



# What do turfgrass experts say about Pennant\* ryegrass?

The Turf Trial results speak for themselves. Pennant is a champion. Rigidly controlled, comparative testing involving Pennant and competing varieties of perennial ryegrasses were conducted by turf experts across a broad region of the U.S.—the Pacific Northwest, the Southwest, the Northeast.

In other tests, Pennant topped many of its competitors in overseeding in Southern Arizona, and in heat tolerance in Southern Texas. Some of their findings are illustrated below.

Turf performance scores. North Brunswick, N.J., 1975-78. (9 = best)

PENNANT	6.3
CITATION	5.9
DERBY	5.4
PENNFINE	5.4
MANHATTAN	5.2
LINN	2.7

Reaction to brown patch disease (Rhizoctonia), Adelphia, N.J., 1978. (9 = least damage)

PENNANT	7.5
YORKTOWN II	7.0
CITATION	7.0
REGAL	6.3
DERBY	6.2
PENNFINE	5.8

Warm and cool season average turf score, Southern California first-year tests, 1979.

	Poor	Best
PENNANT	[Bar chart showing high score]	
PENNFINE	[Bar chart showing high score]	
DIPLOMAT	[Bar chart showing high score]	
YORKTOWN II	[Bar chart showing high score]	
MANHATTAN	[Bar chart showing high score]	
CITATION	[Bar chart showing high score]	

Turf performance scores, Hubbard, OR., 1978-79. (9 = best)

PENNANT	7.7
YORKTOWN II	7.0
REGAL	6.6
MANHATTAN	6.5
PENNFINE	6.4
CITATION	6.0

Average Reaction scores to red thread disease (Corticium fuciforme), Hubbard, OR., 1979. (9 = least disease)

PENNANT	6.0
FIESTA	5.9
DERBY	5.9
PENNFINE	5.9
DIPLOMAT	5.5
MANHATTAN	4.9

Reaction to brown blight disease (Helminthosporium), Hubbard, OR., Dec. 1977 and Feb. 1978 samplings. (% diseased).

PENNANT	10.0%
YORKTOWN II	13.7%
MANHATTAN	18.1%
DERBY	19.7%
PENNFINE	25.0%
CITATION	35.4%

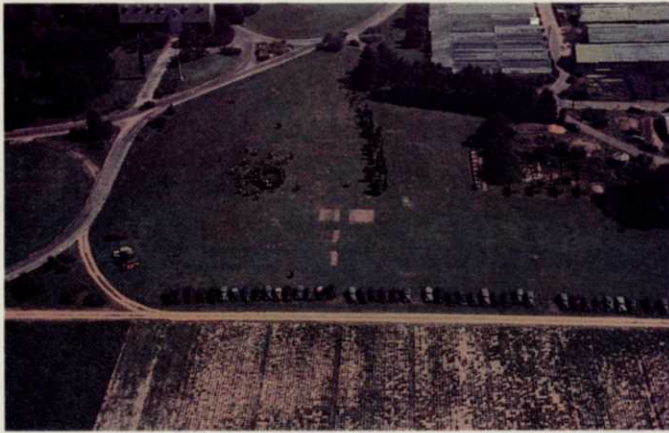
Pennant was also found to maintain its excellent turf color and quality late into the season. Pennant will impress you with its rich, moderately dark green hue, its fine leaf blades, and its improved mowing properties. We call it "The Trophy Turf". We think you will, too.



**AgS**

For additional information regarding Pennant's truly remarkable Turf Trial performance, contact: Agriculture Service Corporation, P.O. Box 101, Harrisburg, OR 97446, Telephone: (503) 995-6124

\*Plant variety protection pending and anticipated



Arlington Turf Gardens prior to the construction of the Pentagon (left). Turf plot in front of administration building at Beltsville, MD. (right). Photos by F. V. Grau.

vice in 1936, the government bought up the excess seed and distributed it across the United States in carloads. As late as 1946, there were farmers who had picked up carloads of surplus seed in 1936 and were still trying to sell it to seed companies."

During the stripping process, green seedheads were removed, and laid out in fields to dry. Perhaps half the seed would be good after this process and germination rates were considerably lower than the 90% rate common today. Overall, production in this fashion could generate 20 million pounds of common bluegrass in a year.

Representatives of these seed companies used to meet each year to gauge production and estimate value. This group eventually became known as the Better Lawn & Turf Institute (The Lawn Institute) which now represents many turfgrasses to users.

Common bluegrass is still in demand today. Park common Kentucky bluegrass is still produced in Minnesota and the Dakotas. Of course, there are large producers of Common Kentucky bluegrass in Kentucky, the largest is Robert Dye Seed Ranch in Pomeroy, Washington. Nearly twice as much public and common bluegrass is produced annually in the United States as proprietary Kentucky bluegrass.

By far the most productive area in the U.S. today for grass seed is the Pacific Northwest, the states of Idaho, Oregon and Washington. In the mid-40's, the Jacklins and a few others promoted the improved purity of grasses grown in the Northwest and the better yields per acre allowed by temperate weather. Many offtypes of grasses existed in the Midwest because grasses had a 200 year lead on introduction there.

Modern seed production practices

evolved in the Pacific Northwest. Arden Jacklin, after leaving the Soil Conservation Service, and helping convince his father and brothers to risk part of their vegetable farming business for the turf seed industry, developed many of the current techniques of row planting of foundation seed, improved roguing the field for weeds and volunteers, windrowing the cut grass, and using combines to pick up and separate seed from the straw.

No one had any exclusive rights to the common grasses. The interest and technology to gather large quantities of seed were centered in the Midwest. As the Northwest proved to be a better area to produce turf seed and improved seed from the Northwest brought a considerably higher price, Midwestern seed companies specializing in stripping slowly faded away.

Of course, another major factor in the development and production of improved varieties was the seed company. A look at the incorporation dates of nationally known seed companies reveals these groups:

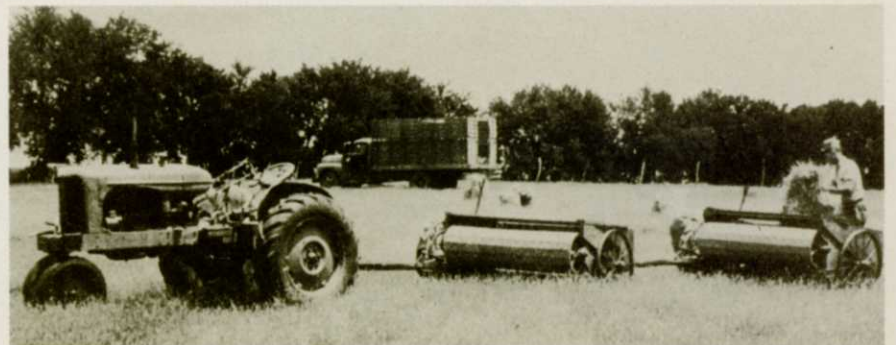
- local seed store selling garden, agricultural and grass seed to a community. Some of these include Adikes (1855), Northrup King (1884),



Green seed windrowed in curing yard in the Midwest during common bluegrass production.

Stanford (1910), Rudy Patrick (1911), O. M. Scott & Sons (1870), E. F. Burlingham (1921), and Lofts (1923).

- early recognition of new market potential for turf seed. Some of these include Jacklin (1935) and Warren's (1938).
- created due to new protection by 1970 Seed Act. Some of these include Agricultural Services (1970), International Seeds (1972), Pickseed West (1969), Turf Seed (1970). Whitney Dickinson (1972), and North American Plant Breeders (1973).



Stripping machines on midwestern field during the 50's. Photos courtesy of The Lawn Institute.



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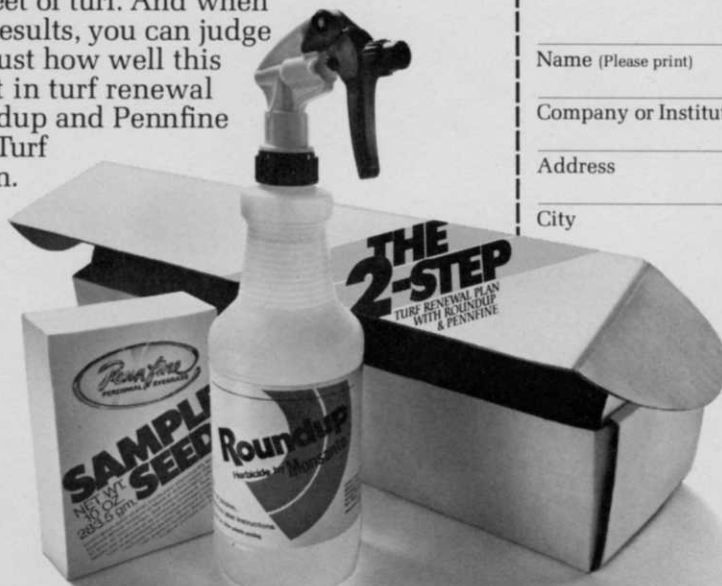
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## THE SEED COMPANY

The structure of the turf seed industry is considered to be in five parts; the breeder, grower, marketer, distributor, and retailer or end-user. A seed company may perform more than one function in this arrangement. For example, Jacklin has a breeding program, owns part of its production acreage, markets the

seed in advertising and at shows, and in some cases acts as the distributor. It also contracts with farmers for production, receives breeding support from universities and other seed companies, and sells bulk to regional distributors. In fact, as part of Vaughan Jacklin Co., its parent company retails the seed.

Scotts, Lofts, Vaughan Jacklin and Northrup King market packaged seed to homeowners. Some companies sell private label seed to chain stores and all companies sell bulk to regional distributors, contractors and garden centers.

Another level of complexity is added in the production, marketing



**Early Lawn Institute Officers** in the late 50's. Shaking hands are Edward Spears (left) of Paris, KN, and William Gassnor of Kingdom City, MO. Bob Schery is on the far right.

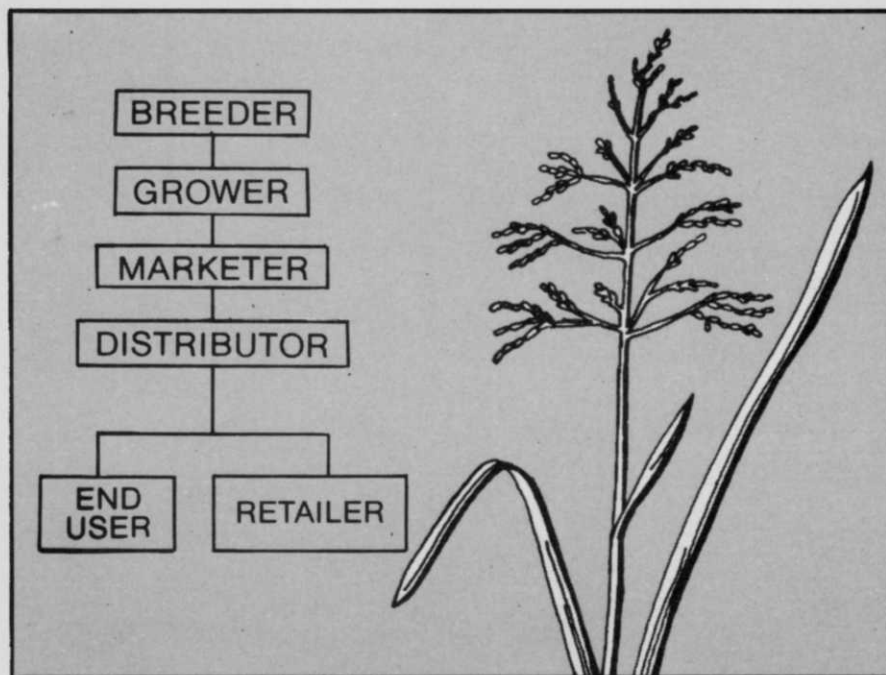
and distribution of European varieties such as Baron, Birka, Sydsport, and Fylking Kentucky bluegrasses. U.S. seed companies go directly or through brokers to European companies and arrange royalties to market European varieties. Barenbrug recently established an office in the Northwest to work directly with growers in production of seed. On the other hand, U.S. companies sell to European seed companies and grow for them under contract.

Commercial interest in producing and distributing turf seed began primarily in the 30's. Regional seed companies such as Scotts, Adikes, Lofts, Stanford, Northrup King and Rudy Patrick realized that recent developments in turf seed collection would create a demand for improved varieties. They treated the turf market for the most part as a special addition to their agricultural seed business.

After waiting patiently through the depression, war years, and most of the 50's, the seed market recuperated with a surge of new varieties. These early companies held the inside track as common varieties were replaced with improved ones. The market looked so good that W. R. Grace purchased Rudy Patrick in 1957 as a growth investment. (Rudy Patrick was also involved with agricultural seeds, so not all of Grace's interest was in turfgrass.) Rudy Patrick had its own development work underway during the late 60's. Dr. Jerry Pepin, a student of Reed Funk and currently research director for International Seeds Inc., did much of the turf seed research for Rudy Patrick during the 60's. Jim Carnes, co-owner of International Seeds, was director of specialty turf.

After a turfgrass is judged to meet quality and seed production standards, a process begins to generate seed for production. Research work may have generated less than 10 pounds of breeder seed. This breeder seed is taken by special growers and planted to produce foundation seed. It may take two or three years to produce enough foundation seed to meet the demand of the growers of the final product, certified seed. Purity is extremely important in all phases of seed production, but especially important during production of foundation seed from breeder seed. It is the foundation seed that is planted to produce the certified seed for market.

Early growers of foundation seed were Otto Bohnert in Oregon and the



Geary Brothers in Oregon. These two growers took four pounds of Merion breeder seed, which Penn State had produced from a thimbleful of seed saved by Fred Grau when the Pentagon forced the move of the Arlington Turf Gardens. They have performed similar roles with other improved varieties. Otto Bohnert was also the first grower of Newport and Penncross.

Today, breeder and foundation seed is produced under control of the seed companies owning the proprietary rights.

Disenchanted with the seed market, W. R. Grace began to divest itself of its seed companies in 1970. As a result, research locations of Rudy Patrick were purchased by investor groups, Northrup King, Olin Corp., and Nickerson, a British concern. The result was the creation of three new seed companies and the acquisition in 1972 of Rudy Patrick seed facilities in the Northwest by Northrup King and the formation of Tee-2-Green Corp. to market Penncross.

Olin Corp. and Nickerson jointly acquired most of Rudy Patrick's Kansas City facilities and created North American Plant Breeders in 1973. Jim Carnes and Willard McLagan (A prominent seed grower) purchased the Halsey, Oregon facilities of Rudy Patrick and created International Seeds, Inc. in 1972.

The third company to come out of this divestiture was Whitney-Dickinson of Buffalo, New York by an investment group including E. L. Townsend and E. J. Glatty.

As a result, Whitney Dickinson gained marketing rights to Manhattan perennial ryegrass, and North American Plant Breeders, International Seeds, and Northrup King divided much of the research work with perennial ryegrasses, bluegrasses and fescues developed by Rudy Patrick.

Another firm established in the 70's, and just beginning to enter turf seed marketing, is Agricultural Services of Oregon. Its perennial ryegrasses Pennant, Premier and Pronto were developed in cooperation with Reed Funk at Rutgers. John Rutkai and Dave Amoth formed the company in 1973. According to Rutkai the extensive breeding advances in the U.S. turfgrass industry will shorten the commercial life of most varieties, creating new introduction more quickly.

Turf Seed of Hubbard, Oregon, was created in 1970 by another Rudy Patrick marketing specialist, Dick Bailey, and Bill Rose, a big producer of Merion seed and president of the Manhattan Ryegrass, Penncross Bentgrass, and Exeter Bentgrass associations. Rose had produced the first foundation seed of Manhattan.

Originally the company concentrated on Merion seed production and Manhattan perennial ryegrass as comarketers with Whitney Dickinson of Buffalo, New York. In 1975, Bill Meyer joined Turf Seed as full-time researcher to improve seed yields of current varieties and create new varieties. Meyer created Pure Seed Testing and played a major role in the introduction of Shasta

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## Distributors

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The Terre Company  
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and Columbia Kentucky bluegrasses; Citation, Omega and Birdie perennial ryegrasses; and very soon improved types of Merion and Manhattan. This year Turf Seed will produce and market a new tall fescue, Falcon. Turf Seed also produces seed for Warren's A-20, A-34, I-13, and A-20-6A.

From its inception in 1972, International Seeds Inc. took an aggressive marketing position with material acquired from Rudy Patrick and arrangements with Van Engelen and SUBICO of the Netherlands. They have European rights as well as U.S. rights to many proprietaries.

Jerry Pepin moved to International with the Rudy Patrick breeding program and released Derby perennial ryegrass in 1975 and Regal in 1976. North American Plant Breeders markets both Regal and Enmundi Kentucky bluegrass from International.

International has marketing rights to Emerald creeping bentgrass, Highlight chewings fescue, Merit Kentucky bluegrass, and Shasta Kentucky bluegrass. International is co-breeder and marketer of Admiral Kentucky bluegrass. It produces Vantage Kentucky bluegrass for O.M. Scott & Sons.

International Seeds has entered the southern overseeding market with DixieGreen and Sabre, *Poa trivialis*.

International developed America Kentucky bluegrass which is marketed by Pickseed West Inc.

Seaboard Seed Co. was founded in Philadelphia in 1932 as a farm seed company. Following the war, Seaboard entered the turfgrass seed market, and added a branch in Bristol, Illinois. In 1962, the company was merged into Heritage House Products, part of Diamond Alkali Co. In 1965, E.F. Burlingham & Sons went together with Chris and G.H. Valentine, and Alan Hirsch to purchase the turfgrass seed business of Heritage House as well as the Bristol, Illinois facility.

Pickseed West in Tangent, Oregon was created by Martin and Tom Pick, of Otto Pick & Sons Ltd. in Canada and Kent Wiley, son of a seed broker in 1970. Today they have several agronomists on staff and have acquired rights to a number of improved grasses out of Rutgers and Rhode Island. Touchdown Kentucky bluegrass is one of these that has experienced high acceptance in the market. They have just announced production of America, from Rutgers breeding work. America exhibits

good resistance to disease and good shade tolerance. Pickseed is calling America a low maintenance bluegrass. Recently, Pickseed arranged to begin marketing of material from Rhode Island, such as Exeter, Colonnail bentgrass and Kingstown velvet bentgrass.

Of course, many of these companies would not exist today had it not been for the foundation built by the early seed companies. Jacklin, Scotts, Rudy Patrick, Lofts, Northrup King, Stanford, Adikes, Warren's and Burlingham survived and prospered through the conversion from common to improved turfgrasses. They made investments in research and technology when needed to serve the professional turf market as well as the (homeowner market). They worked with universities, anticipated changes in market demand, and seed production technology, and put marketing money behind the new turfgrasses.

Warren's began as a turf nursery in 1938 by Ben Warren near Chicago. Warren's interest was in improved grasses for sod, not so much for seed. He and his staff were primary collectors of new material from golf courses, parks, and lawns across the U.S. His collection work paid off well with the material that contributed to the production of A-20 and A-34.

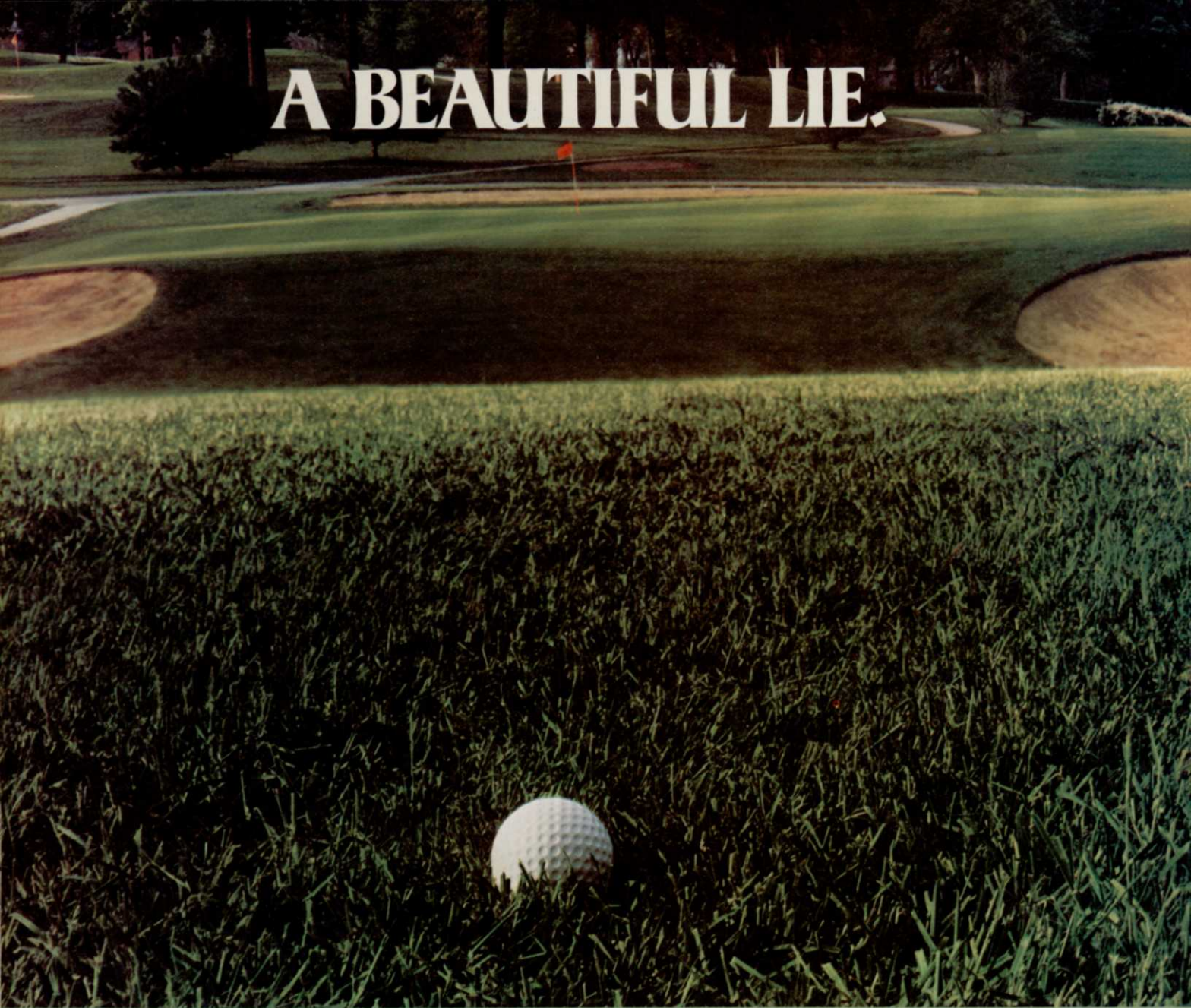
Much of Warren's sod production was by vegetative means and only in the last ten years has Warren's sought to produce seed. Today, Warren's remains a sod producer first, and a seed producer second.

Jacklin Seed Company is a multifaceted company serving both the professional and homeowner markets. It was founded in 1935, by Ben Jacklin and his three sons Lyle, Owen and Arden, in Dishman, WA., originally a grower of seed peas. Arden Jacklin after serving the Soil Conservation Service, convinced his father and brothers to get behind the turfgrass market in the 40's obtaining foundation seed from Otto Bohnert and Ed Geary. Initially, the Jacklins produced some field grasses and creeping red fescue. At that time they had to have the seed cleaned at the only seed cleaning plant in the area owned by Max Hinricks. Jacklin received some of the first foundation seed of Merion and put full effort into production.

It has since provided a considerable amount of production and promotion for various other improved grasses such as Glade, Fylking, Newport, Nugget, Birka.



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