

AMERICAN CHEMICAL SOCIETY HONOURS RALPH MUMMA AND MALCOLM THOMPSON

Nancy Ragsdale of the United States Department of Agriculture (USDA) reports on awards for outstanding research contributions made at the Fall Meeting of the American Chemical Society in Chicago

International Award for Research in Agrochemicals

Ralph O. Mumma was presented with this award, sponsored by DuPont Agricultural Products Company, on Monday, August 27, 2001 for his research contributions in environmental quality, chemical ecology, and biochemistry.

Dr. Mumma's award address, which had the eye-catching title of "Don't Tread on Me", examined his research on mite damage in geraniums (*Pelargonium × hortorum*). Eighteen years of research comparing insect-resistant and susceptible geraniums ultimately showed that the glandular trichome exudates from only resistant varieties contained specific unsaturated fatty acids, leading to unsaturated alkyl anacardic acids responsible for resistance. Thus, the title of the talk represented a message from resistant geraniums to mites to stay off!

The symposium which followed the award was organized by Jeanette Van Emon, U.S. EPA, and Terry Spittler, Cornell University. It was composed of three sections, each representing an aspect of Mumma's contributions

- chemicals associated with host-pest interactions, producing such effects as signaling for pest predators, suppressing a plant's natural defense system, and serving to reciprocally stimulate evolutionary responses.
- agrochemical fate in the environment as well as in cellular systems, including phytoremediation as a means to reduce residue availability, the potential for human exposure to agrochemicals in urban environments, use of cell cultures to study metabolic fate, and the likelihood that pesticides affect hormone signaling pathways rather than receptor molecules.
- immunochemistry and its use in analysis, looking at the introduction of this technology to the field of pesticide chemistry, as well as other agriculturally related disciplines.

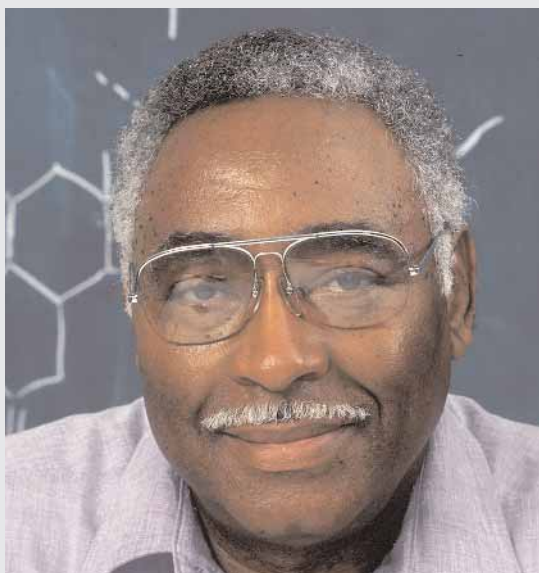
Sterling B. Hendricks Memorial Lectureship Award

On Tuesday, August 28, 2001, Malcolm J. Thompson was presented the Sterling B. Hendricks Memorial Lectureship Award, given by the Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA) and sponsored by the Division of Agrochemicals, ACS. This award was established by ARS in 1981 to honour the memory of a great scientist by recognizing scientists who have made outstanding contributions to the chemical science of agriculture.



Born in Carlisle, PA in 1934, *Ralph Mumma* spent his entire professional career at The Pennsylvania State University. In 1990 he was named Distinguished Professor of Environmental Quality. In 1997 the Ralph O. Mumma Professorship in Entomology was established at Penn State in his honour. Since retiring, he has been on the staff at Exygen Research, located in State College, PA. Ralph has been an active member in several professional societies and has served as treasurer of the Division of Agrochemicals, ACS, since 1995.

Presenting the Award, Adrianna Hewings, Director of the ARS Midwest Area, on behalf of the ARS Administrator, Dr. Floyd Horn, highlighted how Mr. Thompson's contributions in agricultural chemistry have influenced many diverse disciplines, including biochemistry, entomology, plant physiology, pharmacology, parasitology, and nematology. Dr. Hewings highlighted a number of accomplishments from Thompson's research that were not mentioned in his award address. He was instrumental in identifying epoxy methyl farnesoate, the predominant developmental hormone in insects, leading to a new generation of environmentally sound pesticides, including methoprene and hydroprene. In the field of plant biochemistry, Thompson made a major contribution by successfully synthesizing the first highly active analogs of the plant hormone, brassinolide. Prior to this development, large scale testing of such compounds was impossible due to the complexity of the chemical. This work



Born in Baldwin, Louisiana in 1927, *Malcolm Thompson* has held a series of U.S. government civilian jobs as a chemist, beginning with the U.S. Dept. of Interior, followed by the National Institutes of Health, the U.S. Army Chemical Center, and ultimately, ARS/USDA. He has received numerous awards, including induction into the ARS Science Hall of Fame in 1994 and election as a Fellow of the American Association for the Advancement of Science in 1967.

had international impacts, and commercial development of these compounds as plant growth enhancers continues.

Mr. Thompson is probably best known for his research related to insect ecdysteroids. For his award address, he chose to speak on "Structure, Function and Metabolism of Insect Steroids". Insects require a dietary source of sterol for normal growth, metamorphosis, and reproduction. Many plant-feeding insects convert phytosterols to cholesterol, which, in turn, is used in synthesis of ecdysteroids, which are involved in molting. By understanding the process of molting, inhibitors can be developed that interfere with the manner in which insects metabolize sterols and thus inhibit growth and development in immature insects.

Following a reception in Thompson's honour, a symposium featured speakers giving papers related to chemistry associated with pest-plant interactions. These addressed nematode metabolism of plant sterols, whitefly-pathogen-host plant interactions, rapid plant cell division promoted by weevil-produced bruchins, and enzyme targets in sterol synthesis as potential sites of inhibition for drug design and bioengineered resistance.

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ACS AGROCHEMICALS DIVISION

The next ACS National Meeting will be held in Orlando, Florida, April 7–11, 2002. The Agrochemicals Division program will include symposia on the following:

- Applications of Accelerator Mass Spectrometry to Biomedical and Environmental Research
- Chemistry and Toxicity of Pesticides and Related Products in Accidental Fires
- Innovative Analytical Techniques for Residues in ppb Concentrations
- Synthesis and Chemistry of New and Potential Agrochemicals
- HPLC/MS as Applied to the Analysis of Agrochemicals
- International Award for Research in Agrochemicals (Cosponsored with BASF)
- Young Scientists Recognition Award (Sponsored by Dow Agrosiences and Co-sponsored by the ACS Younger Chemists Committee)
- General Papers (Cosponsored with Fertilizer SubDivision of AGRO)

For more information on the ACS Agrochemicals Division see <http://membership.acs.org/A/AGRO/>