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SCOTTS® RESEARCH

—people dedicated to a greener tomorrow

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It all started with weeds...

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Over a century ago, virtually at the beginning of the industrial revolution, O. M. Scott was dissatisfied with many things as they were, particularly the proportion of weeds in the only farm seeds he could buy. So, although he probably never used the word "research" in his life, he set about finding a way to remove the weed seeds mechanically. When he found it, he decided to make clean seed available to neighboring farmers. In so doing, he founded a business.

He also established the Company's enduring mission: the improvement of greenery. Though at first it was concentrated on helping the farmer grow better, more weed-free crops, it evolved toward turf areas as the population moved from the farms and cities to the suburbs.

Having a mission, and a pioneering spirit heritage, the succeeding generations of Scotts researchers were able to develop the first fertilizer specifically for lawns, the first product which could fertilize grass and control weeds simultaneously, the first successful crabgrass control, the first full-feed lightweight fertilizer, the first patented grass seed, the first integrated line of products formulated specifically for golf courses and other large turf areas, and the first practical lawn spreader. The accumulating knowledge and experience of Scotts researchers provided the basic information disseminated to an advice-hungry public via *Lawn Care,* Scotts magazine now in its fifth decade of publication.

Today, largely because of the dedicated work of all who have been involved in Scotts Research, the name *Scotts* is synonymous with fine lawns nationwide, and in many countries abroad.

. . . A humble beginning in a small, rural community

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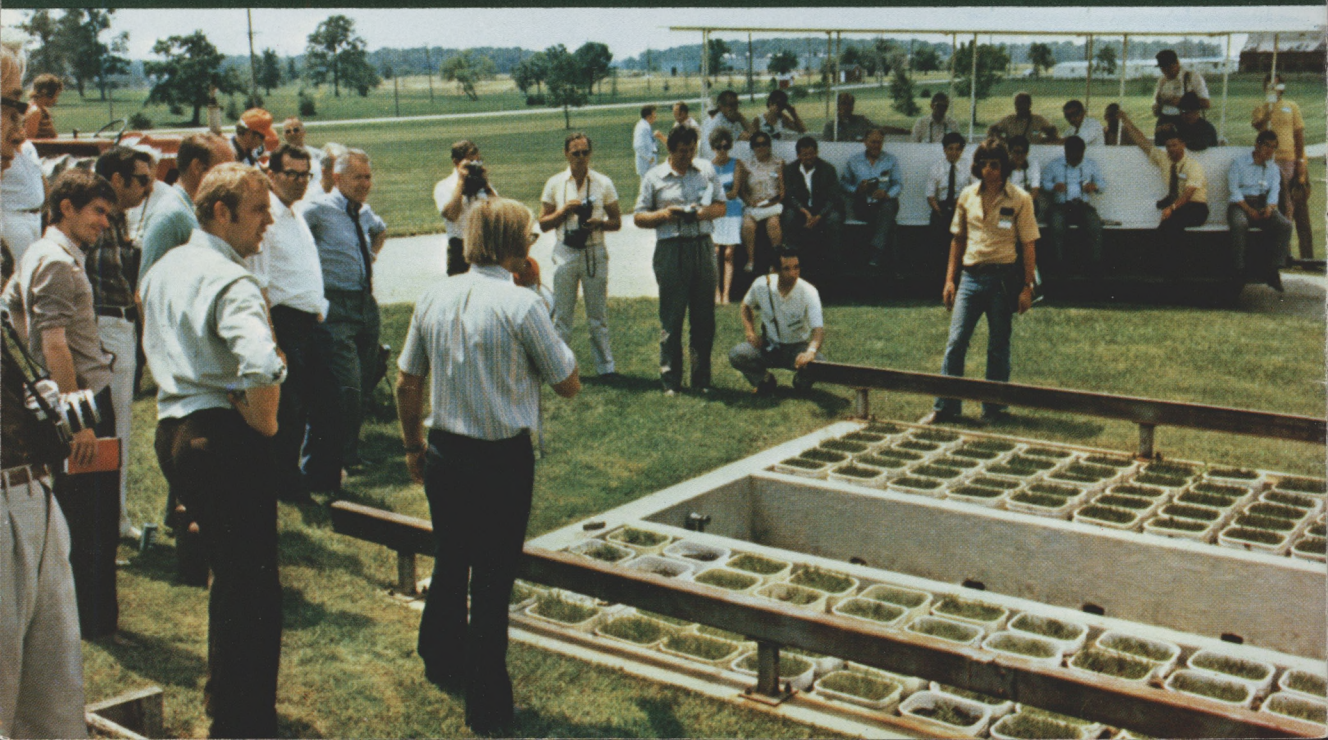

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Scotts Research today

First-time visitors to Marysville often ask, "How is it that Scotts competes so successfully against the huge corporations which have far greater research resources?" It is a provocative question. And the answer does a good deal to explain Scotts leadership. The question implies that biological research is a commodity that can be measured quantitatively, that it is only necessary to double the research staff and its facilities to get double the results. It might work that way in some industries. It certainly doesn't in the grass business which is based on a rare marriage of the biological and chemical sciences.

The unpredictable factor. In some businesses it is possible to envision a new product, do the necessary research and get the product on the market in a year or so. But in the grass business there is a factor that defies time tables. That is Nature herself. Climate and weather play a vital role in the performance of lawn products. The innumerable regional variables cannot be duplicated completely in a laboratory or greenhouse. It takes years of cumulative experience, as well as modern technology, to produce the varying regional products required in the north, south and western sections of the country.

The new tools of science. Research today is very different than it was in the days of O. M. Scott. It is infinitely more complex and wider in scope. Visitors to Marysville are likely to assume in advance that Scotts research is mostly a matter of fertilizing test plots and growing seedlings in greenhouses. Years ago

1. *Performing titration tests during wet chemical analysis to determine quantity of various elements and compounds*

2. *"Getting it all together" at a staff seminar in the Research Center auditorium*

3. *Investigating various iron sources to correct chlorosis condition*

4. *Measuring total nitrogen in grass clipping by Kjedahl method to determine intake from various fertilizer applications*

5. *Measuring response of turfgrasses to various nutrients*

6. *47 scientists from 15 nations observe latest turf developments during International Turfgrass Society visit*

it was. Today it also covers a broad spectrum of basic scientific research disciplines.

For example, some of our researchers are involved in efforts to alter the genetic characteristics of grasses by bombarding the chromosomes with high energy atomic particles. Others, working in the fields of plant physiology and ecology, are contributing to development of new and better ways to control weeds and unwanted grasses. As a result, today we have products that can select annual grasses for destruction and leave perennial grasses unharmed. Tomorrow we expect to have products that will differentiate between varieties of perennial grasses, thus approaching the ultimate in selective control of vegetation.

Greenery is our life. Scotts is the one major company in the world that makes greenery its only business. At first thought this might seem a limitation. Actually it is our strength. Because of it, we have been able to lead and succeed where many have failed. Even though specialized effort has given us leadership in the field, the company attitude is not complacent. The future is too promising and too challenging to do other than continue the dedicated effort which today makes us known as *"The Lawn People,"* and perhaps tomorrow *"The Greenery People."*

It's people doing their thing. A roster of Scotts researchers would reveal a vast array of talents. Plant pathologists, chemists, entomologists, agronomists, chemical engineers and geneticists—to mention but a few. Their assignments are diverse, yet their goals are common—to develop ways to help people grow things more successfully. To accomplish this Scotts researchers divide their efforts among one or more of the following areas.

Turfgrass Research and Development. The perfect grass seed blend for each geographical region—that's what we're after. Although perfection of this sort will undoubtedly never be reached, our people strive toward this end in developing grasses that will continually out perform those that are available today. New grass candidates are judged on the basis of color, density, shade tolerance, rate of establishment and disease resistance. But good

Birdseye view of a portion of research acreage at Marysville. At upper left is the new Dwight G. Scott Research Center's main building under construction.

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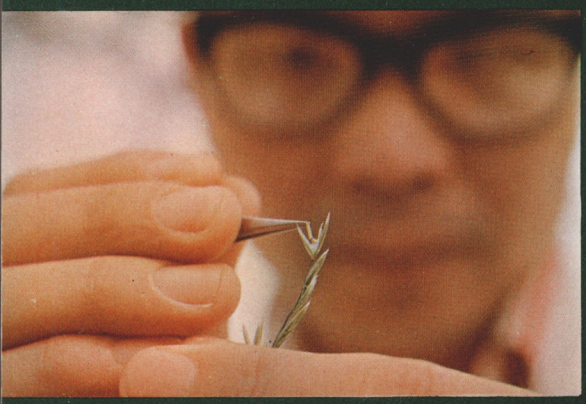

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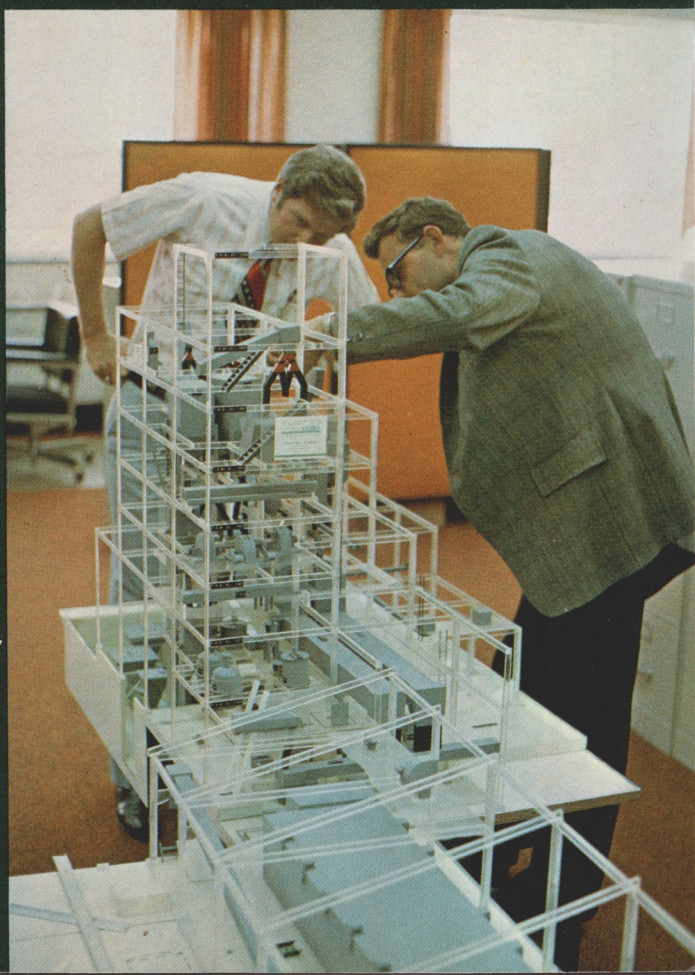

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THE O.J. NOER MEMORIAL
TURFGRASS COLLECTION

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performance isn't the only criterion, for many promising candidates have been discarded for their inability to yield an acceptable amount of seed. (No matter how great the grass, it should be a prolific seed producer to be marketed successfully.) Those grasses which pass the test are then evaluated in blends designed to meet specific homeowner needs. Only after extensive performance tests will these blends finally be made available to lawnowners.

Turf Propagation. The casual observer would perhaps best describe this area of research as an effort to make it easier and faster to develop a new lawn. Improved methods of stimulating seed germination, vegetative propagation, and new sod techniques are key projects.

Plant Breeding. "Tell us what you want from a grass and we'll try to breed one that fits your needs." That's the mission of Scotts plant breeders. Among their current projects are attempts to develop dwarf grasses which have a low growth profile and thus require less mowing.

Fertilizer Research and Development. Identifying the nutritional requirements of grasses and other greenery is of major importance in developing new and improved fertilizers. Once identified, Scotts scientists then explore various sources of nitrogen, phosphorus, potassium and other essential nutrients—as well as develop new methods of combining these nutrients into an improved fertilizer. Such as was done in the evolution of Scotts fertilizer from the original organic TURF BUILDER to *Trionized* TURF BUILDER to the current polymer NEW SUPER TURF BUILDER

Growth Regulator Research and Development. Methods of controlling growth are under study to help improve performance and to reduce the time and labor required to maintain a nice lawn.

Herbicide Research and Development. Here Scotts researchers are at work to develop new and improved weed control products. A constant screening of new chemicals takes place and promising candidates are formulated in sufficient quantities to develop extensive field tests. There are still many weeds which can not be selectively controlled and so the search continues.

Insecticide Research and Development. Efforts start with an investigation of the life cycles of plant damaging insects. New and improved formulations are then screened and developed to offer the homeowner protection for his lawn, flowers, shrubs, etc.

Fungicide and Nematocide Research and Development. Plant damaging fungi and microscopic nematodes are the target of Scotts research in this area. New and improved fungicides are tested to obtain more positive and broader spectrum control of diseases which tend to destroy a grass plant's resistance to environmental stress. Plant-weakening nematodes, a problem primarily in the

1. *Checking all statutory labeling requirements of a new product in preparation for registering it with federal and state agencies*

2. *Monitoring growth characteristics of some of the new grass variety candidates produced by plant breeding program*

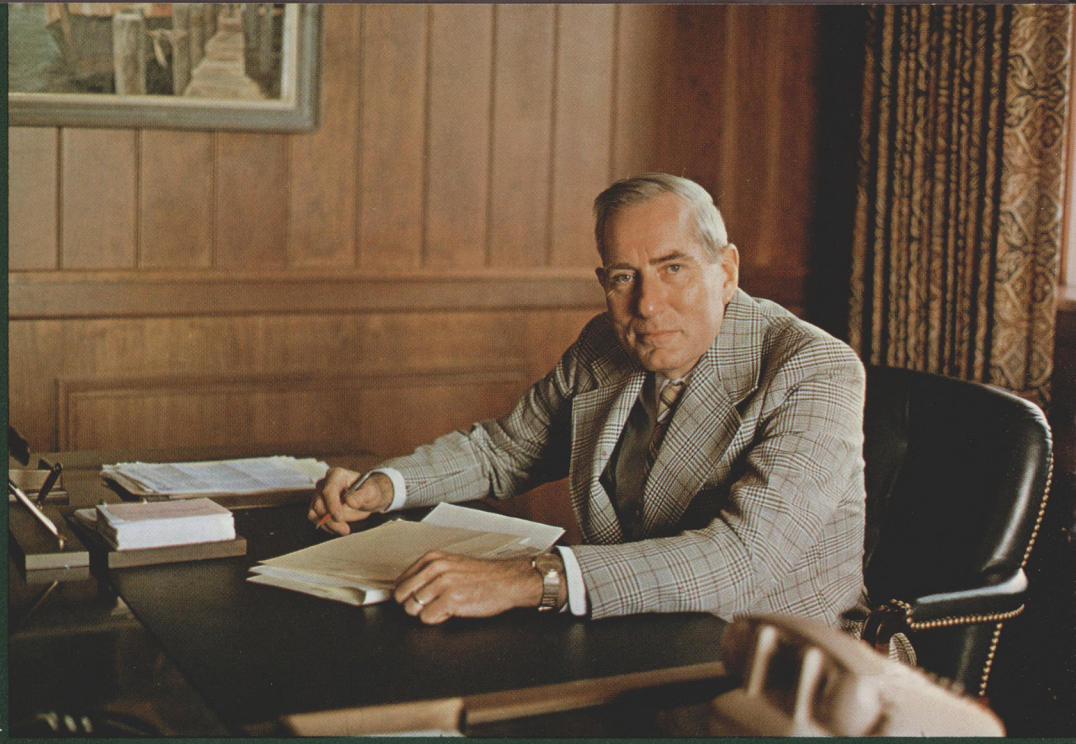
3. *Recording daily precipitation for use in interpretation of field results*

4. *Recording monthly performance characteristics of various turfgrass varieties to determine effects of seasonal change*

5. *Removing anther (male part of flower) from tall fescue plant for cross-breeding experiment*

6. *Thousands of textbooks, periodicals and reference publications—and teaching aids and microfilming equipment—are centralized in library at Research Center.*

7. *Determining engineering specifications on a scale model of a new processing plant*



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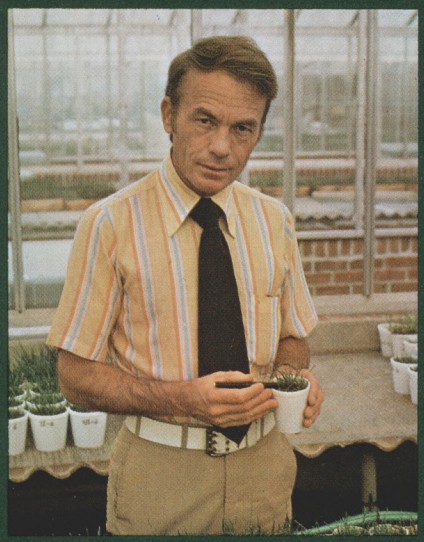

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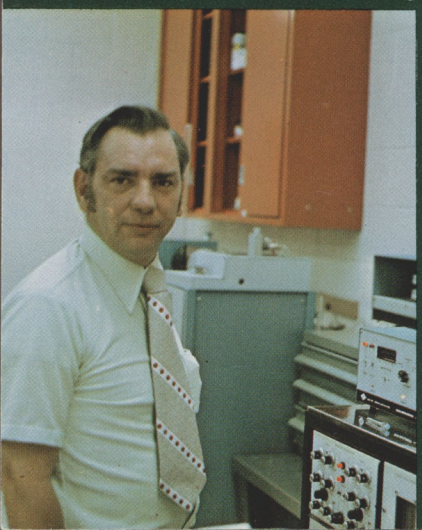

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southern states, still defy practical control. However several test programs look promising for the future.

Garden Care Research and Development. Both homeowners and commercial nurseries benefit from today's research in this area. New and improved nutrient products are being developed to make the growing of all plant life found around the home easier and more rewarding.

Application Research and Development. Designing and developing new and better ways of applying lawn and garden products is the objective of Scotts researchers involved in this function. Ease of application as well as safe, uniform distribution are important guidelines.

Formulations Research and Development. Here Scotts researchers develop the experimental and finished formulations for new products. Safety to the user and to the environment are prime requisites. Analytical procedures are also developed to analyze the product, its stability and toxicology.

Process Engineering Research and Development. The greatest new product, without a practical, economical way to produce it, is all but worthless. Researchers in this area develop the processes to manufacture new Scotts products—first in small bench scale units, then in pilot plants, and finally in full plant scale.

Engineering Research and Development. When a new family of products "makes it" into the Scotts line, it frequently means major new modifications or completely new manufacturing facilities are required. Scotts engineers develop the specifications required to build them. Safety in manufacture and a pollution-free operation are important factors in the design.

Technical Services. Providing information concerning the use of Scotts products is as important as the product itself in helping the user have a satisfactory experience.

Government and Industry Relations. Assuring the legal sale of Scotts products involves timely registration or licensing with the Federal government, regulatory agencies of 50 states, Canada and other foreign countries. Keeping up technical public relations with Agricultural Extension Agents and University & Experiment Station scientists helps insure the uniformity of advice reaching the public.

Foreign Research and Development. Scotts researchers develop and coordinate the data required to register and effectively use Scotts products in Europe, Canada, Japan and other foreign markets.

New Ventures. This, the newest area of Scotts research, is devoted to investigating and identifying new market opportunities for the utilization of Scotts facilities and products, both at home and abroad.

Scotts Research Management

1. *John R. Kilsheimer, Vice President, Research and Development*

2. *James A. Simmons, Director of Product Development*

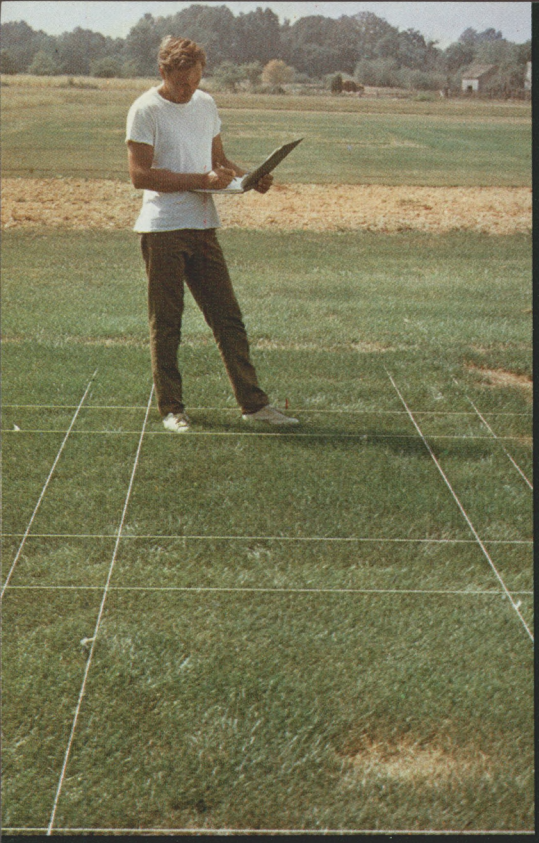
3. *John A. Long, Director of Biochemical Research*

4. *Richard T. Bangs, Director of Government & Industry Relations*

5. *Ronald E. Wietelmann, Director of Chemical and Engineering Research*

6. *Gary B. Higinbotham, Director of Facilities, Design and Engineering*

7. *E. Peter Griffin, Director of New Ventures*



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Scotts Research coast to coast

The wide climatic and soil variations throughout a country as vast as ours have, through natural selection, developed a wide variety of ground covers for lawns. In California, for instance, many of the lawns are not grass at all, but *dichondra,* a plant with kidney-shaped leaves that forms a dense, attractive carpet-like mat.

Products which produce lawns of outstanding beauty in New England or the middle-west may be completely ineffective on the different types of lawns in other parts of the country. They may, in fact, cause severe damage to the turf. Such are the challenges of a business that deals with Nature.

In order to meet these unique regional requirements, Scotts operates five research stations at strategic locations across the country. Specialized products are developed and tested at each of these locations, on all types of lawn vegetation common to the area. Only after this intensive and extensive screening and testing will the product receive Scotts approval for sale to consumers.

Scotts 8 acre *Eastern Research Station* is located near Accokeek, Maryland on the banks of the Potomac River.

In Apopka, Florida, just north of Orlando, lies our *Southeastern Research Station* with its 16 acres of test plots.

Approximately twenty miles north of Houston, in the village of Cleveland, Texas, is Scotts 28 acre *Southwestern Research Station.*

The *Pacific Northwest Research Station* is located on 75 acres some twenty miles north of Salem, Oregon.

In California, some sixty miles north of Los Angeles, lies Scotts *Western Research Station* on 19 acres of plots.

In total: 146 acres and five teams of full time Scotts field researchers working together with their counterparts in Marysville (on their 110 acres) to tailor Scotts products and programs to the specific needs of homeowners throughout the country.

1. *A portion of turfgrass variety field tests near Accokeek, Md.*

2. *Evaluating new controls on ornamentals in Apopka, Florida*

3. *Preparing new fertilizer field evaluations on plots, Somis, Calif.*

4. *Gathering data on potential new herbicides on sprigged St. Augustinegrass on plots at Cleveland, Texas*

5. *Genetics stabilities and yield studies on promising new grasses in clonal nursery at Gervais, Oregon*

ARTIST: J. HOWARD SANDEN

The Dwight G. Scott Research Center

The hub of Scotts research activities is the new Colonial-style building and greenhouse facilities at Scottslawn Road just outside Marysville. Completed in July 1974 and formally dedicated Oct. 21, 1974, its 68,820 square feet include research administrative offices, thirteen modern laboratories, a large library, a meeting and seminar auditorium, and four greenhouses. Surrounding the buildings are over 110 acres of research plots, equivalent to the size of a city airport.

Dwight Scott, the man. Son of the founder, Dwight Scott became actively involved in the business in the early 1900's—soon after graduating from Oberlin College. Like his father, he had an intense dislike of weeds—and expanded the search for ever better quality seed. He also provided the stimulus for the Company's later research activities, centering not only on weed-free seed, but on developing better methods to get rid of weeds once they become established.

A life-long resident of Marysville, Dwight served as President of Scotts until 1948 and as Chairman of the Board until 1956. Following his passing in 1969, his wife, Jessie S. Scott, established the Dwight G. Scott Educational Scholarship in respect for his interest in youth, and his admiration for the qualities of perseverance and good scholarship.

Naming the new research center for Dwight G. Scott was most appropriate, and is best expressed by the words used at the May 8, 1973 groundbreaking, "In recognition of Dwight G. Scott's foresight and inquiring mind which inspired the later development of a strong research program, assuring the future growth of O. M. Scott & Sons."

Top:
New research headquarters building, completed in summer 1974.

Bottom:
Portrait of Dwight G. Scott on display in lobby

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Scotts Research—Key Milestones

1928 Turf Builder, the fertilizer designed for lawns

1937 Early weed control research started

1941 Formal research program begun

1946 First Scotts lawn spreader

1947 The first completely selective chemical control for broadleaf weeds in lawns

1950 Scutl, the first practical chemical control for crabgrass

1957 New Trionized Turf Builder, the first lightweight fertilizer designed specifically for the complex nutritional requirements of grass

1965 Windsor, the first patented lawn grass

1969 Polyform fertilizer products, high-greening power with less weight and bulk

1973 New Super Turf Builder—"The best lawn food Scotts has ever made"

1974 Opening of Dwight G. Scott Research Center, to assure continued leadership in the lawn and garden industry

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