

The Influence of Farm Advisory Services and Socio-Economic and Physical Factors on the Toxicity of Pesticides Used for Cotton and Peanuts in the Albemarle-Pamlico Watershed

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(ABSTRACT)

The research undertaken in this study is an attempt to determine the influence of farm advisory services, socio-economic factors, and physical factors on the aggregate toxicity of pesticides used by cotton and peanut farmers in the Albemarle-Pamlico Watershed of Virginia and North Carolina. An aggregate toxicity index is developed for all pesticides used on each farm site. Four different types of farm advisors are considered in this study, namely, hired staff, university and state extension agents, chemical dealers, and scouting personnel. Regression analysis is used to estimate how the aggregate toxicity index and the aggregate pesticide expenditures were affected by farmers' choice of the most important farm advisory services; the farmer's age, education, and farming experience; productivity of the soil; soil erosion index; distance of farm from nearest water source; and the state in which the farm was located.

The results of this study indicate that hired staff, scouting personnel, and extension agents are associated with higher aggregate toxicity of pesticides on cotton farms, while scouting personnel and chemical dealers are associated with higher aggregate toxicity of pesticides on peanut farms. More years of farming experience is associated with a slight decrease in aggregate toxicity on cotton farms. Increasing age of farmers is associated with a slight increase in aggregate toxicity on peanut farms.

Training of farm advisors should include information about potential environmental damage from alternative pesticides. Advisors should be informed about the effects of soil physical characteristics on potential for environmental damage from pesticide use. Farm advisors should also be trained in methods to disseminate information to farmers on pesticide toxicity to the environment. More information on pesticide toxicity could also be publicized on pesticide packages. Continued research on less toxic pesticides and alternative pesticides is also an important strategy to reduce pesticide toxicity.