World War II halted lawn mower manufacturing for all but a few companies and Jacobsen built generators and other defense equipment for the Army.

The company continued to develop more products for golf courses and homeowners and in 1953 introduced power snow removal equipment to its line of other products. Jacobsen merged with the Allegheny Ludlum Co. in 1969 and two years ago Textron Inc. bought Jacobsen from Allegheny Ludlum.

correctional drainage unnecessary. On the other hand, improvements in trenchers and the development of flexible plastic drain tubing have greatly reduced site disturbance and installation cost. Very few good farmers have yet to tile their fields. Turf managers should follow suit realizing the installation cost can be recouped in better drained and playable turf. Drainage also provides the manager with better control over the environment of the turf. Excessive surface moisture encourages disease and *Poa annua*. A savings in fungicides and herbicides is a possible result.

Fertilizers

The most recent development in fertilizers has been liquid formulations of ureaformaldehyde. Sulfur-coated urea preceded liquid UF.

The latest intent of chemical manufacturers has been to provide convenient nitrogen sources for applicators of liquid materials for turf, primarily the lawn care market. Their developments could be applied to fertigation, an area of large potential for well-irrigated turf areas. Liquid lawn care to golf courses has not proven practical so far.

Granular fertilizers remain the dominant nitrogen source. Some dry materials are available in a form suitable for liquid application.

Slow-release fertilizer technology currently exists which enables managers to reduce the number of seasonal fertilizer applications.

Combining fertilizer with insecticides and herbicides to reduce the number of applications is desirable. Large users may economize by buying quantities of individual chemicals and mixing them. This is simpler in liquid form. Buying custom blended dry products is less economical. Distribution of dry materials from broadcast spreaders may not be even if particle sizes and weights vary considerably.

Guidelines to mixing various dry materials to consolidate applications would be well received.

Growth Regulators

If you remember that growth regulators were actually the materials used to develop herbicides from, you wonder why they haven't progressed more than they have. Scientists have worked decades to reduce the yellowing effect of most growth regulators on turf. Managers

of fine turf still hesitate to use them. Establishing low maintenance areas will encourage the use of growth retardants for roughs, roadsides, and parks.

Herbicides

The biggest headache in selective weed control remains grassy weeds such as yellow nutsedge and *Poa annua*. Basagran is registered for nutsedge but must be used with care to prevent burning desired turf.

Some specialists say we create our own weed problems with excessive fertilization and irrigation. Adjusting these maintenance practices should then help.

Properly timed use of preemergence herbicides certainly reduces postemergence treatments. Weed control is one of the areas that can benefit the most from integrating management practices. Keeping a good eye on the turf to identify problems early is advised, as is eliminating adjacent weed seed sources. Renovating a nearby field to tall fescue may be cheaper than endlessly fighting airborne weed seed. Hand removal of a few isolated weeds may eliminate the need for large area treatment later.

EQUIPMENT

National Mower Company

The historical flavor of the mower market can be sensed from the background of the National Mower Company of St. Paul, Minnesota, and its founder Robert Stanley Kincaid.

Kincaid received his degree in mechanical engineering from Purdue University in 1908. He grew up in Kentucky and appreciated the beauty and needs of turfgrasses. Kincaid's father became ill at the time of Stan's graduation and was hospitalized in Rochester, Minnesota. Since he hadn't yet taken a job, Kincaid decided to look for work in the Rochester area. He took a trolley to Minneapolis. When the conductor asked for additional fare he got off to look around. He noticed a manufacturing plant across the street and decided to check the company for job opportunities.

Although he was an engineer, he accepted an apprenticeship at the plant for \$1.25 per day. That company was Gas Traction Company, the first manufacturer of gasoline powered tractors in the world. Engineering developments there were applied to nearly all gasoline tractors to be built in the next 20 years.

Kincaid later worked in cooperation with John

Deere, the early founders of Toro, and Briggs & Stratton. The northern central states were a hotbed of gasoline powered tractors in the teens. In 1916, a demonstration of tractors from Ford, International Harvester and others was held in Nebraska. The conversion from steam to gasoline was now certain.

At this same time Kincaid began experimenting with gasoline-powered reel mowers. He developed a 40-inch mower for estates and helped solve early engine lubrication problems. All efforts were directed at war for the end of the decade.

In 1921, two years after he returned from the war, Kincaid began making small numbers of gasoline-powered mowers. He always resisted fancy and unnecessary cowling and concentrated instead on the engineering strength of his mowers. Gradually he built up production and his son John joined him.

Today, National makes some of the most rugged riding reel mowers in the business. These mowers had their origins with Toro's Bull Tractor and continue to play a growing role in mowing of fine turf. Kincaid strongly believes in doing a few things well rather than many things poorly.

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.