

Leonard J. Alexander, 1903–1986

J. P. Jones, R. E. Stall, and L. E. Williams



Dr. Leonard J. Alexander, plant pathologist and plant breeder, was born April 3, 1903, on a farm near Treynor, Iowa. At an early age, his family moved to a cotton plantation near Tallulah, Louisiana. As class valedictorian, he won a four-year scholarship to Louisiana State University where, in 1926, he received his B.S. degree in botany and agricultural education. Dr. Alexander was granted the M.S. degree in 1928 and the Ph.D. degree in plant pathology in 1934 by the University of

Wisconsin. He joined the faculty of the Ohio Agricultural Experiment Station (currently, the Ohio Agricultural Research and Development Center, The Ohio State University) in 1930 as assistant (plant pathologist). Dr. Alexander was made associate (plant pathologist) in 1938 and professor of plant pathology in 1951.

Early in Dr. Alexander's tenure at the Ohio Station he worked on *Cladosporium* leaf mold of tomato and successfully differentiated races and developed resistant cultivars. In 1938, he released the Globelle cultivar, which was resistant to leaf mold races 1, 2, 3, and 4. He also discovered race 2 of *Fusarium oxysporum* f. sp. *lycopersici*, actually making the pathogen collection before the *I* gene for resistance to race 1 had been identified. Dr. Alexander developed many multiple disease-resistant tomato cultivars for the Ohio greenhouse industry including Ohio W-R 3 (1947), Ohio W-R 7 (1957), and Ohio W-R 25 and Ohio W-R 29 (1966), all resistant to *Fusarium* wilt and blotchy ripening. Ohio W-R 3 was grown almost exclusively in the Ohio houses for 10 years. It was replaced by Ohio W-R 7, which became the standard for another eight years until Ohio W-R 25 became the dominant cultivar in the mid 1960s. Dr. Alexander's work with tobacco mosaic virus (TMV) was especially noteworthy. He and his associates determined that there were five distinct strains of the virus. They located a single dominant gene (*TM-2^a*) that governed resistance to all five TMV strains in a wild, nearly incompatible, species of tomato (*Lycopersicon peruvianum* Mill.). This was followed by research that determined the effect of temperature on the pathogen: host interaction. These studies led to the transfer of the resistance to commercial tomato lines, via extensive embryo culture, and the development of a series of TMV-resistant cultivars, Ohio M-R 9 (1970), Ohio M-R 12 (1970), and Ohio M-R 13 (1972). Ohio M-R 12 was quickly adopted by the industry and became the principal cultivar grown until 1981. Consequently, Dr. Alexander's pink-fruited tomato varieties were used almost to the exclusion of any other in the Ohio greenhouses for over three decades, a most notable achievement. Also, his genetic material, particularly the *TM-2^a* gene, was used in breeding programs around the world.

In 1942, Dr. Alexander organized an international committee of plant pathologists and plant breeders for evaluating tomato accessions for disease resistance. Twenty years later, when race 2 of the tomato wilt *Fusarium* threatened the tomato industry, resistance already had been identified by Dr. Alexander and the committee. This foresight shortened by several years the time required for development of a resistant cultivar and saved millions

of dollars.

Dr. Alexander was a man who was extremely proud of his profession, his department, and his institution. He was a multifaceted plant pathologist, a Renaissance man, delving here and exploring there. He worked on the design of formaldehyde dust for damping-off control in seedling flats; he discovered race 2 of *Verticillium albo-atrum* in addition to race 2 of *F. o. f. sp. lycopersici*; he helped isolate, purify, and produce antisera, for the first time, to the maize dwarf virus of corn; and he developed embryo culture techniques long before biotechnology became fashionable.

Although Dr. Alexander retired as professor emeritus from the Ohio Station in 1970, he did not retire as an active and productive plant pathologist. He merely shifted his talents to the University of Florida, where he worked cooperatively with agronomists for 12 years (1971–1983) as a soybean pathologist, concentrating on seedborne pathogens. By determining the diseases and pathogens involved and by demonstrating the importance of early harvesting, he provided a mechanism to substantially increase seed quality for soybeans grown along the Gulf Coast. Dr. Alexander "retired" a second time from a major university in 1983 and devoted his time to friends, former graduate students, and family.

Dr. Alexander was active in the American Phytopathological Society, serving as advertising manager (1948–1956) and councilor (1963–1969) and President (1968) of the North Central Region. He was made a Fellow of APS in 1970. Dr. Alexander was an active member and served in leadership roles in numerous other scientific and honorary societies and community organizations. He was elected a Fellow of the Ohio Academy of Science in 1951. Dr. Alexander received several honors from the Ohio Greenhouse Vegetable Association including a \$1,650 award in 1950 and financing the next year for construction of a 5,500-square-foot greenhouse at the Ohio Center for his future work. In September 1971, the Midwest Greenhouse Vegetable Conference honored him at their annual banquet, presenting him a gift and his wife a bouquet of red roses.

Dr. Alexander spent a year (1961–1962) on sabbatical leave at the Institute for Phytopathological Research at Wageningen, The Netherlands, where he worked in virology on grants from the Rockefeller Foundation and the National Institutes of Health. He was guest lecturer at the Università degli Studi, Facoltà di Agraria, Bari, Italy, in 1962. For nine months in 1968–1969, he was a visiting research professor at the University of Florida where he studied the effect of TMV and resident plant bacteria on development of blotchy ripening of tomato. February and March of 1971 were spent at the University of Bari working with Professor Cirulli. That April, he was a guest of the Academy of Sciences of Sofia, Bulgaria. During his 12-year tenure at the University of Florida, Dr. Alexander limited his travel to the continental United States, visiting Alaska and many of the national parks in his travel trailer.

Dr. Alexander died February 17, 1986, of Parkinson's disease. He is survived by his wife, Thelma; his sons, Robert Scott and David Lee; six grandchildren; and one brother, Richard. "If you would not be forgotten, either write things worth reading or do things worth the writing." Dr. Alexander will be remembered! Not only for his professional accomplishments, but also for his concern for his fellow man, his counsel, and his friendship.