

tests were not requested and no nematicide residues were reported in laboratory analysis of tomato and strawberry samples, this variable may be functioning as a proxy for pest management intensity. Soil testing for pests was generally positive in its relationship to residues. One exception to this result was for insecticide residues in strawberries, which was significantly negative. More frequent sprayer calibration was expected to be negatively related to residues, since spray equipment will tend to broadcast too much product as it becomes worn. This was not the case for tomato insecticides or aggregate pesticides. It did hold true though for insecticides in strawberries although this regression itself was insignificant. An alternative hypothesis for this variable is that the frequency of calibration is positively correlated with the frequency of pesticide applications. In other words, those growers who rely more heavily on pesticides, calibrate more frequently, and thus have more residues.

#### Irrigation, Crop Rotation, Days from Plant to Harvest, and Plant Density

The form and use of irrigation is postulated to alter the immediate environment of a field crop. Since some growers used more than one type of irrigation technology, the set of binary variables used to represent this production practice was not mutually exclusive and there was no need to choose a base variable. In the General Practices regressions, residue levels were negatively associated with the use of drip irrigation technology in both tomatoes and strawberries. Alternative forms of irrigation technologies used in strawberries included micro-jet and overhead systems. Micro-jet had a positive influence on fungicide residues while overhead irrigation positively impacted insecticide residues but negatively affected fungicide residues. Gravity or seep irrigation was also used by tomato growers, but could not be included in the regression due to a linear dependency.

Crop rotation is believed to help reduce many types of pest problems. This hypothesis was confirmed for fungicide residues in tomato production but refuted for insecticides in strawberries. Strawberries and tomatoes which were sampled later in their growing season were found to have fewer fungicide and insecticide residues, respectively. This runs counter to the hypothesis that early season varieties or plantings might have fewer pest problems and require fewer pesticide treatments. Other factors related to the timing of crop production that might influence residues were presumed to be captured through the temperature and rainfall variables. Spacing between plants or plant density could not be completely represented in the models due to an improperly worded survey question regarding row width. Consequently, only the distance between plants within the row could be used in these regressions. Surprisingly, this variable was positive for insecticide residues in both strawberries and tomatoes (wider spacings were linked with higher residues). More in line with expectations was its significant negative relationship to fungicides in strawberries. The rationale here was that higher plant densities (shorter distances between plants) are more favorable to various of pest infestations, thus leading to more pesticide applications.