



### **Dr. Ted Labuza**

Theodore P. Labuza is a Morse Alumni Distinguished Teaching Professor of Food Science in the Dept. of Food Science and Nutrition at the University of Minnesota. Dr. Labuza received a B.S. (1962) and Ph.D. (1965) in Food Science at MIT (Cambridge, MA) and taught Food Engineering there until July 1971, when he went to the Univ. of Minnesota.

He is an author of 230 scientific refereed research articles, 16 textbooks, 73 book chapters, 7 patents and ~100 other semi-technical articles. Ted has graduated 73 MS and 27 Ph.D. students and supervised 25 undergraduate research projects and 35 visiting scientists and post-docs. He has given over 550 invited technical lectures since 1971 as well over 375 more general lectures on food science and technology. His recent books include Essentials of Functional Foods, Aspen Press with Mary Schmidl, Open Dating of Foods from Food and Nutrition Press, written with Lynn Szybist and Practical Aspects of Moisture Sorption Isotherm Measurement and Use. 2nd Edition AACC Egan Press, with Leonard Bell.

Dr. Labuza teaches courses in food physical chemistry, reaction kinetics, food safety and risk assessment, food processing and food law. For his teaching and advising Ted was given the Univ. of Minnesota H.T. Morse Alumni Distinguished Teaching Award in 1988 and in 1998 he was elected into the Univ. of Minnesota "Academy of Distinguished Teachers". In 2005 was chosen as a Senior Teaching Fellow. Ted was awarded the University of Minnesota McFarland Teaching Award for the College of Human Ecology in 2001.

His research is related to (1) the properties of water and its influence along with temperature on the processing, packaging and storage stability of foods, drugs and biologics, especially as related to texture and glass transition phenomena; (2) the physical chemistry and kinetics involved in processing and shelf life testing of foods, drugs and biologics,, (3) evaluation of time temperature integrators for food distribution and (4) evaluation of both growth and death kinetics of pathogens especially inactivation kinetics of bioterror agents. In 2001 Ted was selected to be in the group of the most highly cited scientists in the area of Agriculture and Food Science, based on citations to refereed research publications in the last 20 years. During Operation Desert Storm, Dr. Labuza served as a member of the U.S. Defense Dept. High Heat Environment Food Quality Task Force.

In 2003 Ted was chosen as a Sigma Xi National Distinguished Lecturer, was elected a Fellow of the World Innovation Foundation- Elected and was awarded the College of Human Ecology Advisory Council Award for Innovation and Mission Advancement in 2005. He is on the editorial board of 13 scientific journals including the new Jr. of Food Biophysics and on the Board of Govenoprs of IFT publications. He is also listed in 14 Who's Who including Who's Who in Business and Finance(1994); Who's Who in Frontiers of Science and Technology(1990); Who's Who in the World(1995); Who's Who in American Educators (1996), Who's Who in American Men and Women of Science (1997); and Who's Who in Science and Engineering (1997).



*RFID: A Solution to Traceability and Enhanced Shelf Life Dating of Foods and Drugs for Quality and Safety*

Several events in the past few years have heightened the government's and consumer's interest in traceability of foods, worldwide. The EU and the US governments have, since 9-11, in fact created new legislation requiring traceability on all food systems. In addition, the Cry-9 GMO incident with corn grown in the US and shipped worldwide, the spread of BSE outside of the UK including three cows that showed up positive in the US, the increased numbers of recalls due to E coli and Listeria with poor results. A recent GAO report indicates the sorry state in that most food in a recall is consumed before a recall is even initiated. The distribution of foods containing inadvertent allergens or allergen containing ingredients that could cause death because of anaphylactic shock has heightened the need for an active RFID based tracing system. These driving forces for tracing systems will be highlighted along with the growing interest in an active RFID that can sense time-temperature history and perform on chip calculations related to loss of quality and possible growth of pathogens like Listeria. The tracing-calculation tag then morphs into an on package system for identifying lapses in the distribution system with accompanying accountability, more than enough to off set the costs of implementation. Although there are problems in implementation an active battery powered RFID tag with data logging and data manipulation has the potential for Least Shelf Life Left-First Out (LSFO) distribution chain management which can do better than the current First In First Out System (FIFO) with the additional benefit in the reduction of food borne pathogen diseases.