



# Environmental Studies and Analytical Support for the Agrichemical Industry



RTI International has decades of experience supporting the steps involved in the FIFRA pesticide registration process. These capabilities include:

- Independent Laboratory Validation (ILV) of Sampling and Analysis Methods
- Water Monitoring
- Crop and Soil Analysis
- Biologic Sample Analysis

Studies are performed in compliance with OECD guidelines, and work is conducted in compliance with Good Laboratory Practices (GLPs).

The wide variety of projects on which RTI scientists work requires heightened attention to communication, collaboration, and consulting. Many of our clients have complex problems with logistics, method development, analytical procedures, data quality requirements, and reporting. We have developed the capacity and expertise to help our clients address these problems in a timely manner.

The quality of our work is assured through:

- RTI's Quality Assurance Department, which provides internal QA for all government-regulated work.
- More than 25 years of experience providing the U.S. EPA with professional quality assurance and technical support for environmental research.
- Our comprehensive understanding of all aspects of chemical analysis acquired through advanced education and many years of relevant experience; for example, Dr. James Raymer has 15 years of experience in pesticide analysis.

We fully understand the customer's need for on-time delivery of results: we have delivered 150,000 fine particulate speciation measurement values on time to the EPA every month over the last five years.

Because timely and thorough communications are essential to the successful completion of any project, we routinely engage in teleconferences, face-to-face meetings, and/or rapid e-mail messaging with all our clients.



## Sample Projects

### Method Development

Applying its unique capabilities as a research institute, RTI developed and evaluated methods for the analysis of chemical contaminants, including pesticides, herbicides, and polyaromatic hydrocarbons (PAHs), in composite food and beverage samples.

### Water Analysis

In a study for the National Cancer Institute, water samples collected from wells close to food crop fields were analyzed for atrazine.

### Residue Analysis

In a study focused on children's health, RTI analyzed dust and soil samples for the pesticides chlorpyrifos, malathion, diazinon, and atrazine and also PAHs. This study for the U.S. EPA had a value of approximately \$750,000.

### Exposure Assessment

In a study valued at close to \$1 million, RTI measured dermal exposure to wood preservatives. The U.S. EPA used the data collected to update its risk assessment model for the preservatives.

RTI is fully capable of performing assessments of human exposure via inhalation, dermal, and digestive pathways.

### Toxicology

Industry is well aware of RTI's ability to perform complex toxicology studies.

### Program Leaders

**Dr. R.K.M. Jayanty** has 30 years of experience in trace organic environmental analysis. His successful organic analysis method development and quality



assurance work have resulted in both international and national awards including the American Chemical Society's national award for Creative Advances in Environmental Sciences and Technology.

**Dr. James Raymer** has nearly 30 years' experience as an analytical chemist focused on trace-level analysis. During the past 15 years, research in his laboratory has been directed to evaluating human exposures to pollutants in the environment, including pesticides, through the conduct of multimedia exposure analysis studies.

### Equipment and Facilities

RTI International has fully equipped laboratories for chemical analysis. State-of-the-art instruments are available for measurement, including ASE, automated SPE, LC/MS/MS, GC, HPLC, GC/MS, and UV/VIS spectrometry.

**Dr. R.K.M. Jayanty**  
(919) 541-6483  
rkmj@rti.org

**Dr. James Raymer**  
(919) 541-5924  
jraymer@rti.org

**RTI International**  
P.O. Box 12194  
Research Triangle Park, NC 27709



RTI International ([www.rti.org](http://www.rti.org)) is an independent, nonprofit organization dedicated to conducting research and development that improves the human condition. With a staff of more than 2,500 people, RTI offers innovative research and technical solutions to governments and businesses worldwide in the areas of health and pharmaceuticals, advanced technology, surveys and statistics, education and training, economic and social development, and the environment.

RTI International is a trade name of Research Triangle Institute.