Increased demand for more production on less land has pushed farmers into a sophisticated agriculture which relies heavily on the use of chemicals to control pests.

Some of the chemicals, or pesticides break down rapidly after use and are considered harmless. Others leave residues for years and could be considered dangerous. They all behave differently.

At Clemson University, SC Experiment Station soil chemist K. S. LaFleur is taking a close look at the behavior of pesticides applied to the soil in an effort to determine their long-term effects on crops and consumers.

About 1,200 pesticides, in some 35,000 formulations are registered with the U.S. Environmental Protection Agency. How safe are they?

Before soils can be considered marginally safe, LaFleur says, “they must lose at least 90 percent of applied pesticides.”

Because testing a single material for its residual effects is a long, tedious process, LaFleur is constructing a mathematical ‘prediction model’ designed to evaluate long-term effects of pesticides. The model is based on intense study of 12 of the most representative pesticides, chosen for their diverse chemistry and usefulness in South Carolina.

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