

From the Oat Newsletter, volume 37, 1986:

Marr D. Simons
Award for Distinguished Service to Oat Improvement



Dr. Marr D. Simons, plant pathologist with ARS-USDA and professor of plant pathology at Iowa State University, is the world's authority on crown rust disease of oats and a renowned leader in breeding disease resistant varieties of plants. He has been a contributing member of the world's oat research community for the past 35 years via fundamental research, advising graduate students, conducting rust surveys and providing genes for crown rust resistance, and variety development. And for the past decade he has served as local administrator for ARS-USDA plant scientists stationed at Iowa State University.

Dr. Simons has concentrated on research in two areas (a) the genetics and use of tolerance of oats to crown rust and (b) the genetics of vertical resistance genes extracted from Avena sterilis, the weedy progenitor of cultivated oats. Tolerance is a characteristic of an oat plant to yield normally in spite of being diseased. Dr. Simons has shown that this trait is quantitatively inherited with heritability generally above 50%.

Genes for tolerance to crown rust were discovered in land races and cultivars of A. sativa and in several collections of A. sterilis, and mutations for this trait were induced by radiation and chemical mutagens. He developed the paired microplot method, in which one plot is diseased and one is maintained disease-free, for testing oat lines for tolerance and pioneered the use of seed weight reduction as an index for this trait. Dr. Simons has explained the inheritance of several vertical genes for crown rust resistance extracted from A. sterilis.

Each year, Dr. Simons has conducted a race survey of the crown rust pathogen in the U.S. These surveys, which have shown the trends in the race structure of the crown rust pathogen, have permitted oat breeders to predict what crown rust resistance genes to use in varietal development programs. His prebreeding program with resistance genes from A. sterilis has provided numerous parental lines for oat breeders throughout the world.

The research done by Dr. Simons has been recorded in over 100 technical papers. In 1970 he published a monograph entitled "Crown rust on oats and grasses" which serves as a "bible" for pathologists worldwide. Plant pathologists trained by him occupy positions in the U.S. and in foreign countries. He served as editor of the Oat Newsletter for a decade.

It is obvious that Dr. Simons is a productive researcher and teacher: However, his most outstanding attribute is being a friend to everyone. He has given of his time to advise colleagues on research projects and techniques, and during his term as local ARS-USDA administrator, the research facilities and resources for this unit have increased immensely. He is constructive in all things he does.

Dr. Simons has served on several national committees and task forces, given papers at international symposia, and received a number of research grants. He is a fellow of the American Phytopathological Society and has received the Distinguished Iowa Scientist Award from the Iowa Academy of Science.

Marr D. Simons was born May 7, 1925 in Murray, Utah. He received the BS degree from Utah State University in agronomy in 1949. His MS and Ph.D. degrees were earned at Iowa State University in 1950 and 1952, respectively, both in plant pathology. In 1952, he joined the ARS-USDA as a plant pathologist stationed at Iowa State University, a position he still holds. Also, he is a professor of plant pathology in the Department of Plant Pathology and Seed and Weed Sciences, Iowa State University.