

# Lee M. Hutchins Award

The Lee M. Hutchins Fund was established in 1979 by gifts from the estate of Dr. Lee M. Hutchins. The award, consisting of a certificate and income from the invested fund, is made for the best contribution to basic or applied research on diseases of perennial fruit plants (tree fruits, tree nuts, small fruits and grapes, including tropical fruits but excluding vegetables). The results of the research must have been published in an official journal of the Society.

## Jerry K. Uyemoto



**Jerry K. Uyemoto** was born in Fresno, California, on May 27, 1939. He earned a B.S. degree in agronomy in 1962 and M.S. and Ph.D. degrees in plant pathology in 1964 and 1968, respectively, all from the University of California, Davis. He was an associate professor at Cornell University, New York State Agricultural Experiment Station, Geneva, during 1968–1977 and professor at Kansas State University, Manhattan, from 1977 to 1981. While in Manhattan, Kansas, he worked at the biotechnology firm, Advanced Genetic Sciences, as a senior staff scientist for

two years. From 1984 to 1986, he was a visiting scientist at the University of California, Davis. He is now a research plant pathologist with the USDA, Agriculture Research Service (ARS), in the Department of Plant Pathology, University of California, Davis, where he has a courtesy appointment as lecturer and associate plant pathologist in the Agriculture Experiment Station.

Since receiving his doctorate, Dr. Uyemoto has held various academic and research positions, as indicated above, and conducted research on a variety of crop plants. During his tenure in New York State, he and his associates demonstrated that two nepoviruses (tobacco ringspot [TRSV] and tomato ringspot [TmRSV]) incited a severe decline of French hybrid grapevines. Through a series of pathogenicity tests, he determined that susceptibility to the virus among various French hybrid cultivars was from at least two *Vitis* species, and he further observed that susceptibility to TRSV and TmRSV was apparently independently inherited. Vineyard control of these soilborne viruses was by careful selection and use of resistant fruiting cultivars or rootstocks. Research contributions were also made on virus diseases of apple and annual crop plants.

While at Kansas State University, Dr. Uyemoto and a graduate student learned that although several grass species were hosts of maize chlorotic mottle virus (MCMV; a component of the corn lethal necrosis disease complex), none appeared to serve as an overwintering virus source. Later, he and another student

showed that the virus inoculum source was the infected corn residue and that control was mediated by crop rotation with a non-MCMV host (e.g., sorghum).

As a visiting scientist in California, Dr. Uyemoto worked mostly on the epicarp lesion disorder of pistachio. He and his associates showed that a number of hemipterous insects were involved and that the onset of symptoms was the direct result of a wounding response involving the enzyme peroxidase.

As an ARS scientist, Dr. Uyemoto and associates have developed data on the incidence of ilarviruses in young *Prunus* orchards and have begun a long-term assessment of their influence on tree performance. The research results here have produced an immediate impact on the fruit and nut tree industries; major revisions were implemented in the statewide nursery certification program and current operational practices of nurseries in California. For example, the California Department of Food and Agriculture, a regulatory agency, has adopted the ELISA protocols tested and/or established by Dr. Uyemoto for the serological indexing of all *Prunus* tree sources used for scion buds and seeds.

Dr. Uyemoto has determined that the agent responsible for almond brownline and decline (ABLD) is graft-perpetuated. This finding, in conjunction with results of orchard surveys, suggests that the disease is introduced into orchards through the planting of infected trees. More recently, Dr. Uyemoto has induced ABLD-like symptoms by using inoculum of peach yellow leafroll mycoplasma. In sweet cherry, on the basis of a five-year epidemiology effort towards the control of western X-disease, a revised integrated control program employing leafhopper vector control and tree sanitation practices is being implemented by orchardists. Also, a new procedure for the rapid field diagnosis of X-diseased trees on mahaleb rootstocks was developed. Last, a new stem pitting disease of cherry was identified. Evidence to date indicates the absence of TmRSV, the cause of Prunus stem pitting. Although the etiological agent is unknown, dsRNA analysis of symptomatic, but not healthy, tissues demonstrated the presence of a novel nucleic acid species of about 4.7 kb, to which a probe was recently made and is currently being used in the research effort.