Profile

REID MILNER

Reid Milner has the unique distinction of having been president of the American Oil Chemists' Society (1947-48) and of the Institute of Food Technologists (1973-74).

From 1936 until 1954, he was an active investigator on oilseeds as he held research and administrative posts at the U.S. Regional Soybean Industrial Products Laboratory in Urbana and at what is now the USDA's Northern Regional Research Center in Peoria.

In 1954, Dr. Milner was named head of the University of Illinois' Department of Food Technology, which changed its name to the Department of Food Science before his retirement in 1971.

To his neighbors in Urbana, Dr. Milner is known as a wizard of the garden. His 70-foot by 75-foot plot along one of Urbana's main traffic arteries to-and-from the University of Illinois campus has been featured twice in the past three years in a local newspaper. The carefully planned vegetable garden produces an abundance of food, but its design and floral border are what initially attract attention from neighbors and passing motorists.

Seed for the garden costs about $5 a year and a local newspaper once checked with a horticulturist who estimated the Milners' harvest would cost $2,000 if purchased in the store. Dr. Milner several years ago said he had given up gardening for quantity when his wife, Marjorie, pointed out the effort required to preserve was greater than the effort required to produce. A few years ago he said he probably gives away half of the harvest to friends and neighbors. As an experienced researcher, he keeps a detailed journal of plantings and harvests.

While gardening has become his major avocation, it was chemistry that first caught the imagination of a teen-age Reid Milner. Born in southern Illinois, Milner was raised in Chicago where a young, enthusiastic high school chemistry instructor provided him with 2-1/2 years of chemistry tutoring at a time when the prep curriculum included only one year's formal instruction. Milner went on to get his bachelors and masters degrees from the University of Illinois in 1924 and 1925, respectively, and then his doctorate in chemistry from the University of California in 1929.

After stints with the U.S. Bureau of Mines in Pittsburgh (working on industrial uses for the then surplus natural gas) and the U.S. Department of Agriculture in Washington, D.C. (working in the Fixed Nitrogen Laboratory and helping to establish the first micro-analysis lab in Washington), Dr. Milner returned to Urbana in 1936 as an analytical chemist with the newly established Regional Soybean Lab. He joined the AOCS the same year.

Soybeans at that time were still almost a novelty plant. Dr. Milner recalls working hard "trying to make paint out of the oil and plastics out of the meal." At the same time, he and his co-workers were analyzing hundreds of breeding samples for agronomists. "Out of that program came practically all the commercial varieties grown today in the United States," Dr. Milner says. The analysts also did work on oil flavor, he recalls. In 1939, Dr. Milner was named director of the laboratory, and two years later he moved to Peoria as head of the Analytical and Physical Chemical Division of what is now the NRRC. At the lab, he was part of the team that developed large-scale production processes for penicillin, and he helped improve analytical methodology, including determination of oil content of soybeans. Away from the lab, Dr. Milner became a dedicated home gardener.

In 1948, shortly after completing his term as AOCS president, and while serving as interim editor of *JAOCS*, Dr. Milner was named director for the Peoria center.

During his time as division head, Dr. Milner supervised work on many crops, but retained a special interest in soybeans and oilseeds. When he became center director, he was another step removed from lab work. "Eventually you begin to wonder whether you have anything to do with the final result," he said.

When the chance to head the food technology department at the University of Illinois came, Dr. Milner took it. The family moved to 614 W. Florida Ave. in Urbana and a new vegetable garden was established.

While he finds all administrative work is fairly much alike, Dr. Milner notes that at his university job his boss was just downstairs, while in Peoria his boss had been a thousand miles away in Washington, D.C. He preferred the interaction and less travel the closer location permitted.

In 1954, Dr. Milner notes, it was necessary to go out and attract students, to make them aware of what the department offered. His predecessor, Dr. Louis B. Howard (a co-worker from The Fixed Nitrogen Lab in Washington), had founded the curriculum on heavy doses of nutrition, chemistry, and microbiology "and we didn't change it much," Dr. Milner says.

The department is now known as the Department of Food Science because the faculty wanted the name changed. "Academic people have an aversion to terms such as 'technology,' " Dr. Milner says, "but we didn't change the curriculum any. To me it was just a choice between tweedledee and tweedledum."

Under any name, the department's graduates have not had any problems finding jobs. That's likely to continue for a long time, Dr. Milner believes, with increasing governmental and consumer activist interest in foods and food safety.

In 1971, the year he retired, Dr. Milner received the IFT's Nicholas Appert Award, the organization's highest award, "for contribution to food technology." In 1973 he was elected president of IFT, working from that post to strengthen the National Nutrition Consortium, an advisory body of various food organization representatives that offers suggestions to state and national legislators on nutritional questions. During 1973 he was an Honorary General Chairman for the World Soy Protein Conference in Munich.

Dr. Milner says he is now for all practical purposes retired from his many activities, although he does serve on some IFT award committees. "Sometimes I feel I've

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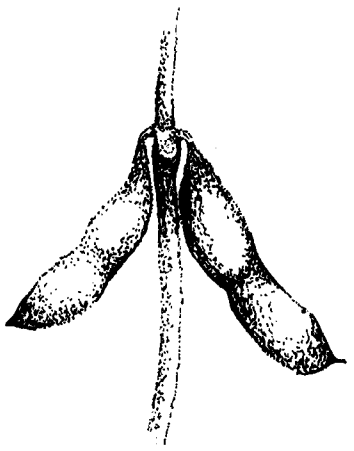
Soybean research in Illinois described



Approximately 400 persons attended a special program, "Close-Up on Illinois Soybean Research—Production, Marketing, Utilization," held in late June at the University of Illinois, Urbana-Champaign.

The program reviewed research programs by the Illinois Agricultural Experiment Station, the Agricultural Research Service, the Cooperative Extension Service, and the University of Illinois' College of Agriculture.

Plant breeders, agronomists, agricultural engineers, marketing specialists, and others outlined current research interests and projects. AOCS member William H. Tallent, director of the USDA's Northern Regional Research Center in Peoria, described the center's work on soy utilization.

R.W. Howell, head of the U of I department of agronomy, said breeding and genetic researchers can breed for resistance to disease or pests, for specific growing conditions, and for ultimate use. He cited disease-resistant varieties previously developed and current efforts to produce varieties resistant to new races of soybean cyst nematode, and newly released semi-dwarf varieties for areas where plant lodging is a problem. In recent years, about 84% of Illinois' soybean acreage was planted in varieties developed from the same nine original strains, R.L. Bernard said.

Current research, Howell said, is aimed at possibly developing a variety that will yield soybean oil that is much lower in linolenic acid, free of trypsin inhibitor factors (plants with lower than normal trypsin inhibitor have been developed), and, in a project he termed "futuristic," hybrid soybeans.

Agronomy professor F.W. Slife told of monitoring insect population and disease development as a prelude to breeding hardier soybean plants. Field trials are being done this year, he said, on a rust resistant variety. Leaf rust has been a problem in the Far East and has been found in Puerto Rico, but it has not yet invaded the major soybean growing areas. Added emphasis is being put on ways to control perennial weeds, Slife said.

W.R. Nave of ARS, USDA, described agricultural engineering research ranging from determining erosion under various tillage practices for soybeans to development of new cutter bars on combines to reduce harvest losses.

Tallent described soybean oil research aimed at eliminating off taste and odor, and research on interesterification as an alternate to hydrogenation for improving functional qualities.

In research on soy protein, Tallent told the group effort continues on flavor, functionality, and flatus. In addition, NRRC is investigating full fat soy food products, he said.

T.A. Hieronymous, agricultural economist, said development of soy protein foods that people would eat would mean a drop in value for soybeans since conversion of raw soybeans directly to protein is more efficient than turning them into meat by feeding soymeal to animals. The U of I has begun development of a projection of what the state's agriculture will be like 10 years from now, based on the success of a similar project done a decade ago to predict conditions now.

Copies of "National Soybean Research Needs" as evaluated by the National Soybean Research Coordinating Committee were distributed at the meeting. In the section on utilization, the report assigned top priority to work on edible defatted protein products. Ranked next in priority were research on edible full-fat protein products, edible oil products, feed protein products and industrial oil products.

Utilization is the only major soybean research area where the number of scientist years (SYs) in research declined between 1972 and 1975. (The other two research areas are production and marketing.) The report suggests that while there were 46.4 SYs available for utilization research in 1975, by 1980 there should be 64.1.

Most of the research goals for use of soybeans as food call for more work on flavor, functional properties, flatus factors, and color. In the case of edible oil products, the three areas identified are flavor, odor, and oxidative stability.

Industrial oil products research is needed to maintain and expand present markets for soybean oil as well as help provide new ones. While edible uses dominate soy oil use, the report notes that soy oil can be used for some of the same applications as depletable petrochemicals.

R.J. Aldrich of the University of Missouri serves as chairman of the research coordinating council. ●

Simon-Rosedowns announces Sudan contract

Simon-Rosedowns of Hull has delivered equipment to the Sudan for three vegetable oil plants under contracts worth more than $1.25 million.

Oceantrade SA, Geneva, placed an order for two identical plants, each to process up to 35 tons each day of groundnut kernels. The equipment, being installed at Khartoum factories of Yousif Ahmed Alabass an Al Kattani Oil Mill, consists of seed preparation, screw pressing, and oil and cake handling machinery. Simon-Rosedowns also supplied equipment to screen and filter the extracted oil, and to handle the extracted cake through to weighing and sacking.

The third order was from Malik Industrial Co. Ltd. of Khartoum for a plant to process 80 tons per day of black Sudanese cottonseed. The equipment includes material for preparation, screw pressing, screening and filtering of the oil, and weighing and sacking of extracted cake. ●

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slighted the oil chemists," he says smiling.

Being a gardener, he plans his vacations for winter time, usually to Florida. He and his wife do take periodic trips to Chicago to visit museums (the King Tut exhibit attracted them this summer). They don't do much foreign traveling, although Dr. Milner is considering attending the Fifth International Congress of Food Science and Technology during September 1978 in Kyoto, Japan.

What about his previous interests in soybeans?

They still have a special place – in his vegetable garden. Dr. Milner has long grown green vegetable soybeans, specially bred for large seed size, with a flavor like baby lima beans "but better," he says. They're preserved by freezing since "soybeans don't take well at all to canning," Dr. Milner says.

The Milners enjoy retirement in a university town, at least partially because of the cultural opportunities it offers. Not to mention the information and specialists available to a dedicated gardener. ●