

**Sublethal Assay of Pesticides and Phenols Using the Nematode  
*Caenorhabditis elegans***

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The free-living nematode, *Caenorhabditis elegans* (*C. elegans*) has been adopted as a multicellular biosensor of biological toxicity for alkylphenol, organotin compounds and heavy metals. To adopt as a biosensor, suitability to assess must be fulfilled through several criteria; the organism must be sensitive to the testing toxicants, easy to manage in the laboratory and available throughout the year. *C. elegans* widely used as a simple multicellular organism in developmental biology studies and satisfies all these criteria, and its culture conditions, developmental staging, anatomy and genetic properties are well defined. In addition, researchers can take advantage of the worm's short life cycle, low cost and little individual variation. Moreover, genomic sequencing of *C. elegans* has recently been completed. With these aspects of the organism, *C. elegans* become a more potent model organism for basic and applied bioassays.

In previous documentations, bisphenol A and nonylphenol acute toxicity to *C. elegans* and fecundity and reproduction rates were evaluated and generational effects of steroids and synthetic hormones were demonstrated.

In the present study, lethal toxicity of pesticides (2,4-D, vinclozolin,

benomyl, methomyl and dicofol) and phenols (2-tert-butylphenol, 2-propylphenol, 4-propylphenol, nonylphenol, 2-phenylphenol, 4-phenylphenol and 4-dodecylphenol), reproductive toxicity of the chemicals and growth and mobility tests were performed by using *C. elegans* as indicator