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Perceptions of secondary school agriculture teachers in the North Central Region of the U.S. regarding sustainable agriculture: implications to curriculum development in agricultural education

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[Kehinde Aderemi Ajaiyeoba Agbaje. Iowa State University](#)

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Doctor of Philosophy

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Agricultural Education and Studies

First Advisor

Robert A. Martin

Abstract

The major purpose of this study was to determine the perceptions of secondary school agriculture teachers in the North Central Region of the US regarding sustainable agriculture, the extent to which they teach the subject in their curriculum, and the use, credibility, and benefits of selected information sources. A secondary purpose was to develop a model to guide the integration of sustainable agriculture subject matter into the curriculum. Overall, the teachers had positive perceptions and a basic understanding of sustainable agriculture practices. Teachers in this study expressed the desire to incorporate more of the subject into their curriculum if their needs regarding provision of adequate information, instructional aids and materials, and training were met. The respondents indicated that sustainable agriculture was economically viable. The findings in this study indicated that teachers included sustainable agriculture subject matter in their instructional programs to a moderate extent. Some of the topics that were taught included soil testing, soil erosion, and crop rotations. The following topics were not being taught to any great extent reduced use of chemicals, reduced use of fertilizers, and herbicide-resistant crops. Teachers perceived that farmers used the following sources to gain information about sustainable agriculture: magazines, neighbors, friends, family members, local chemical and fertilizer dealers. However, university specialists were rated as the most credible sources of information. Other credible sources of information included tours, magazines and friends. The sources given the least ratings on credibility were television and radio programs, commodity promotion boards, newspapers, machinery dealers, and local seed and chemical dealers. Beneficial sources were similar to those observed for credibility. A curriculum development model was designed to assist educators to integrate sustainable agriculture subject matter into the teaching of agriculture courses. It was concluded that teachers need more training, experience, and instructional materials to enable them to help secondary school students to learn more about sustainable agricultural practices.

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Agricultural Education is the teaching of agriculture, natural resources, and land management. At higher levels, agricultural education is primarily undertaken to prepare students for employment in the agricultural sector. Classes taught in an agricultural education curriculum may include horticulture, land management, turf grass management, agricultural science, small animal care, machine and shop classes, health and nutrition, livestock management, and biology. Vocational Agriculture Education Vocational agriculture has a long history in American education. The reasons for this are agriculture is economically important in the South, social and cul- tural conditions create expectations for the schools to teach vocations, and many Southerners practice small-farm agriculture as a way of life (Lee, 19861. In 1986, 40.7 percent of vocational agriculture teachers in secondary schools taught full-time in produc- tion agriculture programs; 30.0 percent were ir1 part-time production agriculture programs with one or more classes in specialized programs, such as agricultural mechanics; and the remainder taught classes in ornamental horticulture, natural resources, agricultural products, ag- ricultural sales and services, and agricultural mechanics. Sustainable agriculture is a global philosophy guiding the development of agricultural systems that address economic, social, and environmental issues in a multidisciplinary manner. Sustainable agriculture requires a holistic, system-oriented approach to solving problems in the food and fiber industry. Including sustainable agriculture in the high school agricultural education curriculum would allow the agricultural education profession to become a partner in achieving the goals of a sustainable agriculture industry and at the same time enhance the scientijic nature of the curriculum; however, research is needed to show the way. Northeast Region Sustainable Agriculture Research Program, Hills Building, University of Vermont, Burlington, VT 05405. How we develop and maintain our agricultural systems is crucial to public health, as well as to local, national, and international economies. If you want to make a difference in this important field, consider taking courses in agricultural science. What is a course in agricultural science, you ask? What is a course in agricultural science, you ask? Courses in agricultural science encompass a broad multidisciplinary field of biological-based natural, economic, and social sciences that are used in the practice of agriculture. Typical courses that fall under this topic of study include animal science, basic horticulture, and soils and pesticides. Additionally, some courses incorporate a field study in their curriculum, which often increases the cost of the course. Sustainability in Agriculture has become increasingly important over recent times. It is no longer sufficient to just be productive and the cost of production is no longer just thought of in terms of money. The environmental resources of a farm as well as the financial must not deteriorate if a farm is to continue to exist into the future. Lesson Structure. There are 8 lessons in this course Have a cross section (the profile of the windbreak looking at it from the end of the windbreak) that results in the smooth passage of some wind up and over the windbreak (known as an aerofoil cross section). To achieve this you would have low growing plants at the front of the windbreak, slightly bigger growing plants behind them, and taller plants behind them.