



DR. LEO DEL DUCA

Dr. Leo Del Duca retired on 26 December 2005 from the National Wheat Research Centre (NWRC)—Embrapa Trigo, Passo Fundo, Rio Grande do Sul (RS), Brazil, after working on wheat breeding for 35 years.

Dr. Del Duca was born in Bagé, RS, Brazil, and obtained a B.S. degree of Agronomist (Eng. Agr.) at the Federal University of Pelotas (UFPEL) and a M.Sc. in Agronomy and Ph.D. in the Department of Genetics at the Federal University of RS (UFRGS). He served in the Brazilian Army and became a reserve officer (2nd lieutenant).

Leo began to work in 1970 at the Experimental Station of Bagé (Secretariat of Agriculture, RS) as an assistant of Dr. Iwar Beckman, considered to be the father of Brazilian wheat. Beckman was an assistant of Dr. Nilsson-Ehle in Sweden and selected the genetic base of Brazilian wheats for some world renowned cultivars such as Frontana (the source of durable leaf rust and sprouting resistance) and Frondoso (protein source). While Leo was in charge of the Bagé program, he selected the cultivars Aceguá, Santiago, Hulha Negra, and Mascarenhas, the last one released to the states of Rio Grande do Sul, Paraná (PR), and Santa Catarina. He maintained research on wheat cytogenetics at the Departments of Genetics and Crop Sciences at the UFRGS, studying the meiotic stability of Brazilian wheats. Invited to Embrapa in 1978, Leo began to work at the NWRC. He acted in cooperative efforts with foreign institutions such as INIA (Uruguay), FAO (Roma), IICA/OEA and INIA (Chile), CIMMYT (Mexico), U.S. universities, and public and private Brazilian institutions in Rio Grande do Sul, Santa Catarina, Paraná, M. Grosso do Sul, São Paulo, District Federal (DF), Goiás, and M. Gerais (MG). Some of his work involved field selections at CPAO (Dourados, MS), CPAC (Brasília, DF), CIMMYT (Obregón, Mexico), Embrapa Soja (Londrina, PR), and COTIA (S. Gotardo, MG). He participated in regional, national, and international meetings, commissions, seminars, and symposiums. Work trips included foreign countries such as Uruguay, Argentina, Chile, Mexico, and Italy.

In addition to his role in the national wheat breeding program, Leo was a leader or responsible for research projects on basic wheat germ plasm development, partial resistance to wheat diseases, triticale genetic breeding, research of breeding procedures, wheat breeding for southern Brazil, breeding for an alternative wheat ecoideotype, and wheat for dual purpose (forage and grain). Leo also participated in the Strategic Evaluation Committee, Technical Committee, the and the Editorial Board of Embrapa, and was a consultant for many scientific journals including *Pesquisa Agropecuária Brasileira*, *Bragantia*, *Revista Ciência e Agrotecnologia*, and *Revista Brasileira de Agrociência*. He evaluated national and international nurseries in basic germ plasm studies.

After a cooperative FAO project investigating horizontal resistance to diseases, Leo focused his efforts on durable resistance to biotrophic diseases, especially leaf rust and powdery mildew, where resistance are broken down more frequently. From a project evaluating breeding procedures, he obtained basic data about the effects of natural selection in bulk populations, practical results comparing different selection methods, and about early yield tests. The cultivars Embrapa 16, Embrapa 52, and BRS 176 were derived from this project, and Embrapa 16 was the most widely sown Brazilian cultivar in 1995–96. Cultivars for which Leo was responsible as the main breeder or that made a significant contribution include more than 40 soft and hard red early spring, late, or facultative wheats released to different Brazilian states. More recent results include selection of a wheat ecoideotype for the southern region of Brazil, which has a longer emergence–flowering period and a shorter reproductive period. This wheat is more suitable to sustainable agroecosystems because its earlier seeding, longer time of soil–plant cover, increased grain yield potential, and sowing times and cultivar cycles fit a wheat–soybean sequence under a no-till system. The cultivars BRS Figueira and BRS Umbu are products of this breeding strategy. Leo also began breeding dual-purpose (forage and grain) wheats for southern Brazilian, seeking to supply alternatives for early plant soil cover and for crop–livestock integration systems. Cultivars BRS Guatambu and BRS Tarumã were released for this purpose, and this strategy is gradually being adopted in RS.

Leo has authored or co-authored more than 300 scientific publications including papers, summaries, notes, book chapters, proceedings, and bulletins. In addition, he has been active in field days and extension meetings for the RS farmers, making contributions to radio, TV, newspapers, folders, and rural magazines. He is a member of Brazilian Genetics Society and Brazilian Society of Plant Breeding. Although officially retired, he is temporary returning to help advise, facilitating breeding work. Leo has dedicated considerable time to volunteer fraternal activities in a scientific, philosophic, and Christian organization (Charity's Spiritist Centre Dias da Cruz in Passo Fundo, RS). He has two adult sons (Fabio, studying Business Administration, and Raquel, a physioterapist). Leo and his wife Eliana (a wheat quality researcher and recently appointed Administration Adjunct-Head of Embrapa Trigo) have a 3 and one-half year old, nice and active daughter, named Beatriz.



DR. GEORGE H. LIANG

Dr. George H. Liang, educator and geneticist, retired on 31 January, 2006, from the Department of Agronomy at Kansas State University after nearly 42 years of service. He was born in China and completed his high school and college education in Taiwan. He then received his M.S. degree from the University of Wyoming, Laramie, and his Ph.D. from the University of Wisconsin, Madison. He joined Kansas State University as an assistant professor on 1 October, 1964. He was promoted to associate professor in 1969 and to full professor in 1977.

George served as Chairperson of the Interdepartmental Program of Genetics from 1982 until 2004. His specialties are plant genetics, including cytogenetics, quantitative genetics, and molecular genetics. He and his colleagues were among the first to transform grain sorghum plants carrying genes from wheat and rice. His work on genetic modification to incorporate a chitinase gene in wheat and sorghum for insect resistance is pioneering. His papers have appeared in the major journals of the world, including *Journal of Heredity*, *Botanical Gazette*, *Crop Science*, *Canadian Journal of Genetics and Cytology*, *Euphytica*, *Plant Breeding*, and *Theoretical and Applied Genetics*.

Internationally known, George was a consultant for the World Bank and the United Nations Development Program in China. He started his trips to China in 1979 soon after President Nixon opened up China in 1972. Between 1991 and 1996, he was the lead consultant for the United Nations Development Program in China and advised on the five major crops of the country, wheat, corn, foxtail millet, sorghum, and potato. The problem at the time was seed waste by the farmers. They over-planted, because they were not sure of percent germination. Dr. Liang helped to develop a seed certification system, so a farmer could be sure, when he got seed, that he could get 80 % germination, for example, if the seed was certified for that number. This saved a large amount of acreage from over-planting that could otherwise be used for food production, and, at the same time, saved the farmer much time bending on his knees to thin his crops. A Chinese farmer now can plant less and save money, because he needs to buy fewer seed. In July 1999, Dr. Liang was invited by the Chinese Ministry of Science and Technology to advise the Ministry on privatization of its biotechnology program. The Ministry wanted to model itself after Monsanto, where the research would be self supporting by the patented material produced. Dr. Liang suggested that four biotechnology institutes be set up, instead of one in Beijing, to ensure that all parts of China be represented. Dr. Liang's consultations have helped change China from a food-importing country in 1979 to one of self sufficiency. His achievements are remarkable and a great service to mankind.

Dr. Liang instructed students world-wide, including those from China, Thailand, South Korea, Egypt, Tunisia, and India. Until his retirement, he taught graduate level Plant Genetics (since 1968) and Quantitative Genetics (since 1975) courses. One hundred and thirty graduate students, post-doctoral fellows, and visiting scientists worked in his laboratory. The students took the information that they learned from him back to their home countries, where they, in turn, can help produce more food for the growing millions.

Together with his colleagues, he has published 12 book chapters, 120 refereed journal articles, and three books: *Plant Genetics* (Second Edition); *Experimental Principles and Methods*; and *Genetically Modified Crops* (with D.Z. Skinner).

Dr. Liang is Fellow of the American Society of Agronomy and the Crop Science Society of America. He received the Distinguished Faculty Award of Gamma Sigma Delta in 2002. He was elected honorary professor by China Agricultural University, the Chinese Academy of Agricultural Sciences, Henan Agricultural University, and Shandong Academy of Agricultural Sciences.

He is married to Dr. Doreen S. Liang, a graduate of the University of Wisconsin, Madison, who specialized in Pharmaceutical Chemistry. They have a daughter, May, and a son, Roy. He and his wife have retired to La Jolla, California.



DR. LARRY SEITZ

Dr. Larry Seitz retired on 1 April, 2006, after nearly 34 years of service with the USDA–ARS Grain Marketing and Production Research Center as a Research Chemist in the Grain Quality and Structure Research Unit, Manhattan, KS. Dr. Seitz received his B.S. degree in Chemistry from Kansas State University in 1962 and his Ph.D. in Chemistry from the University of Illinois in 1966. From 1966 to 1972, he was Assistant Professor in the Department of Chemistry and Teaching Associate in the Department of Biochemistry at Kansas State University. On 9 July, 1972, Dr. Seitz began his career with the USDA.

Dr. Seitz is an adjunct professor in the Department of Grain Science and Industry and a member of the Graduate Faculty at Kansas State University. He served on the editorial board of AACC International as Associate Editor of *Cereal Chemistry* (1980–84). He was a member of the Mycotoxin Technical Committee of AACC International during his entire career in ARS. He served as Secretary (1984–85), Vice Chairman (1985–86), and Chairman (1987–87) of the Regional Committee NC-213 (Formally

NC-151), “Market and Delivery of Quality Cereals and Oilseeds”.

In general, Dr. Seitz’s research focused on the application of chemistry for determining the quality of grain in the commercial trade and/or being used for production of feeds and foods. He has considerable experience with chromatography and spectroscopy techniques needed to separate and identify chemical compounds in raw grains and grain-based products.

Dr. Seitz has been involved in a number of different projects during the course of his career. He started his career by developing and testing methods for determination of aflatoxin in grains, which soon lead to research on other mold metabolites. He was the first to identify metabolites of the mold *Alternaria* in grain sorghum and was involved in several investigations on toxicity and production of those metabolites in sorghum and rice. He developed the ergosterol assay for measuring total fungal invasion in grains which is now accepted worldwide and applied to many other biological systems besides grains.

Dr. Seitz identified relationships between fungal growth, grain respiration, and dry matter loss during storage of corn. In response to a widespread scab infestation in wheat in Kansas and other states in 1982, he investigated effects of scab on distributions of the mycotoxin deoxynivalenol among fractions from the cleaning and milling of hard and soft wheats. At the request of GIPSA-Federal Grain Inspection Service, Dr. Seitz developed methodology for determining volatile compounds in grains and identified relationships between volatile compounds and off-odors in corn, wheat, sorghum, and soybeans. In addition, numerous volatile compounds from molds, insects, and various foods, especially breads, were identified. The Grain Odor Project also involved evaluation of several electronic-nose instruments for potential to aid grain inspectors classify odors in grain samples being graded. In other research, various low-volatile components in wheat, corn, and sorghum were investigated, which included the identification of 2-oxo-resorcinols in wheat and several stanyl ferulates in corn and wheat. Subsequent research by others showed that the ferulate compounds have significant nutritional benefits in grain-based foods.

Dr. Seitz found compositional differences concerning red and white wheats and collaborated with other researchers in the development of methodology for color classification of wheat samples. In his latest research, Dr. Seitz has focused on determination of flavonoid compounds in sorghum grain that relate to seed color, damage by molds and insects, and possible antioxidant-related nutritional benefits in sorghum-based foods.

Dr. Seitz has authored or co-authored 80 peer reviewed journal papers, including 4 book chapters. He has made 47 invited presentations and published 60 abstracts. He is a member of AACC International, Gamma Sigma Delta (Honor Society of Agriculture), American Association for Advancement of Science, and the American Chemical Society.

He was invited to speak on the topic "Fungal Metabolites and Growth in Solid Substrate Fermentations" at the Gordon Research Conference on Fungal Metabolites: Biogenesis and Function, Plymouth, NH, 1978.

Dr. Seitz was invited to establish the ergosterol assay for measurement of mold invasion in grains at the International Crops Research Institute for the Semi- Arid Tropics in India, 1986. Dr. Seitz was also honored by the International Commission on Food Mycology and asked to present lectures on the development and applications of the ergosterol method for measuring mold contamination in grains and foods and the determinations of volatile compounds and odors in grains and foods at Uppsala, Sweden, 1998.