

to soil and tissue analysis recommendations; scouting for pests; use of economic thresholds, beneficials, bio-control, pheromones, irrigation practices, planting dates, mechanical cultivation, alternating pesticides, soil testing for pests, and sprayer calibration in pest management.

Specific Practices: Product applied, target pest, level of infestation; timing or frequency of applications; number of applications; application rate and method; pesticide product form; use of surfactants, stickers and non-adjuvants; and decision factors.

Environmental Factors: Temperature and rainfall during growing and harvesting periods, soil type, and location.

Specific and General Practices along with Environmental Factors may directly influence the occurrence of residues in tomatoes or strawberries in one or more of three ways or modes of action. First, any given practice or environmental factor may act to **encourage or discourage the development of pest infestations**, possibly impacting different pests or types of pests in different ways. For instance, over-fertilization of tomatoes or strawberries may make them more attractive to insect pests or susceptible to fungal diseases, thus requiring more applications of pesticides which could lead to higher residues. In subsequent paragraphs this will be referred to as mode one (1). Second, some cultural practices and environmental factors may **substitute for or influence the effectiveness of pesticides** used in crop protection. If such practices or environmental factors resulted in lower pesticide use, then a negative relationship would exist between their use and residue levels. For example, the use of pheromones to monitor insect infestations may reduce unnecessary spray applications while pheromones used as a control agent could substitute for insecticides by interfering with insect reproductive cycles. Of course other types of practices and environmental variables may diminish the effectiveness of pesticides, leading to more frequent or higher rate pesticide applications. In subsequent paragraphs this type of complementary or substitute action will be referred to as mode two (2). Third, various practices and environmental factors may **influence the fate of pesticides after they have been applied** to the crop. For example certain additives to pesticide spray mixes may retard or accelerate the breakdown of the pesticide's active ingredient. At another level, post-application overhead irrigation may wash off external residues. In subsequent paragraphs this will be referred to as mode three (3). With respect to Attributes, none of these three previous modes of action apply directly. As previously discussed, attributes are presumed to influence the decision-maker's selection of general and specific practices which in turn operate through one or more of the above modes to affect residues.

A wide assortment of inter-relationships may exist within and between general practices, specific practices, environmental factors, and attributes as defined above. Thus the paths and modes of causality between these variables and pesticide residues are not all direct or independent. Under such circumstances, it would be inappropriate to specify residues as a direct function of all these variables within a single equation. Consequently, a