

Thomas C. Sparks is a leading entomologist in the field of agrochemistry. His pioneering research in green chemistry resulted in spinetoram, one of the most advanced insecticides to reach the market that couples excellent efficacy with a favorable toxicological and environmental risk profile.

Spinetoram received the U.S. Environmental Protection Agency's Green Chemistry Award in 2008. Since then, the industry has integrated spinosyns (compounds from the fermentation of the bacteria *Saccharopolyspora spinosa*) into several pest control programs around the world. By 2018, spinetoram's total sales reached more than \$1.4 billion, and the spinosyns are currently registered in 80 countries around the world. In 2018, Sparks and his team published groundbreaking research on the development of novel synthetic spinosyn mimics that are as effective in the field as spinetoram.

Sparks earned his bachelor's degree in biology from California State University, Fresno, and doctorate in entomology from the University of California, Riverside. He served as a faculty member at Louisiana State University's Department of Entomology from 1978 to 1989, and conducted pioneering research on insect juvenile hormone (JH) and JH esterase, insecticide biochemistry, and resistance. Sparks' research on JH esterase catalyzed more than 500 scientific papers by various authors on these agrochemical targets.

In 1989 Sparks joined Elanco, which became part of Dow AgroSciences, and shortly thereafter formed the Macrolide Research Group. That group coordinated much of the early spinosad-related research and development, from which spinetoram emerged as a successful product. Sparks remained at Dow AgroSciences (now Corteva Agriscience) for nearly 30 years in Discovery Research until his retirement in 2019, conducting research on new crop protection compounds, especially natural products. He now is an independent consultant.

Sparks holds more than 47 patents and pending patents and has authored more than 150 refereed journal publications, book chapters, and other articles. He has received numerous prestigious awards, including the American Chemical Society's Kenneth A. Spencer (2019), Innovation (2015; first time for an industry scientist), and International (2012) awards; and recently, the Entomological Society of America (ESA) 2018 Recognition Award in Insect Physiology, Biochemistry, & Toxicology (also the first time for an industry scientist). In 2009, *R&D Magazine* named Sparks Scientist of the Year (first ever for a scientist in the field of agriculture) and, in 2012, Sparks was named an ESA Fellow.