

Arthur Lee Hooker, 1924-1991

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Arthur Lee Hooker, former professor of plant pathology and agronomy at the University of Illinois, died at his home in St. Charles, IL, on 4 July, 1991, thus ending a distinguished career as a preeminent plant pathologist and geneticist. He devoted more than 40 years of his life to research and teaching.

Dr. Hooker, son of Robert Lee and Dora Leuth Hooker, was born 12 October, 1924, on a farm at Lodi, Wisconsin. He served in the U.S. Army from 1942 to 1946. He was

awarded B.S., M.S., and Ph.D. degrees from the University of Wisconsin in 1948, 1949, and 1952. He married Ellen Margaret Zimmerman in 1950. He was an assistant professor of botany and plant pathology at Iowa State University from 1952 to 1954, and a plant pathologist with USDA/ARS at the University of Wisconsin from 1954 to 1958. In 1958, Dr. Hooker joined the faculty of plant pathology at the University of Illinois, where he served until 1980. He was bioscience director and principal scientist at DeKalb-Pfizer Genetics from 1980 to 1986. Since 1986, he served as scientific director of the Plant Molecular Biology Center at Northern Illinois University and was a corn breeder for Hughes Hybrids.

During Dr. Hooker's tenure at the University of Illinois, he directed the graduate research of more than 30 M.S. and Ph.D. degree-seeking students, including many who currently are well known commercial plant breeders. He taught two advanced courses in plant pathology and assisted with an introductory course. Dr. Hooker's research was focused on preventing plant diseases by genetic resistance. His view of germ plasm evaluation and utilization was pragmatic and well organized, as was his life. In the early 1960s, Dr. Hooker showed that sporulation of *Exserohilum turcicum*, the causal agent of northern corn leaf blight (NCLB) was greatly reduced in corn strains carrying the gene *Ht1*, which he had discovered. He proposed that the gene *Ht1* be backcrossed into elite inbreds. By doing this, Dr. Hooker greatly reduced the effect of this disease for nearly 20 years until new biotypes occurred. Subsequently, he identified and isolated other genes for resistance to NCLB, common rust, southern corn leaf blight (SCLB), and anthracnose leaf blight. Dr. Hooker and his students took similar genetic approaches in researching northern corn leaf spot, downy mildew, Stewart's bacterial wilt and leaf blight, anthracnose stalk rot, and Diplodia and Gibberella stalk rots. He probably identified and studied more genes for disease resistance in corn than any other researcher. He supplied plant breeders throughout the world with information and seedstocks carrying genetic resistance for numerous diseases. Dr. Hooker is probably best known for his research, which aided in resolving the SCLB epidemics of 1970-1971. A year before the "year of the corn blight," Dr. Hooker and his colleagues clearly showed a new race of *Bipolaris maydis* had arisen. His co-authored publication describing this initial work on race T of *B. maydis* was named a Citation Classic of *Current Contents* as one of the most frequently cited scientific papers in agricultural

journals. He developed methods to identify and combat the blight that were used by commercial companies during and after the 1970 disaster. He also identified a gene (*rhm*) for resistance to *B. maydis* that was incorporated into a number of elite inbreds.

In 1980, Dr. Hooker resigned from the University of Illinois to join the Pfizer Genetics. He moved to the DeKalb-Pfizer Genetics when the two companies merged in 1983. He directed and supervised a multi-disciplinary research and development program for improving hybrid corn seed and biotechnology research until 1986. During the past five years, Dr. Hooker was instrumental in establishing the Plant Molecular Biology Center at Northern Illinois University and was actively involved with corn breeding, hybrid evaluation, and selection. He interacted with farmers for Hughes Hybrids, a family-owned seed company. At the Hughes Hybrids research farm, he developed several new superior dent corn inbred lines that ranked first in company-wide yield trials and two waxy inbred lines that merited an experimental hybrid stage. He also identified sources of genes for endosperm hardness that will be extremely useful in developing opaque-2 corn hybrids.

Dr. Hooker was an intensely motivated man who expected maximum output from himself and his colleagues. He was generous with his time in helping the development of young scientists who had goals, aspirations, and motivations similar to his. Dr. Hooker also was an excellent teacher. He was well known by his students for his clear and logical presentations. One student wrote, "I think he has a strong gene for graduate teaching." His advice was sought actively throughout his career by students, colleagues, growers, extension agents, and administrators. Dr. Hooker served with distinction on many committees, including the scientific advisory committees of the Illinois Crop Improvement Association and Illinois Foundation Seeds, Inc. His advice also was sought frequently by many seed corn companies, both large and small. He seemed happiest when helping seedmen and farmers.

Dr. Hooker was a fellow of the American Phytopathological Society, the American Association for the Advancement of Science, the American Society of Agronomy, and the Crop Science Society of America. He served on the Council of the American Phytopathological Society. He was a member of the panel that studied genetic vulnerability of major crops for the Agriculture Board of the National Research Council, National Academy of Sciences. He received the University of Illinois, College of Agriculture, Funk Award, which is the highest recognition at Illinois for outstanding service to agriculture through research and teaching. He was commended in Senate Resolution 176 by the 77th General Assembly of the Illinois Senate for his outstanding work during the SCLB epidemics. He was a Guggenheim Memorial Foundation fellow and a member of Gamma Alpha, Phi Kappa Phi, Gamma Sigma Delta, Sigma Xi, and Alpha Zeta. He was an invited speaker and consultant in 19 countries, and he authored over 160 publications, symposia articles, and book chapters.

Dr. Hooker was a dedicated, disciplined, and kind person. He was a unique scientist. His special contributions will be missed. He is survived by his wife, Ellen, a son and daughter, David and Meg, and a brother, Robert.