History and Justification for IPM

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What is all the fuss about pesticides? Well, putting the more controversial issues of residues, contamination, and human health totally aside, pesticides are not the miracle cure for agricultural ills they were once thought to be. The basic premise of Integrated Pest Management (IPM) is that no single pest control method, including application of pesticides, always gives the best control. IPM advocates regular monitoring to detect pest problems early. One fundamental of IPM is that a certain number of pests and/or a certain level of pest damage may be tolerated. IPM also encourages integrating and evaluating biological, physical, and chemical control methods into a scheme that provides adequate pest control in an economically efficient and environmentally sound manner.

Native Americans and early settlers obviously did not have today's chemical controls available to them; they relied primarily on cultural and physical methods to control pests. Some of their practices are still in use, such as hand-removing beetles and caterpillars, removing diseased plants, destroying crop residues, tilling soil to kill overwintering pest stages, removing alternate pest hosts, and timing planting dates to avoid peak pest-damage periods. Methods like these gave adequate control of many pests during America's early history.

However, through the course of time, dramatic changes have occurred, mostly due to the intensification of agriculture and the importation of many plant pests from other lands. Chemical sprays were developed as a response to epidemics of imported plant pests. The new pesticides, like DDT, were markedly effective. However, by the late 1940s and early 1950s, scientists were noticing that some pests had developed a certain amount of resistance to different pesticides. They noticed that insect damage to certain crops became more severe despite the routine use of preventative insecticide cover sprays. Pesticide use continued and increased as new pesticides were developed. Some provided an alternative to older chemicals for which some pests had developed resistance, but pests continued to develop resistance -- it became a vicious circle.

While alternating pesticides was helpful, it became obvious that chemical application alone was not a complete system for pest control. Obviously, another system was needed. Some parts of the agricultural community went back to using some more-traditional approaches in combination with moderate pesticide use in more extreme infestation situations. This ecological approach to pest management has become known as IPM -- Integrated Pest Management -- and stresses profit per acre rather than yield per acre, as it can drastically cut the use of expensive pesticides, ideally without losing much in yield.

With the new emphasis on economic belt-tightening and environmental health in the 1990s, we would all do well to look at alternative ways of controlling pests. Effective, environmentally sound pest management requires considerable forethought and knowledge. You must be able to accurately identify plant pests and monitor their populations regularly. If you wait to act until your crop is nearly dead or heavily infested with pests, often your only recourse will be to plow under the plants -- or, at best, spray with a fast-acting pesticide that may or may not correct the problem. The old adage applies here -- an ounce of prevention is worth a pound of cure. Preventing pest problems, through the use of physical barriers (row covers, nets) and proper culture (optimum plant health, removal of pest-ridden plant parts before spreading occurs, sanitation) can go a long way toward reducing the need for chemical pesticides, whether you want to use less to save money or out of concern for personal health and environmental safety.

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