

Pesticides and You

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News From the National Coalition Against the Misuse of Pesticides (NCAMP)

One in a series of NCAMP "How-To's"

Considerations in Choosing a Pesticide Residue Testing Lab

When do you need a laboratory?

If you foresee finding yourself in court, because of property damage or possible health effects, you will need to document your pesticide exposure.

Will positive results establish a link between health effects and pesticide exposure?

Not necessarily. Although cause and effect are difficult to establish, testing may detect the presence of the chemical in the physical or biological environment, thus strengthening a case.

What type of testing do you need?

You must decide, based on the nature of the chemical residue being tested for, what analyses are helpful to your case: a) *environmental testing*—soil, water, air, surface swabs, wood scrapings, carpet samples, etc. and/or b) *biological testing*—blood, urine, even fat biopsies. The biological tests required depend

on the chemical involved. For example, a blood test can detect acetylcholinesterase enzyme depression caused by organophosphate poisoning. Phenoxo acid residues, however, are measured in the urine. Organochlorines can sometimes be detected in the blood, but 100 to 300 times more may be detected in fat tissue.

What analytical methodology must the laboratory be able to perform?

The lab should be using validated methods of analysis for the particular pesticide, such as those published in the Pesticide Analytical Manual, in the Association of Official Analytical Chemists Manual, or by EPA. It should have an internal quality assurance program in place to make sure instruments and personnel are performing well. Check samples should be run on positive or borderline positive samples.

What else should you know about the

method used to detect pesticide residues?

In consultation with an independent scientist, either a toxicologist or an analytical chemist, determine how sensitive the method of analysis must be to be useful to you, and then determine whether the lab can perform reliable measurements at that level.

How should results be reported to me?

Numerical data should be reported in clearly identifiable units, for example, milligrams per liter, parts-per-million, etc. The laboratory should provide you with information about the adequacy of the method chosen for analysis, including percent recovery of spiked samples, results of a standard curve, and results of assay blanks.

More detailed information is available from NCAMP.

—by Diane Baxter