DOCUMENT RESUME

ED 354 365 CE 063 089

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| TITLE | Strategies To Promote Agricultural Literacy. |
| PUB DATE | 5 Dec 92 |
| NOTE | 22p.; Developed by the American Association for Agricultural Education Ad Hoc Agricultural Literacy Work Group at the American Vocational Association Convention (St. Louis, MO, December 5, 1992). |
| PUB TYPE | Viewpoints (Opinion/Position Papers, Essays, etc.) (120) |
| EDRS PRICE | MF01/PC01 Plus Postage. |
| DESCRIPTORS | Adult Education; Agribusiness; *Agricultural Education; Agricultural Production; *Agriculture; *Consumer Economics; Consumer Education; *Economic Impact; Elementary Secondary Education; Leaders; National Programs; Natural Resources; Program Content; Program Development; Program Implementation |
| IDENTIFIERS | *Agricultural Literacy |

ABSTRACT

The purpose of the agricultural literacy effort has been to produce informed citizens able to participate more fully in the establishment of policies that support a highly competitive agricultural industry in this country and abroad. In their article titled, "Position Statement on Agricultural Literacy," Russell, McCracken, and Miller (1990) propose guiding principles for development and implementation of agricultural literacy programs, purposes, objectives, and content. The basic purpose is to achieve an awareness and understanding of the significance of agriculture in the lives of all people. Programs should be targeted toward all youth--particularly school-age youth at all grade levels--and adults. Basic content includes the following: origination, processing, and distribution of food and fiber; wise use of natural resources; human and animal health and nutrition issues; agriculture trade issues; and geopolitical issues related to food. A coordinating group at the national level must be developed to identify and promote a model delivery system for agricultural literacy efforts in each state. Although agricultural educators are but one of many proponents of agricultural literacy, they are best qualified to provide leadership for such efforts in local communities. Promotional material templates should be developed at the national level for modification and use at the local level. (Appendixes include a list of 21 selected agricultural literacy reference materials.) (Contains 8 references.) (YLB)

# STRATEGIES TO PROMOTE AGRICULTURAL LITERACY



by

1992 AAAE Ad Hoc
Agricultural Literacy Work Group
Robert J. Birkenholz, Facilitator

Saturday, December 5, 1992
Marriott's Pavilion
St. Louis, Missouri

## AAAE AGRICULTURAL LITERACY WORK GROUP

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## WORK GROUP GOAL

Describe the purposes of agricultural literacy, to identify activities appropriate for the purpose, recommend how activities should be organized, and design strategies to evaluate the effectiveness of the activities.

# AGRICULTURAL LITERACY

The concept of agricultural literacy has received increased attention over the past decade, although its roots can be traced to instructional efforts in public and private secondary schools beginning in 1821. However, most of the early growth in agricultural education occurred between 1900-1916. Many primary schools at the turn of the century included agricultural subjects in the general education curricula. This movement was initiated to counteract the effect of increasing numbers of citizens who were being raised off the farm (Hamlin, 1949).

In addition to providing instruction in general agriculture for non-farm students, vocational agriculture programs were created to prepare students for careers in agriculture as a result of the Smith-Hughes Act of 1917. Over the intervening years, general agricultural education courses and curricula have been de-emphasized as more attention has been directed toward vocational education programs in agriculture. More recently, there is evidence to suggest that this trend has begun to move in the opposite direction.

During the decade of the 1980's, several major events in education had a direct impact on agricultural education. Most importantly, the A Nation at Risk report (National Commission on Excellence in Education, 1983) called to the attention of the American public, the "rising tide of mediocrity" in our nation's schools. Coinciding with this and numerous other reports, a national education reform movement was initiated. Educational reform efforts have resulted in a redefinition of the "basics" of education and

have increased the call for accountability. Public schools have been asked to re-examine the curriculum and the extracurricular activities which have been provided for students. High school graduation standards have been increased in an attempt to provide students with the competencies needed to be successful in the mainstream of American society. Further questions have been posed with regard to limiting student absences from classes for school- and non-school-related activities and lengthening the school day and year.

Agricultural education has also undergone a period of transition following events of the 1980's. The most significant event was the release of the National Research Council (NRC) report Understanding Agriculture: New Directions for Education (1988). Authors of the report noted that "agriculture - broadly defined - is too important a topic to be taught only to the relatively small percentage of students considering a career in agriculture and pursuing vocational agriculture studies." (p. 8).

The NRC report developed recommendations to improve the vocational agriculture programs offered in secondary schools in this country. However, a major component of the report focused on the topic of "agricultural literacy." Since the release of the NRC report, the Agricultural Education profession has directed significant attention toward the agricultural literacy concept.

Russell, McCracken, and Miller (1990) reported that fewer than 5% of American high school students enroll in vocational agriculture courses. They also reported that a very small percentage of elementary and junior high school-

aged students receive instruction about agriculture through existing "Ag in the Classroom" (AITC) and 4-H programs. Therefore, graduates of the American educational system can hardly be expected to develop an accurate understanding of, or an appreciation for the role of agriculture in their lives when the subject is virtually ignored in the curriculum.

Numerous authors have reported on the potential threat which arises when a majority of a nations's population lacks a basic understanding of the industry which produces and distributes the food needed to satisfy one of the most basic of all human needs. Hamlin reported as early as 1962 that the general public needed to develop some degree of agricultural literacy when he wrote:

> . . . public policy which governs and controls agriculture is policy they (the voters) make, not policy which farmers make. They must [the voters] be sufficiently aware of the revolution in agriculture and its implications to approve policies which will sustain and improve agriculture and be fair to the people who engage in it, recognizing that in their blindness they could "kill the goose that laid the golden egg" (p. 58)

Hamlin recognized that the productivity of agriculture had enhanced the standard of living in this country to the point that the vast majority of citizens take food, its production and availability for granted. As a result of this societal transformation, numerous popular movements have emerged which have the potential to impact the industry of agriculture, food, and food production in a negative manner. Hamlin's suggestion was based upon the proposition that policy decisions contemplated in the future should be made

with a full consciousness of the resulting implications for the food and agriculture industry. The fear of many is that future decisions made without consideration of agriculture may have long-lasting, even devastating effects on agricultural productivity in this country. It is the prevention of unanticipated and ill-advised effects on agriculture, that the agricultural literacy effort is directed toward. The belief that education is preferred to ignorance, and informed decision making is preferred to irrationality, provides the philosophical basis for agricultural literacy efforts. Mawby (1984) addressed this point most succinctly when he stated, "Many bad decisions affecting food production can be traced to a lack of understanding about agriculture on the part of the 97 percent of our people who don't live on farms" (p. 72).

Nipp (1988) also noted the implications of societal demographic trends which have resulted in the election of politicians who represent predominantly metropolitan areas. He reported that few members of congress understood most agricultural issues and that the majority of all representatives were inclined to address such issues from the perspective of a consumer rather than a producer. One example of this trend involved the selection of members for the Agriculture Committee in Congress. Mayer and Mayer (1974) reported that only those politicians with an interest in farming had volunteered to serve on the House or Senate Agriculture Committee or its Subcommittees. This self-selection process has fostered large-scale government programs which have been designed to benefit a relatively narrow class of agricultural producers without regard for consumers or an overall production policy.

The National Research Council report urged the expansion of agricultural education beyond the scope of traditional vocational education. Agricultural literacy was proposed as a major function of agricultural education, broadly defined. The purpose of the agricultural literacy effort was to produce informed citizens who would be able to more fully participate in the establishment of policies which support a highly competitive agricultural industry in this country and abroad (NRC, 1988).

Most Americans, whether they be young or old, have limited knowledge about agriculture. While it may be hard for "John Q. Public" to define agricultural literacy, it should not be hard for them to have a basic understanding of agriculture, the agricultural industry, its importance to our country, and the people who live in it. The National Research Council report on agricultural education in 1988 reported that, "Most Americans know very little about agriculture, its social and economic significance in the United States, and particularly, it links to human health and environmental quality. Few systematic educational efforts are made to teach or otherwise develop agricultural literacy in students of any age . . ." (p. 9). This is why the Council recommended that: "Beginning in kindergarten and continuing through twelfth grade, all students should receive some systematic instruction about agriculture." (p. 2)

The National Research Council committee defined "agriculture" as follows:

> . . . the production of agricultural commodities, including food, fiber, wood products, horticultural crops and other plant and animal products. The term

also includes the financing, processing, marketing, and distribution of agricultural products; farm production supply and service industries; health, nutrition, and food consumption; the use and conservation of land and water resources; development and maintenance of recreational resources; and related economic, sociological, political, environmental, and cultural characteristics of the food and fiber system (p. vi).

The committee went on to define agricultural literacy as, "An understanding of basic concepts and knowledge spanning and uniting all of these subjects" (p. vi).

It was noted that an agriculturally literate person's understanding of the food and fiber system includes its history and current economic importance, social impact, environmental significance, and awareness and understanding of careers in agriculture. Food and fiber production, processing, and domestic and international marketing should complement instruction in other academic subjects. It should also include enough knowledge about nutrition to assist a person in making choices related to diet and health. In addition, agriculturally literate citizens should be able to assist in establishing policies that will support a competitive agricultural industry in the United States and around the world.

Russell, McCracken, and Miller proposed the following guiding principles, purposes, objectives, and content as stated in their article titled, "Position Statement on Agricultural Literacy," which was published in the March, 1990 issue of The Agricultural Education Magazine. The principles, purposes, objectives, and content suggested by

Russell, McCracken, and Miller were as follows:

GUIDING PRINCIPLES:

The following guiding principles are suggested for the development and implementation of agricultural literacy programs:

1. Every citizen of the United States should possess a basic understanding of agriculture.

2. Schools and other agencies of government have a responsibility to educate the citizenry concerning agriculture and its role in American society.

3. Students should be able to apply scientific principles to agricultural applications.

4. By definition, agricultural literacy programs are too broad and pervasive in concept to be implemented through traditional structures of vocational agriculture and state divisions of vocational education.

5. Agricultural literacy programs should be incorporated, insofar as possible, into existing efforts of USDA such as Ag in the Classroom and Cooperative Extension Service programs for youth and adults, state departments of education (in departments other than vocational and technical education), and universities. (p. 13)

PURPOSE:

The basic purpose of agricultural literacy programs should be to achieve an awareness and understanding of the significance of agriculture in the lives of all people. To achieve this purpose, the following objectives are suggested:

1. To develop an understanding of ethical and environmental issues affecting agriculture.

2. To develop the ability to grow and care for plants and animals.

3. To develop an understanding of the relationship between agriculture and diet.

4. To develop an appreciation for agriculture's relationship to national and international economic and trade systems.

5. To develop an understanding of issues relating to agricultural policy of the federal government.

6. To develop an awareness of the broad diversity of agricultural careers (p. 14).

OBJECTIVES:

The objectives should be pursued with a variety of clientele groups. Agricultural literacy programs should be targeted toward all youth -- particularly school age youth at all grade levels -- and adults. Specifically, the following client groups are suggested:

1. Agricultural literacy programs should be given special emphasis in urban areas, and particularly suited to minority and female audiences who are now under-represented in the agricultural industry.

2. Agricultural literacy programs should be directed toward parents, educators, consumer groups, business leaders, government officials, policy makers, and other citizens through mass media and targeted intensive efforts such as conferences and workshops.

3. Agricultural literacy programs should be directed in unique ways to people in rural areas who often view agriculture from a farming perspective, rather than the broad definition presented earlier.

4. Teacher education (preservice and inservice) should be provided to all teachers about agriculture.

5. University students at large should receive agricultural literacy instruction, following many of the examples reported by Douglass (1985), including universities which do not have agricultural colleges or departments. (p. 14)

CONTENT:

Agricultural literacy programs should focus heavily around the content areas suggested in the National Research

# AGRICULTURAL LITERACY PROGRAM MODEL

| Target Audience | Concepts | Groups Responsible |
|---|---|---|
| **Elementary School Students** | Agriculture's relationship with the environment<br>Plant growth, products, and basic production<br>Animal growth, products, and basic production<br>Food distribution and related problems<br>Nutrition (human and animal)<br>Hunger<br>Food costs<br>Urban opportunities in agriculture | Elementary teachers<br>Commodity groups<br>FFA members<br>Cooperative Extension/4-H clubs<br>General Farm Organizations<br>Ag in the Classroom programs<br>Council for Agricultural Education<br>Young Farmers/Young Farm Wives |
| **Middle and Secondary School Students** | Effect of agriculture on the environment<br>Environmental impact on agricultural production<br>Food production, processing, and safety<br>Nutrition (human and animal)<br>World hunger and the global economy<br>Animals in our society<br>Genetics and biotechnology<br>Rural life and society<br>Economic benefits of agriculture<br>World trade and marketing<br>Urban opportunities in agriculture | Agricultural educators<br>FFA members<br>FFA Alumni<br>Commodity groups<br>State Department of Agriculture<br>Colleges of Agriculture<br>Social Studies teachers<br>Council for Agricultural Education<br>U.S. Department of Agriculture<br>U.S. Department of Education<br>Cooperative Extension Service |
| **Adults in American Society** | Sustainable agriculture<br>Food safety and processing<br>Government subsidies and agricultural policy<br>Agriculture's impact on foreign trade<br>Consumer issues<br>Nutrition and health<br>Genetic Engineering/Biotechnology<br>Global significance of agriculture<br>Economic benefits of agriculture<br>Global hunger and food distribution | State Department of Agriculture<br>U.S. Department of Agriculture<br>Commodity groups<br>General farm organizations<br>Colleges of Agriculture<br>Agricultural magazines<br>Agricultural industry<br>Special interest groups<br>Cooperative Extension Service<br>Council for Agricultural Education |

Council report, Understand Agriculture: New Directions for Education (1988). The following topics should be basic to a comprehensive program of agricultural literacy:

1. An understanding of the broad definition of agriculture.
2. How food and fiber originate.
3. How food and fiber are processed and distributed.
4. The global economics of food and fiber.
5. Food safety and quality issues (preservation, pests, pesticides, etc.).
6. Wise use and management of natural resources (water, soil, minerals, energy, the oceans).
7. Global climates issues (deforestation, water, soil, drought, etc.).
8. Global population issues related to food production and distribution.
9. Human and animal health and nutrition issues (diet, animal agriculture, etc.).
10. The application of science and business principles to agriculture.
11. Agriculture trade issues.
12. Geopolitical issues related to food.
13. Care for indoor and outdoor environments, including lawns, gardens, interior plantscapes, recreational areas, and parks. (p. 14)

The history and contemporary significance of agriculture for all U.S. citizens, especially relating to the subject areas of nutrition, economics, society (sociology), and environment, should be understood by all. (p. 14)

Organizational Structure

Many groups and agencies have demonstrated an interest in contributing to the promotion of agricultural literacy. However, in the past, most of the activities have occurred in isolated fragments without coordination. There is a need to develop a coordinating group at the national level to identify and promote a model delivery system (see Figure 1) for agricultural literacy efforts in each state. In addition to the promotion of a program model, certain support activities and materials should be developed to maximize the efficiency of the promotional effort.

Many groups, including agricultural educators, have important roles to play in contributing to the development of an agriculturally literate public. In addition, there is a need to direct attention toward enhancing the image of agriculture among the general public. Key groups in the effort should include but not be limited to:

* Agricultural Educators
* Public Schools
* FFA Alumni Groups
* Agricultural Industry
* Agricultural Magazines
* Colleges of Agriculture
* Commodity Groups
* Special Interest Groups
* General Agriculture Organizations
* Agricultural Extension
* Agricultural Education Advisory Committees
* FFA, PAS, Young Farmers/Young Farm Wives
* Government Agencies (USDA, SCS, ASCS)

While agricultural educators are but one of many proponents of agricultural literacy, they are perhaps the best qualified to provide leadership for such efforts in local communities. Agriculture teachers may be best suited to serve as a catalyst to promote activities to enhance agricultural literacy in some local areas. However, many communities, especially large metropolitan areas, require a more significant and necessarily complex effort to accomplish the desired result. Specific activities that may be appropriate include:

* Radio/TV Programs
* Petting Zoo, Children's Barnyard
* Fair Exhibits
* Newspaper and Magazine Articles
* Educational Displays
* Agricultural magazines in elementary and middle school libraries
* Liaison with agricultural groups
* Agricultural Speakers Bureau
* FFA Chapter Safety and BOAC programs
* Community Gardens
* Farmers' Markets
* FFA Food for America Programs
* National FFA Week Programs
* Adult education classes
* Field Trips for elementary and middle schools
* Middle School Agriculture Courses
* Resource persons for elementary and middle school teachers.

Leadership at the national level for an agricultural literacy effort should be directed and coordinated by

representatives of several groups with a vested interest in the outcome of the effort. Primary support should be solicited from the U.S. Department of Agriculture and the U.S. Department of Education. A national center for agricultural literacy should be organized as a consortium involving several states with a primary interest in the promotion of agriculture. The National Center for Agricultural Literacy should be oriented toward providing leadership for developing an action plan with appropriate implementation strategies designed to enhance public knowledge of agriculture, food, and natural resources.

Promotional material templates should be developed at the national level for modification and use at the local level. A national advisory panel should be convened to assess programmatic needs, review current program efforts, and to guide future agricultural literacy efforts on a broad scale.

The National Center for Agricultural Literacy should also be charged with the responsibility for providing resource support needed to implement the proposed Agricultural Literacy Program Model presented in Figure 1. Most importantly, the national center should direct initial efforts toward the development of coordination frameworks which could be adapted for use in each state. Additional attention should be directed toward the development and dissemination of appropriate resource materials for use in state and local agricultural literacy efforts.

Teachers in elementary and secondary schools should also be encouraged (possibly required) to develop a greater understanding of the importance of agriculture to all people. Instructional assistance should be provided through inservice

programs to facilitate the use of agricultural illustrations in elementary, middle, and secondary school classes. College students, especially those attending land-grant institutions, should be required to develop an awareness of and appreciation for agriculture prior to their graduation from any degree program. Graduates of higher education institutions should not be viewed as 'fully educated' if they lack an awareness of the importance of agriculture in their daily lives.

The development of agricultural literacy among all residents of the U.S. will require a multi-dimensional effort. Each institution in this country, whether public or private, large or small, commercial or non-profit, has an opportunity to contribute to the agricultural literacy of their clientele groups. Such information is needed by people of all ages to enable them to make informed decisions about the food they eat each day. The Agricultural Education profession should assume a leadership role in initiating and promoting these efforts.

Selected Agricultural Literacy Reference Materials

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Agriculture in the Classroom, South Carolina Department of Education.

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Aquatic Field and Classroom Activities (1988). Conservation Education Unit, Education Section, Missouri Department of Education, P.O. Box 180, Jefferson City, MO 65102.

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Experiments in Food Science (1985). The Institute of Food Technologists, 221 North LaSalle Street, Chicago, IL.

Exploring Agriculture in America (7th & 8th grade curriculum guide) (1991). Instructional Materials Laboratory, University of Missouri, Columbia, MO.

Farm and Food Bytes, Three agricultural literacy computer programs for grades 4-8, Agri-Education, Inc.

Food for America program materials, National FFA Organization.

Food, Land & People (non-profit organization supporting agriculture and conservation). 408 East Main, League City, TX 77573.

4th Grade Agriculture Curriculum Supplement, Indiana Agriculture Awareness Council.

Groundwater: A Buried Treasure, NVATA Groundwater Project, National Agricultural Education Center, Alexandria, VA.

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