Referring to Table 1, the vast majority of pesticide residues detected in Florida tomatoes and strawberries are insecticides, miticides, and fungicides. Overall, there were 13 different insecticide-miticide compounds detected and five different fungicides. One type of herbicide residue was found in just two of the 338 samples for which interviews were conducted. No nematocides or bactericides were detected. EPA tolerances for pesticides vary between strawberries and tomatoes. In several instances, a particular pesticide has no tolerance level for one commodity but is approved for use on the other. This variation between commodities is often due to allocations made by EPA based on estimates of total dietary intake or quantitative risk assessments of a given pesticide residue from the consumption of many different foods over a lifetime. Such allocations are sometimes based on the relative importance or average level of consumption of each commodity. In some cases the importance or benefit of a particular pesticide in protecting a given commodity from pest infestations may be considered. The variation in tolerance levels between different pesticides is in large part due to differences in their toxicologic, oncogenic and mutagenic properties.

Descriptive statistics on aggregated types of residues found in strawberry and tomato samples for which interviews were successfully completed are shown in Tables 2 and 3. Generally, there is no coordination between produce sampled at different market stages. Occasionally, if a problem is first discovered at the packer or distributor stage, it may be traced back up the market channel to the producer. When samples are found to have residues at levels above EPA tolerances, harvesting is suspended or the lot is held in storage until confirmatory sampling can be done within three to five days. Samples taken by FDACS for this purpose were not used to calculate descriptive statistics for residues. Statistics provided for each type of pesticide include: the proportion of samples found to have no detectable residues, the proportion found to have a residue level exceeding its EPA tolerance, the minimum and maximum parts per million found for each residue, the mean, standard error, median, standard deviation and coefficient of variation for each type of residue. It should be noted that relatively small sample sizes for strawberries at the packer and distribution market stages resulted in large standard errors for the means as shown in the last column of Table 2.

By examining Tables 2 and 3, and Figure 2 below, some inferences about the nature of pesticide residues and pesticide use in strawberries and tomatoes can be deduced. Looking at Table 2 and Figure 2, it can be seen that fungicides are the dominant type of pesticide residue found in Florida strawberries. At the grower stage less than five percent of the samples contained no detectable residues of fungicide, with a mean level of 4.92 parts per million (ppm). Roughly similar statistics for fungicide residues are found for strawberries at the other two stages, although the sample sizes for these are much smaller. In comparison to fungicides, insecticide residues were found in approximately 38 percent of strawberry samples from the grower stage at an average level of 0.2388 ppm. Descriptive statistics for the pesticide residues found in tomatoes are shown in Table 3. In contrast to strawberries, the predominant type of residues found in tomatoes are insecticides and miticides. Overall, tomatoes carry a considerably lower load of pesticide residues than do strawberries.