The Agricultural Education Magazine

March 1990
Volume 62
Number 9

PROGRAM MODEL

NEW DIRECTIONS FOR AGRICULTURAL EDUCATION

GRADE LEVELS	AGRICULTURAL LITERACY	CAREER EXPLORATION	CAREER PREPARATION
K - 6	////////////////		
7 - 8	////////////////	////////////////	
9 - 12	////////////////	////////////////	////////////////
			Articulated With
Post Secondary	//////////////// ////////////////	//////////////// ////////////////	//////////////// ////////////////
University	////////////////		////////////////
Continuing With			
Adult	////////////////		////////////////

THEME: Delivering Agricultural Literacy

THE
AGRICULTURAL EDUCATION
MAGAZINE

March, 1990 Volume 62 Number 9

Table of Contents

ARTICLE SUBMISSION

Articles and photographs should be submitted to the Editor, Regional Editors, or Special Editors. Items to be considered for publication should be submitted at least 90 days prior to the date of issue intended for the article or photograph. All submissions will be acknowledged by the Editor. No items are returned unless accompanied by a written request. Articles should be typed, double-spaced, and include information about the author(s). Two copies of articles should be submitted. A recent photograph should accompany an article unless one is on file with the Editor.

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Delivering Secondary School Level Agricultural Literacy

By Phillip R. Zurbrick, Editor

(Dr. Zurbrick is Professor and Acting Head, Department of Agricultural Education, The University of Arizona.)

Both the February and March, 1990 issues of The Agricultural Education Magazine have been devoted to agricultural literacy themes. The February issue was intended to develop the philosophical base for dealing with agricultural literacy and this, the March issue, with how to deliver agricultural literacy. An analysis of the articles in the two issues is, perhaps, revealing of where we are on this subject. The February issue included only five theme articles on "Why Agricultural Literacy." This is the fewest theme articles ever printed in a single issue. Further, two of the five theme articles were written by authors outside the profession. This suggests that the members of the agricultural education profession have not given a great deal of thought or attention to agricultural literacy. Continuing the analysis of articles, it seems that the "Ag in the Classroom" program is growing and filling a need for providing instruction about agriculture in many states. Some in the profession seem to suggest that the "ag in the classroom" and other similar programs using volunteers and providing agricultural instructional activities for other academic teachers is sufficient to develop an agriculturally literate populace. Such a short-sighted, pass-the-buck attitude will surely result in failure!

Based upon an analysis of the two issues of "The Magazine," it is apparent that two states, Illinois and California, are aggressively moving towards the establishment of a multi-purpose agricultural education program that encompasses more than vocational agriculture at the secondary school level. Both state programs might be described as multi-faceted with programs spanning the spectrum from K to 12. The plans include programs such as "Ag in the Classroom" and other more traditional programs. The Illinois plan includes a secondary school level phase that specifically identifies " . . . separate courses for students interested in the impact of agriculture in their lives" (Law p. 5). They suggest courses on: 1) Environmental Literacy in Agriculture; 2) Economic Literacy in Agriculture; 3) Technological Literacy in Agriculture; and 4) Agriculture in Our Lives for developing the literacy phase at the secondary school level.

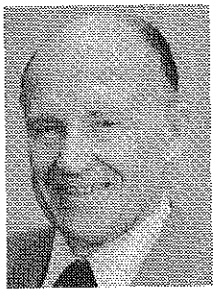
The California effort described by Warren Reed (page 15) seems very logically worked out with a proposal to the State Board of Education to expand the State Program of Agricultural Education in California so as to address not only career preparation in agriculture (vocational agriculture), but also agricultural literacy education. It seems highly desirable that each state should seek official recognition of the expanded mission of agricultural education beyond career preparation. Certainly, if the Strategic Plan that was so elegantly signed in December in Orlando is to have the revolutionary impact envisioned by the writers, tactical plans such as the one outlined by Warren Reed in California must be developed and implemented nationally.

The position paper on agricultural literacy prepared by the AATEA Central Region Committee chaired by Dr. Earl B. Russell (page 13) is included in this issue for discussion purposes. It is the hope of the authors that readers will react to the position paper. So as not to be hypocritical, the editor would like to start the discussion with a couple of observations. Number one, the rationale, guiding principles and purpose seem to be well stated and not controversial. The discussion should begin with: 1) Content; and 2) Needed Leadership and Policy for Implementation.

The profession must decide if agricultural literacy can be achieved/promoted at the secondary school level with one or more courses encompassing the listed topics. Some individuals would argue for a smorgasbord approach whereby a variety of courses of a semester or two in duration are provided. The courses might range from those of a highly science oriented nature, i.e. "biotechnology," to those of a general nature, i.e. "agriculture in our lives." Environmental and economic based courses might also be included in the agricultural literacy offerings as well as courses dealing with leadership and agricultural problem-solving. An agricultural systems course based upon a holistic approach to problem-solving is needed for students to deal with messy, complex, real world food and agriculture problems. Such problems can never be solved with the traditional scientific, reductionist approach to problem-solving!

It is clear that existing preparatory programs in agriculture at the secondary school level are not appropriate nor effective in developing agricultural literacy. I am disturbed to read where someone suggests that the agricultural education profession cannot provide agricultural literacy particularly at the secondary school level. I believe that the profession has the ability to plan an articulated agricultural literacy program and given additional resources to deliver it in a superior manner. We need to begin this process now and not wait for additional funds or official edicts from some Washington bureaucrat. As Warren Reed says in his article, the most difficult step is making the decision to expand the mission of agricultural education from a single overriding purpose to one of a multi-purpose program.

Delivering Agricultural Literacy



By Warren D. Reed, Theme Editor

(Mr. Reed is State Supervisor, Agricultural Education, California State Department of Education, Sacramento.)

Implementation plans can be any of many formats. One plan for the implementation of agricultural literacy education programs could be as follows:

Phase I — Determining what agricultural literacy is, its purposes, the need (or lack of need) for it.

Phase II — After determining that there exists a need for agricultural literacy, learning how to bring it about.

Phase III — Establishing and conducting programs of agricultural literacy education.

Phase IV — Program evaluation and revision as appropriate.

Phase V — Ongoing program operation with periodic evaluation and adjustment.

The February 1990 theme of The Agricultural Education Magazine was *Agricultural Literacy at the Secondary Level.* In that issue we were treated to several perspectives of the definition of Agricultural Literacy; its purposes; the need for it; etc. Probably we could view the February 1990 issue as being the culmination of Phase I in the nation-wide implementation of Agricultural Literacy, an extended study which began sometime before the National Study on Agricultural Education in Secondary Schools. It progressed through the release of the report of National Study by the Board on Agriculture of the National Research Council and then for another year or so. We now understand what agricultural literacy is, agree to the need for it, and for the most part, have determined to be a part of the campaign to develop it within the population with which we deal.

The theme of this issue of The Agricultural Education Magazine is *"Delivering Agricultural Literacy."* It seeks to launch Phase II in the nation-wide implementation of agricultural literacy education programs - discovering how to do it. To that end, we have asked several persons with experience in planning and conducting agricultural literacy education programs at state and local levels to share their experiences with us. We'll read about state education agency plans in three states, a local district approach, an outstanding state program of industry sponsored Agriculture-In-The-Classroom, and other perspectives. Readers are reminded that the May 1989 issue of The Agricultural Education Magazine also had an excellent article which dealt with ideas for delivering agricultural literacy. It was titled *Agricultural Education Model* and authored by Drs. Cox, McCormick and Miller of the University of Arizona.

If we can accept the Implementation Plan Model outlined at the beginning of this article and can agree that this issue of The Agricultural Education Magazine is the launching of Phase II — Learning How to Bring About Agricultural Literacy, then plainly we have some work ahead of us to accomplish the goal. Those who are serious about being part of the solution to agricultural illiteracy are urged to expedite their plans.

Perhaps future issues of The Agricultural Education Magazine can be devoted to themes addressing Phases III, IV, and V of the Implementation Plan.

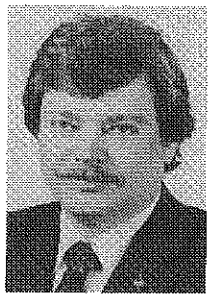
Perhaps the National Council on Agricultural Education can be persuaded to make full implementation of agricultural literacy education one of its top action priorities.

About The Cover

A graphic depiction of the Program Model for Agricultural Education in California. The Program Model emphasizes: Literacy, Career Exploration, Career Preparation with articulation throughout the educational spectrum.

Drawing provided by Warren D. Reed, State Supervisor, Agricultural Education, California State Department of Education. See article starting on page 15.

Implementing Agricultural Literacy Programs



By Dale A. Law

(Dr. Law is Assistant Professor, Department of Agricultural Education, University of Illinois, Urbana-Champaign.)

Agriculture in America is a broad-based growing industry which employs people in virtually every community in the nation. It has played a vital role in the history of the nation and the food and fiber system continues to play a vital role in the nation's economy. Vital to the continued success of this industry, and the nation as a whole, is a well informed literate society with regard to knowledge about agriculture.

As special interest groups revolving around issues such as animal rights, pesticide usage, soil and water conservation, and other environmental concerns gain more media and public attention, it becomes even more important that the general public have some background and understaning of not only what agriculture is all about, but of how it affects each person's life on a daily basis.

"Agriculture is too important a topic to be taught only to the relatively small percentage of students considering careers in agriculture and pursuing vocational agriculture studies" (Understanding Agriculture: New Directions for Education, National Research Council). This document further states, "Beginning in kindergarten and continuing through twelfth grade, all students should receive some systematic instruction about agriculture."

The Illinois Plan for Agricultural Education was developed to assist administrators and agricultural education instructors as they design new forward looking agricultural education programs which address the challenge of providing opportunities for all students, kindergarten through the twelfth grade, to be exposed to knowledge and concepts about agriculture. The plan helps those responsible for program planning to conceptualize both the role and function of agricultural education in a modern technological society. A single curriculum pattern is not prescribed for all programs in all situations, but instead instructional objectives identified may be assembled in a variety of ways to help meet local needs. An agriculturally literate society is one goal of the plan.

Agricultural literacy is now the objective of agricultural education in Illinois at the elementary, middle school and secondary school phases of public education. In practical terms, agricultural literacy may be defined as the development of the individual in the principles and concepts underlying modern agricultural technology. As defined here, it applies to producing, processing, distributing, marketing, and consuming the products of the food and fiber system. It also includes an awareness of the impact agriculture has on the environment, on society, and on everyday living of the individual.

Once agricultural literacy has been defined, and agricultural educators buy into the concept of teaching agricultural literacy at all phases of public education, the challenge then becomes one of implementation. Considering the fact that the state mandates goals for learning and certain courses, it leaves no time in the school day to add another course, especially at the elementary and middle school phases. And even at the secondary school phase, a variety of factors have recently converged to make it difficult, if not impossible, for most students to add an agriculture course to their schedules.

Since additional courses are not generally feasible, a more realistic approach to implementing agricultural literacy would be to incorporate agricultural concepts into existing courses in the curriculum. An analysis of concepts already taught in history, social studies, and science reveals many topics already closely related to agriculture. For instance, a study of the history of America necessarily has to be closely linked to agriculture, and elementary school science includes the study of plants, animals, soils and rocks, the weather and the interaction of forces of nature. Certain concepts in mathematics, language arts, and the fine arts can be easily linked to an agricultural topic.

However, no matter how desirable expanding the base of agricultural education in the public schools may be, it will not happen without building partnerships with academic teachers and helping them to identify and understand the inherent linkages that exist between what they already teach and agriculture.

The remainder of this article will describe several approaches being taken at each phase to implement agricultural literacy in Illinois.

Implementation at the Elementary School Phase

Illinois Plan: The Illinois Plan calls for the agricultural education instructor in school districts with an agricultural program to serve as the resource person who assists elementary school teachers in identifying where and how to incorporate agriculture into their existing courses. In school districts without agriculture programs, the county agricultural extension agent is encouraged to take the lead in assisting elementary school teachers with the process. Many existing 4-H materials are excellent resources for use in the elementary classroom. It is important to build solid,

Implementing Agricultural Literacy Programs

(Continued from page 5)

constructive partnerships between the elementary school teachers and an authorative agricultural resource person who is interested and willing to provide assistance.

Agriculture In the Classroom: Agriculture in the classroom is a joint initiative of USDA and USDE with primary leadership responsibility resting in each state. In Illinois, the Farm Bureau currently provides the leadership for this initiative. The goals are to (a) provide for a systematic infusion of agricultural concepts into the basic subject areas of the curriculum, and (b) to provide in-service training to teachers of the basic subject areas in order to provide necessary background information for incorporation of agricultural knowledge into their respective subject areas. Instructional materials and curriculum guides which incorporate agricultural knowledge into the basic subject areas have been developed and provided to elementary school teachers. In addition, in-service workshops have been conducted for elementary teachers on how to use the materials.

County Farm Bureau Women's Committees provide the leadership in many counties. In one county, more than 30 schools participate. Volunteers go into the classroom to give talks on farm life, to show how eggs hatch and what baby pigs look like, and to explain how various pieces of farm equipment work. Representatives from agricultural business and industry explain the role of their entity in the food and fiber system, often exhibiting both the raw product and the consumable end product (e.g. corn and corn chips).

Pilot Projects: The Illinois State Board of Education, Department of Adult, Vocational and Technical Education has funded several pilot projects through a master project entitled Facilitating Coordination in Agricultural Education. One of these projects has been working at grade levels K through 12 and has involved the elementary schools, the junior high and the high school as well as the County Cooperative Extension Service and agricultural business and industry in a coordinated effort. Kindergarten and first grade classes studied the equipment used to produce agricultural products and the transportation of agricultural products from the farm through the local elevators to larger markets as well as how the processed product is moved to the customer.

Second grade students completed a variety of agricultural related projects with emphasis on plant life. In addition, each student completed a family tree which indicated whether they lived on a farm, whether their parents lived on a farm, and whether their grandparents had lived on a farm. This information was compiled into a pictorial which clearly showed the movement away from the family farm lifestyle and provided an opportunity to discuss other career opportunities in the food and fiber system.

Third grade students learned about agricultural machines since these concepts related well to the content of their science course. The project was completed in four parts. Students first studied six simple machines in their science class, then took a field trip to a local farm machinery dealer to view a variety of equipment which incorporates the machines studied in the classroom. Students were able to relate the concepts studied in science class with real-life applications of the principles involved. The third part involved each student in building mechanical projects with a special science kit, and the fourth part was the use of miniature farm equipment to help students further relate how the simple machines are incorporated into the complex internal operation of large pieces of equipment.

Fourth grade students studied the importance of mineral resources to agriculture. Fifth through eighth grade students incorporated agricultural examples into various math, science and social studies classes to help show how agriculture impacts on the everyday lives of each person.

K-6 Curriculum Development: Another major effort to infuse agricultural literacy into the elementary curriculum is occurring through a project which is developing scientific laboratory exercise kits that provide realistic hands-on activities related to either the production, processing, or consumption of food and fiber. The kits contain activities and experiments (including equipment, consumable supplies, teacher lesson plans, student worksheets and additional materials) appropriate for fourth, fifth, and sixth grade students and are being developed and piloted in a joint effort by outstanding science teachers identified by the Illinois Math and Science Academy, selected elementary teachers and agricultural educators. The topics are: Agriculture as a Renewable Resource, Effects of Weather on Agriculture, Insects and Their Effect on Agriculture, Embryology of the Chick, Physical Characteristics of Soil, Adaptability of Animals in Agriculture, Chemical Applications in Agriculture, Products from Soybeans, Physical Technologies and Agricultural Applications, and Genetics and the Use of Biotechnology in Agriculture. These topics are being developed to complement concepts currently taught through elementary science textbooks.

A grain elevator employee describes to the kindergarten class how corn is unloaded into one of the pits and then how the corn makes its way up into the storage bins.

In addition, a fourth grade curriculum guide is being developed which relates agricultural concepts to the official state goals for learning in science, math, social science, language arts, fine arts and physical development and health.

The kits and curriculum guide will be made available to elementary school teachers through funding secured by the Illinois Committee for Agricultural Education.

(Continued on page 22)

Partnerships + Variety of Activities = Successful AITC Programs

By Mark P. Linder

(Mr. Linder is Executive Director, California Foundation for Agriculture in the Classroom and Program Director, Agricultural Education, California Farm Bureau Federation.)

"I wish I would have had your Agriculture in the Classroom Program a year ago. I would have encouraged the legislator I work for to support a bill promoted by agriculture instead of casting a "no" vote. After participating in your program, I now see the big picture of why agriculture is so important."

These comments were expressed by a legislative aide who participated in one of our newest Ag in the Classroom projects entitled "Agricultural Institute for Government Executives." The aide admitted he know very little about agriculture prior to participating in the Institute. I cannot blame him for not understanding agriculture. After all, how much can we expect a second generation individual from the city to know about agriculture. I firmly believe it is our responsibility as agriculturalists to provide information and opportunities for our non-agricultural friends to expand their knowledge of the industry.

Agriculture in the Classroom has evolved during the 1980's to be a major, positive force addressing today's ag literacy challenge. In California, Ag in the Classroom officially began in 1980 when the San Francisco Unified School District asked the California Farm Bureau Federation to help develop ag education activities and materials for **all** grade levels. Once word of San Francisco's Ag in the Classroom activities spread throughout the educational community, the requests for AITC programs from both rural and urban school districts increased dramatically. Today thousands of California students and teachers know more about agriculture as a direct result of their participation in various local, state and national AITC activities.

Because of my involvement with California's Ag in the Classroom Program since it's beginning, I have had the unique opportunity to help the program evolve. While there are several elements necessary for a successful Ag in the Classroom Program, I believe three basic elements are required:

1) A partnership between agriculture and education.

Classroom teachers, curriculum specialists and school administrators representing every grade (K-12) and the university level have joined hands with agriculturalists to develop and implement California's Ag in the Classroom Program. By joining together we can enhance and multiply our individual abilities and resources. As we work together on Ag in the Classroom activities, we develop new friendships and learn about new ideas and issues concerning both agriculture and education.

2) A partnership between the public and private sectors.

I firmly believe the problems we face today, and will face in the future, will be better solved by working together to enhance our individual resources and abilities. In California, Ag in the Classroom brings together public agencies including the State Department of Education, the State Department of Food and Agriculture, local school districts and various private agricultural companies and associations. A team effort is much more effective than approaching the challenge independently.

3) A variety of activities and resources.

An activity that interests a second grade teacher may not be of interest to a high school geography teacher, and an activitiy for a fourth grader will probably not be interesting to a high school student. To successfully increase the understanding of agriculture, a variety of AITC activities and resources should be offered to help students and teachers learn about agriculture.

In California strong partnerships and a variety of Ag in the Classroom activities have been developed through the California Foundation for Agriculture in the Classroom. The Foundation was formed in 1986 to support and promote Ag in the Classroom projects. Three important groups provide the Foundation's leadership:

Board of Directors

Advisory Council **Resource Advisory Committee**

The Advisory Council assists the Board members in promoting the Foundation and raising money. The council consists of 14 members from both education and agriculture. Each member serves a two-year term with a seven member rotation every year. This rotation provides new enthusiasm, new contacts and new ideas for promoting the Foundation.

The Resource Advisory Committee is an open membership committee consisting of representatives of public agencies, including both agriculture and education, and private associations and companies. The committee meets four times each year to review and discuss AITC resource material, plan the statewide Ag in the Classroom Conference and inform fellow committee members of respective AITC activities. The committee is also responsible for a resource newsletter for educators, **Cream of the Crop**, which is produced three times a year. This newsletter provides a listing

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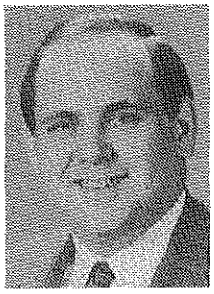
Agricultural Literacy: A Basic American Need



By John Pope

(Mr. Pope is Executive Director, The Council for Vocational and Technical Education in Agriculture.)

The American food and fiber system — one of the greatest success stories known to man. The ability to produce food and materials for human usage is one in which the average American has taken for granted. As long as food and fiber materials have been available, many have never questioned their origin. This attitude has proliferated through the years and when combined with a move from rural communities to more urbanized areas the real success story of American agriculture is lost. But beyond the fact that the knowledge about agriculture is important, of greater significance is the impact that agriculture has upon our daily lives socially, economically, and environmentally.

In 1984 the National Council for Vocational and Technical Education in Agriculture in cooperation with the United States Department of Agriculture and the United States Department of Education commissioned a national study on agricultural education in secondary schools. The study was performed by the National Academy of Sciences, National Research Council Board on Agriculture. In their report entitled *Understanding Agriculture: New Directions for Education*, the study committee focused on instruction in and about agriculture. The report defined instruction in agriculture as agricultural education in high schools training and preparing students for agricultural careers. Instruction about agriculture was defined as the concept of agricultural literacy or the understanding of the food and fiber system which includes its history and current economic, social and environmental influences on people. The report published two principal findings as related to agricultural literacy: 1) Most Americans know very little about agriculture, its social and economic significance in the United States and particularly its link to human health and environmental quality. 2) Few systematic education efforts are made to teach or otherwise develop agricultural literacy in students of any age. Although students are taught something about agriculture, the material tends to be fragmented, frequently outdated and usually only farm oriented. The report went on to list the following recommendations:

1. All students should receive at least some systematic instruction about agriculture beginning in kindergarten or first grade and continuing through 12th grade. Much of the material could be incorporated into existing courses and would not have to be taught separately.
2. State Education leaders, school administrators and school boards should develop and implement a plan to foster instruction about the food and fiber system and its history, role in advocating science and technology, and regional significance in selected areas of curriculum.
3. Teachers should be encouraged to modify lesson plans to incorporate materials about scientific, economic, and public health aspects of agriculture and related topics in accordance with school policy. To accomplish the goal of agricultural literacy, teachers need resources and support.
4. Representatives of agribusiness, particularly at the local and state levels, and community leaders should meet with school officials to implement cooperative efforts to bring more agriculture into the curriculum.
5. Senior government officials and political leaders in the U.S. Departments of Education and Agriculture must direct efforts to upgrade agricultural literacy to all state departments of education. These efforts should be reinforced by a commitment of resources that reach teachers.
6. Curriculum development projects funded by the National Science Foundation and U.S. Department of Education should include the development of instructional modules and materials leading to agricultural literacy. Officials responsible for ongoing project oversites should work toward this goal.
7. National agricultural community and vocational education organizations should develop new links with national, education, teacher and environmental education organizations with a goal of facilitating progress in the teaching of agricultural literacy.

Over the course of the last ten years, several programs have been initiated to encourage agricultural literacy. Among the more familiar ones have been FFA's Food for America, USDA's Ag In The Classroom, California's Life Lab Science Program. But because of the recommendations of the National Academy of Sciences, in 1988 Project Food, Land and People was implemented as an effort to provide classrooms to students and teachers to help them better understand the importance and interdependence of food, land and people. This project was to be conducted by infusing agricultural information into a kindergarten through 12th grade curriculum through activity-based materials. This program would also provide opportunities for teaching critical thinking and problem-solving skills and provide educational opportunities that would lead to the enhancement of mature and responsible behavior. Specifically, Project Food, Land and People was to address seven basic areas of agriculture for literacy purposes:

(Continued on page 23)

THEME

Agricultural Literacy In Montana Schools "Education About Agriculture"

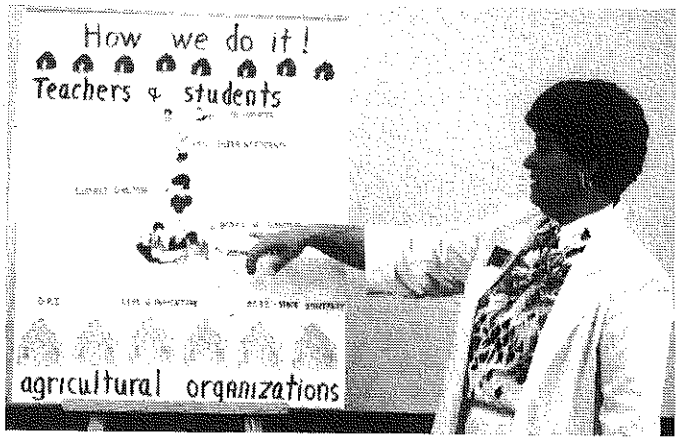
By Leonard Lombardi and Bette Jo Malone

(Mr. Lombardi is State Specialist, Agricultural Education, Montana Office of Public Instruction, Helena; Ms. Malone is President, Agriculture in Montana Schools, Billings.)

Agricultural literacy in Montana is delivered primarily by a grassroots voluntary organization known as Agriculture in Montana Schools (AMS). AMS was organized in 1985 to provide a better understanding to students and teachers of the contribution of agriculture to their lives and to the state and national economies.

Financial support for AMS is derived from membership dues, donations, grants and a voluntary tax check-off program on the Montana state income tax forms.

Members of AMS are representatives of most major agricultural organizations, commodity groups and educators. AMS is endorsed by the State Office of Public Instruction, State Department of Agriculture and the College of Agriculture in Montana State University. Staff from each of these agencies participate in AMS meetings and provide a facility for meetings.



Bette Jo Malone, President of Agriculture in Montana Schools, demonstrates the organizational structure of AMS.

AMS network allows for communication with AMS grassroots volunteers strategically placed around the state. Montana has been divided into 15 districts, with a district director responsible for his/her area. Each district director has a group of volunteers in each county, and a contact for each school. AMS relies on these dedicated volunteers to keep our teachers informed about new materials in our AMS Treasure Chest and the contest rules for their students, as well as keeping our Treasure Chests stocked.

In order to inform our members, grantors, and grassroots volunteers, a newsletter, "Newsbits," is sent out twice a year. AMS trains and informs its volunteers with a workshop in July of each year. At this time, AMS distributes new Treasure Chest inventories and informs our workers and district directors of new programs and materials.

Students exploring opportunities in Food Science (meat processing).

Agriculture in Montana Schools has a large green wooden box (AMS Treasure Chest constructed by local agriculture education programs) in every school in our state with 20

(Continued on page 10)

Agricultural Literacy In Montana Schools "Education About Agriculture"

(Continued from page 9)

or more students. It is filled with free, hands-on agricultural materials for the teachers to use. Also, in each school are three teacher's manuals; brown grades K-3, red grades 4-6, yellow grades 7-8. These manuals and materials are for the teacher to use in integrating agriculture into each of the curriculum he/she teaches. This is not an additional course to be added to the curriculum.

In order to reach its goal, Agriculture in Montana Schools has a number of programs and contests it offers throughout the year. In January, the AG Day mailing is sent to every school in the state. It contains the contest rules for the year, as well as work sheets and ideas for the teacher to use. This year's material will be on plants and their importance to us. The activities will help students to understand how we use plants, and how they can "Grow a Montana Salad." Because of the forest fires in Montana last year, AMS will also include a Forest Service newspaper insert on the effects of forest fires, both good and bad.

Dr. Doug Bishop, Agriculture Education professor at Montana State University helping workshop participants discover agri-science with bees.

AMS has two statewide contests for our Montana students. The first is for K-6 grade students. They are asked to design a bumper sticker with an agricultural theme. There is a county winner from each grade; with these winners advancing to state competition. In recognition of National Ag Week, our K-6 state bumper sticker winners are honored at a luncheon in the state capitol in March. They receive a $50 savings bond, a free trip to Helena, lunch with the Governor, and their winning bumper sticker is reproduced and distributed throughout the state.

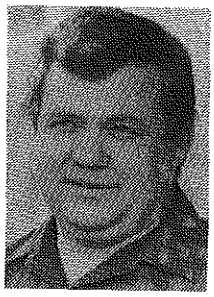
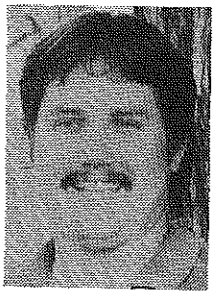
Our second contest is for 7-10 grade students. These students are asked to write an essay. This year's theme is "One Agriculture Development that Effects My Life." Thirty-five statewide winners are chosen to attend an all-expense-paid, week-long workshop on the campus of Montana State University in Bozeman. Students participate in both hands-on and classroom activities in the College of Agriculture and have an opportunity to learn firsthand the many agricultural careers available to them.

Hands-on experience in Animal Science/Animal Nutrition.

AMS has two continuing education instructors who present a 10-hour, one-credit workshop anywhere in the state where 10 or more teachers are interested. In this workshop, teachers learn how to use all of the AMS material in their classrooms. In June, AMS sponsors a free, two-credit summer workshop for 35 teachers from around the state. In this workshop, teachers not only learn to incorporate AMS materials into their existing curriculum, but they have the opportunity on a university campus to see firsthand the high-tech agricultural careers available to our Montana students.

All of these activities and contests are developed to make our Montana students and teachers aware of how agriculture effects all aspects of their lives. Our children in Montana need to understand how cotton and cranberries are grown, as well as beef, grain, sugarbeets, and honey! Our teachers need to have access to free, exciting, fun to use agriculture materials. In Montana, AMS has become the respected voice and accepted channel to put factual, reliable, educational materials from all areas of agriculture in the hands of our educators. Montana educators are learning they can rely on AMS to provide them with an unbiased composite of agri-science materials they need to make their students "agriculturally literate."

Delivering Agricultural Literacy Through Mentor Teachers and Mentor Students


By Jim Schulte, Dwight Barnes and Jean Landeen

(Mr. Schulte and Mr. Barnes are Agriculture Instructors, Esparto High School, Esparto, California; Ms. Landeen is Regional Supervisor, Agricultural Education, California State Department of Education, Sacramento.)

High school teachers of agriculture are good resources for promoting and supporting ag literacy activities in the elementary school. The agriculture teacher cannot only make the agriculture library available, share facilities and lend audio visual material, but may also provide ideas, contacts, encouragement, and reassurance.

The Esparto Unified School District in California has developed a system to provide a coordinated effort of promoting agricultural literacy. Through the ideas of Jim Schulte and the support of Dwight Barnes, both teachers in the high school Agriculture Department, the district is supporting a district-wide curriculum of agricultural education. Through the "Mentor Teacher" program the district is able to utilize a valuable curriculum resource as well as encourage the agriculture teachers to spend the time and energy outside of the traditional program.

We interviewed Jim Schulte and Dwight Barnes to better understand the concept and activities.

We found the concept, procedure, and mechanics worth sharing.

Esparto - Esparto District

Esparto has been a traditional rural community of 1500. It is in a small, somewhat isolated agricultural valley about 45 miles from Sacramento and 55 miles from San Francisco. In the next few years the community will experience a growth of 450 homes. Even as a rural community, the general knowledge of agriculture is low. So attention to agricultural literacy is important. The district has elementary, middle, high school, and continuation schools.

LANDEEN: What events caused you to become involved in Ag Literacy?

SCHULTE/BARNES: Pressure from science, etc., across the curriculum was a force. The agriculture program had to demonstrate that it was involving spelling, science, writing, and math in its curriculum. I wanted agriculture to influence the curriculum across the board. It is important for others to teach my discipline as for me to teach in theirs. This idea coincided with the letter from the Farm Bureau introducing the AITC (Agriculture In The Classroom program). Further investigation revealed resources in the form of lesson plans. This seemed to feed right into my idea.

High school students gain confidence in their learning while helping elementary students become involved in agriculture. (Photo courtesy of Jean Landeen.)

LANDEEN: What is the mentor teacher program?

SCHULTE/BARNES: It is a state-funded program in which school districts are encouarged and assisted to designate selected teachers as mentors. These teachers are provided some release time from their classes, a stipend, and a budget for supplies and materials to use in developing new initiatives in the district's instructional programs and/or to assist other teachers in specific curriculum areas.

LANDEEN: Why did your district want to get involved?

SCHULTE/BARNES: Teachers on the district mentor selection committee liked the opportunity for some of the concrete activity that the agriculture mentor proposal prepared by the high school agriculture teacher suggested. The Board responded favorably to the committee's recommendation.

LANDEEN: What do you do as a mentor in agriculture for the districts?

SCHULTE: I meet with elementary teachers to explain the program and provide in-service training on gardens, computer software, and floral design. I provide resources such as seeds, flowers, tools, and lesson plans. Our high school agriculture students develop the garden areas to be used by the elementary school students at their school and do the major ground preparation. Sometimes the elementary school

(Continued on page 12)

Delivering Agricultural Literacy Through Mentor Teachers and Mentor Students

(Continued from page 11)

students come to the high school and we use our agriscience laboratory, shop, greenhouse, and school farm for lessons and observation. We publish a newsletter to distribute to the elementary school teachers and other interested persons to advise them of planting times and other information we think they can use in their agricultural lessons and activities. We also sometimes use the newsletter to respond to questions we've been asked.

Another activity that has been quite successful for us is the use of "mentor students." We train some of our students to be aides or teacher assistants and they actually do much of the instruction for the elementary students — either under our supervision or the elementary teacher's. We train these students as a part of our curriculum and call them "mentor students" to bring attention to their special status.

LANDEEN: How do you find the time for projects such as gardening and floral design?

SCHULTE: We do a lot during class time. My students teach and help the elementary students either at their garden site(s) or in our classroom when the elementary students come to make arrangements. The district has a budgeted amount of time set aside for teacher in-service. We've usually been able to get some of that allocated when I provide in-service training for the elementary teachers.

The newsletter does take time after school hours. My notes are typed up by the student assistants.

LANDEEN: What is the value of your AITC to your district?

SCHULTE/BARNES: It gives the teachers another tool for motivating students in math, science, social studies, and language while introducing them to their agrarian roots. There seems to be more learning taking place. For example, the students find they are learning more as they use different varieties of almonds and walnuts as counters to learn math concepts.

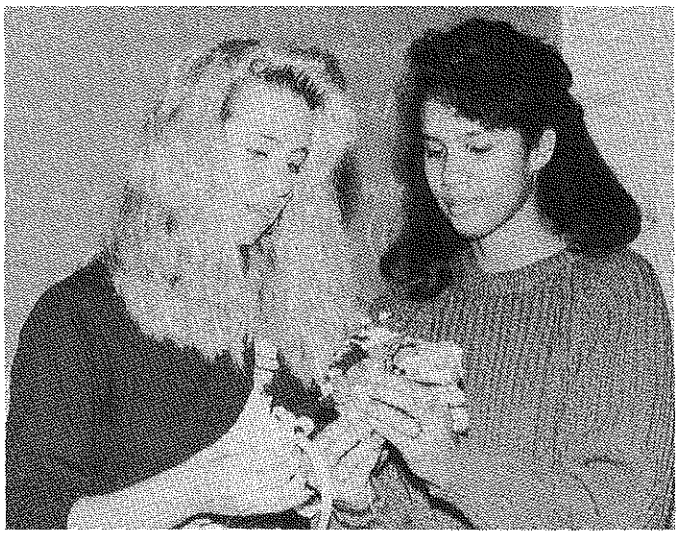
They learn the varieties of grains and seeds as they use them in math and art projects.

LANDEEN: What is the value of the AITC to the agriculture program?

SCHULTE/BARNES: It provides a leadership development laboratory for the ag students as they teach the younger students. It opens the doors for recruitment by introducing both students and their teachers to the high school ag program. It has stimulated communication between teachers, increases an awareness of the complexity of multiple disciplines taught by elementary teachers.

LANDEEN: What is the value to your students?

SCHULTE/BARNES: The high school agriculture students enjoy being teachers. They have an extremely good feeling from having something to share. Now the students are freely volunteering to work with the elementary students. Also, we all know that the best way to really learn a subject is to teach it. My mentor students are **really** learning agriculture.



"THIS IS NOT A COW, OR A PLOW."
Students discover that agriculture includes processing and marketing as they learn from each other. (Photo courtesy of Jean Landeen.)

LANDEEN: Has there been any drawback to the AITC program?

SCHULTE: Even though the mentor teacher system does allow me some time free from classroom responsibility, I find that some of the time I formerly had available to me for department management tasks now goes to my AITC mentor teacher tasks.

With the welcomed enthusiasm on the part of the elementary teachers, there was a very high demand on teacher time. In the second year a few guidelines were instituted to encourage the elementary teachers to assume more responsibility.

It has been a challenge to work with "new" emphasis in AITC to make it part of the overall program. We did not want the project to be the "Fad for the Year."

LANDEEN: Has participation in Ag Mentor Programs infringed on the high school agriculture program budget?

SCHULTE: We do use the agriculture program tractor and field equipment plus various tools and supplies to support AITC activities. The mentor program has a relatively small budget which was used for garden site development the first year and will be used this year for floral supplies.

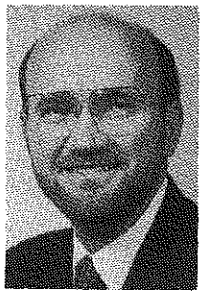
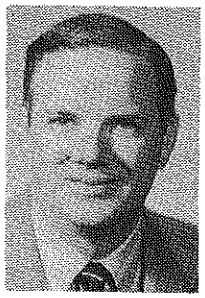
Editor's Note:

The State of California has a state-funded Mentor Teacher program which the legislature developed for the purposes of recognizing teachers of excellence, encouraging them to remain as teachers, using their talents to encourage the performance of their teacher-colleagues. Esparto High School agriculture teacher, Jim Schulte, pioneered the use of this program as a way to establish and coordinate Agriculture In The Classroom activities in the elementary schools of the district. State Department of Education Regional Supervisor, Jean Landeen interviewed Mr. Schulte to gain his impressions, comments, tips.

ARTICLE

Position Statement on Agricultural Literacy

EDITOR'S NOTE: The following position statement was prepared for discussion at the Central States Seminar in Agricultural Education held in Chicago in February, 1990. The authors' solicit reader reactions and suggestions to the statement.


By Earl B. Russell, J. David McCracken and W. Wade Miller

(Dr. Russell is Chairperson, Agricultural Education, University of Illinois, Urbana, and Chair, AATEA Central Region Committee on Agricultural Literacy; Dr. McCracken is Professor, Department of Agricultural Education, The Ohio State University; Dr. Miller is Associate Professor, Department of Agricultural Education, Iowa State University.)

Rationale

The role that agriculture plays in the history of the United States, in the quality of life for the nation's citizens, and in the economic well-being of the nation and its states is poorly understood by youth and the general public. In spite of the sustained programs of education in agriculture in public schools, universities, the Cooperative Extension Service, and other agencies, most people still seem to perceive "agriculture" as synonymous with "farming." The problem of agricultural illiteracy is widespread, having serious ramifications in the arenas of public policy development, development of personnel to serve the broad agricultural industry, and in the education of our people from kindergarten through adult levels.

This paper attempts to address agricultural literacy from a very broad perspective. The committee agrees with the 1988 National Academy of Sciences report **Understanding Agriculture: New Directions for Education** in its statement 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 National Academy of Sciences committee defined "agriculture" to

> . . . encompass 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 then stated, "An understanding of basic concepts and knowledge spanning and uniting all of these subjects define the term 'agricultural literacy'" (p.vi).

But, what does it really mean to be agriculturally literate? How much of what information is needed to achieve agricultural literacy? When should it be achieved? Agricultural education currently serves too few students. Fewer than 5% of American high school students are enrolled in vocational agriculture studies, and a very small percentage at junior high and elementary levels are touched by agricultural education programs such as Ag in the Classroom and 4-H Club programs. Current levels of agricultural literacy are low due to the relative absence of information about agriculture in public educational programs. Agricultural literacy should include historical understanding, social significance, economic contributions, scientific understanding, and awareness and understanding of agricultural careers.

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 techical education), and universities.

Purpose

The basic purpose of agricultural literacy programs should

(Continued on page 14)

Position Statement on Agricultural Literacy

(Continued from page 13)

be to achieve an awareness and understanding of the significance of agriculture to the lives of all people. To achieve this purpose, the following objectives are suggested:

1. To develop understanding of ethical and environmental issues related to agriculture.
2. To develop the ability to grow and care for plants and animals.
3. To develop 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.

The objectives should be pursued with a variety of clientele groups. Agricultural literacy programs should be targeted at 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 underrepresented in the agricultural industry.
2. Agricultural literacy programs should be directed at parents, educators, consumer groups, business leaders, government officials, policymakers, 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 (pre-and in-service) 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.

Content

Agricultural literacy programs should focus heavily around the content areas suggested in the National Academy of Sciences report, **Understanding 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 climate issues (deforestation, water, soils, 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. Agricultural trade issues.
12. Geopolitical issues related to food.
13. Care for indoor and outdoor environments, including lawns, gardens, interior plantscapes, recreational areas, and parks.

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.

Needed Leadership and Policy for Implementation

The primary responsibility for agricultural literacy should be placed with the U.S. Department of Agriculture, building on and expanding beyond the Ag in the Classroom program. In order for USDA to provide the necessary leadership, USDA will need to work closely with the U.S. Department of Education and state departments of agriculture and education. Agricultural literacy programs, due to their broad scope, should necessarily be administered **within and beyond** state departments of education and the U.S. Department of Education. Major USDA programs such as the Cooperative Extension Service, Ag in the Classroom, and the Soil Conservation Service should play key roles. Exploration of the role of other agencies such as the Environmental Protection Agency and the U.S. Forest Service could be initiated.

Federal and state legislation should be sought for comprehensive K-adult agricultural education, **separate and apart from vocational education legislation,** to systematically implement agricultural literacy programs through these various agencies. Agricultural literacy should be made an **explicit** purpose of these agencies.

By definition, the school-based general education purpose of agricultural literacy programs means they should **not** be administered through state divisions of vocational education, but rather through parallel units such as **curriculum and instruction or innovative and exemplary programs.** The committee remembers the career education movement of the early 1970's as a comprehensive goal of all of education. As leadership for the movement began to be absorbed into vocational education in the late 1970's, career education began to diminish in its acceptability and appeal. A lesson from this experience perhaps is that leadership provided to agricultural literacy by those in vocational agriculture would be the kiss of death for the type of agricultural literacy envisioned in this paper. Further, agricultural literacy programs should be viewed as part of a comprehensive youth development strategy in agriculture to complement 4-H Clubs, Ag in the Classroom, and secondary school agricultural education. Ways should be designed to incorporate agricultural content into existing courses from kindergarten through senior high school. Teachers will need resources such as revised books, audio-visual materials, and

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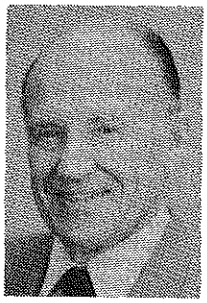
Incorporating Agricultural Literacy In a State Program of Agricultural Education



By Warren D. Reed

(Mr. Reed is State Supervisor, Agricultural Education, California State Department of Education, Sacramento.)

For many years the California secondary school program of agricultural education was a typical traditional program of vocational education in agriculture. In the late 1950s some vocational agriculture teachers began to take notice of the increasing numbers of non-farm students in their classes and the decreasing level of agricultural knowledge and interest held by students entering their programs, in the general student body and, for that matter, in the general population of their respective communities. Some of these teachers individually and unilaterally made adjustments in their programs to accommodate these changes in their clientele. For the most part, they did so without encouragement, assistance, or even the knowledge of the State Department of Education.

Changes in federal vocational education legislation and regulations in the 1960's recognized that agriculture was even more than agricultural production. It authorized, even encouraged, state and local education agencies to expand their agricultural education programs to address all occupational areas in agriculture. The 1960's federal legislation expanded the definition of agriculture but it did not expand the function of agricultural education beyond **vocational education.** Inasmuch as the state program of agricultural education was primarily a state extension of the federal program, neither did the Department of Education acknowledge that, increasingly, the need for agricultural education was not limited to those preparing for agricultural occupations.

In the early 1980's, two events occurred which eventually opened the door to State Department of Education recognition of the fact that its program of agricultural education should no longer be limited to **vocational** education in agriculture. One was the nationwide education reform movement. One concept of this movement was that every school program (including agricultural education) should contribute to and reinforce students' basic academic educational literacy. This led to the discovery that current basic academic education was leaving graduates agriculturally illerate and that this caused them to be at a disadvantage as consumers and responsible citizens.

The other 1980's event was landmark state legislation which established in state law the concept of a State Program of Agricultural Education. It decreed the maintenance of a staff and agricultural education unit in the State Department of Education; required the establishment and operation of a State Agricultural Education Advisory Committee; and required that the State Program of Agricultural Education incorporate a Consumer Outreach component.

The State Advisory Committee interpreted the Consumer Outreach mandate to be in reference to what has become known as Agricultural Literacy Education plus Agricultural Career Exploration Education. When the Report of the National Research Council, "Understanding Agriculture - New Directions for Education" was released in 1988, the State Advisory Committee felt that its position had been validated and it set out to design a way to incorporate these two additional components into the State Program for Agricultural Education. It established a sub-committee to begin work on the proposal.

In the meantime, a committee of State Agricultural Education staff and teacher educators had been working on a similar assignment. The two committees merged their efforts and produced a proposal which was then submitted to the State Department of Education Director of Vocational Education who was requested to review the proposal, endorse it, and forward it to the Superintendent of Public Instruction for approval and orders to implement the plan. As this article is being written, the proposal is enroute from the State Director's office to the Superintendent. It is somewhat behind the implementation timelines originally proposed but we are confident of its approval and implementation in the near future.

The first, and key, step in implementing the Advisory Committee's proposal entitled, "New Directions for Agricultural Education in California," is for the Superintendent of Public Instruction and/or the State Board of Education to declare that the State Program of Agricultural Education has been expanded to address not only **career preparation** in agriculture (vocational education), but also **agricultural literacy education** and **agricultural career exploration education.**

The next steps are incorporated in the three phase plan which is outlined in the remainder of this article. The plan is expected to take two years to complete Phases I and II, then operate on a continuing basis thereafter.

State legislation has been introduced seeking funding for Phase I of the plan. Plans are to seek special funding for Phase II and Phase III, the on-going operational component of the fully developed, expanded State Program.

(Continued on page 16)

Incorporating Agricultural Literacy In a State Program of Agricultural Education

(Continued from page 15)

New Directions For Agricultural Education in California:

A Proposal to Plan and Implement Statewide Programs in Agricultural Literacy, Career Exploration and Career Preparation

This project is Phase I of a three part project to improve and enhance the systematic instruction of agriculture to youth in California. Emphasis of Phase I is on "planning." It is anticipated that Phase II will emphasize "instructional materials development and model schools" and Phase III will emphasize "statewide implementation." An outline of each phase emphasis follows:

Phase I — Planning

- Development of goals for agricultural literacy and career exploration.
- Identification and validation of learning outcomes by grade level.
- Development of curricula and frameworks for Agricultural Education.
- Planning for in-service education of teachers.
- Identify existing materials and development of a summary of instructional materials needed to teach agricultural literacy and agricultural career exploration.
- Recommend implementation of frameworks and program goals to the California Department of Education.
- Field test curricula and framework with 2-4 school districts.

Phase II — Material Development and Model Schools

- Develop instructional materials based on needs identified in Phase I.
- Field test instructional materials in schools.
- Develop model demonstration schools in 7-10 different geographic areas in California.
- Plan and conduct teacher in-service using the products of Phases I and II.

Phase II — Statewide Implementation

- Conduct statewide in-service programs for elementary and secondary teachers using results of Phases I and II.
- Provide consultation with school districts to assist in the development of K-12 plans for agricultural education.

Purpose and Goals

It is the purpose of this project to develop a plan which will lead to further incorporation of agricultural knowledge into the elementary and secondary educational system. Greater effort is needed to help students acquire enough knowledge to function effectively as agriculturally literate citizens; as consumers of agricultural products and services, and to make sound decisions relative to selecting personal careers in agriculture.

Goals:

A. Develop a K-12 plan for agricultural education in California which addresses the purposes of agricultural literacy, career exploration, and career preparation.

B. Develop a curricula and frameworks for agricultural literacy and agricultural career exploration which will include learning outcomes by grade level.

C. Develop a strategic plan for delivering agricultural literacy, career exploration, and career preparation instruction in a variety of school districts and educational settings.

D. Recommend a plan for the in-service of teachers relative to agricultural literacy and agricultural career exploration.

Objectives

Goal A:

Develop a K-12 plan for agricultural education in California which addresses the purposes of agricultural literacy, career exploration and career preparation.

Objectives:

1. Propose an extension of the State Department of Educations' Agricultural Education program to include the purposes of agricultural literacy and agricultural career exploration, in addition to its current and traditional focus on agricultural career preparation.
2. Develop and provide recommendations about the contemporary goals and purposes of agricultural literacy education, agricultural career exploration, and agricultural career preparation programs.
3. Develop and provide recommendations about the organizational structure of the K-12 state agricultural education program which includes the three components of agricultural literacy, career exploration, and career preparation and which describes the relationship among these components.
4. Develop a proposal to submit to the California State Department of Education for implementation of the recommendations from this project.

Goal B:

Develop curricula and frameworks for agricultural literacy and agricultural career exploration which will include learning outcomes by grade level.

Objectives:

1. Identify agricultural subjects and topics to be taught at each grade level for agricultural literacy and provide recommendations on how to integrate them into existing non-agricultural curricula.
2. Develop and provide recommendations about the sources of instructional materials and references to be used for teaching core agricultural literacy and career exploration subject matter.

Goal C:

Develop a strategic plan for delivering agricultural literacy, career exploration, and career preparation instruction in a variety of school districts and educational settings.

Objectives:

1. Provide recommendations about the delivery system(s) for agricultural literacy education, agricultural career exploration and agricultural career preparation.

(Continued on page 17)

Incorporating Agricultural Literacy In a State Program of Agricultural Education

(Continued from page 16)

2. Develop and provide recommendations about articulating the K-12 agricultural education program with post-secondary and university programs and other non-school based agricultural education programs.
3. Develop and recommend an agreement for coordinating State Department of Education (SDE) and Agriculture in the Classroom (AITC) efforts in agricultural literacy and career exploration education.
4. Develop and conduct field testing in model school sites.

Goal D:

Recommend a plan for the in-service of teachers relative to agriculture literacy and career exploration.

Objectives:

1. Recommend a statewide plan for training and assisting teachers and other local educational agency personnel regarding agricultural literacy and agricultural career exploration.
2. Conduct teacher in-service pilot programs using the agricultural literacy and career exploration frameworks.

Major Strategies

Project Steering Committee

The project will be directed by a "steering committee" composed of professionals representing various areas of agricultural education in California:

State Department of Education,
California Department of Food and Agriculture,
University of California, Cooperative Extension 4-H Program,
Summer Agricultural Institute Alumni Association,
California Foundation for Agriculture in the Classroom,
University Programs of Teacher on Preparation in Agriculture,
California Agricultural Teachers Association, and
State Agricultural Education Advisory Committee.

The steering committee will provide overall direction for the project, meet frequently to review progress and approve the finished products prior to dissemination.

KEY ACTIVITIES TO BE CONDUCTED

Goal A:

State Plan for Agricultural Education

Activities:

1. Review all current literature relating to goals of agricultural literacy, exploration and career preparation in agriculture.
2. Seek input from the Ag in the Classroom Foundation's Resource Advisory Committee, Cooperative Extension 4-H Program, Vocational Education Staff, State Vocational Agricultural Education Advisory Committee, California Agricultural Teachers Association and other relevant groups relative to the goals of agricultural literacy, and career exploration in agriculture.
3. Validate goals developed by project staff with the above groups.
4. Write the state plan for agricultural education.

Goal B:

Curricula and Frameworks

Activities:

1. Review California curricula frameworks for elementary and secondary education and review related literature to gain an understanding of learning outcomes related to agriculture.
2. Based on input from constituency groups identified in Goal A and existing literature, determine learning outcomes of agricultural literacy and career exploration.
3. Match agricultural learning outcomes to grade level based on established curricula frameworks for California.
4. Using elementary and secondary teachers and other constituency groups, validate agricultural learning outcomes by grade level.
5. Assemble the refined K-12 agricultural curriculum framework using the format developed for subject matter areas by the California Department of Education.

Goal C:

Strategic Plan for Delivery

Activities:

1. Develop recommendations that will describe models for delivering agricultural literacy and career exploration.
2. Develop recommendations for articulating elementary and secondary education in and about agriculture with post-secondary institutions.
3. Develop and recommend an agreement for coordinating SDE and Ag In the Classroom efforts in agricultural literacy education;
4. Submit a proposal to SED for implementing the recommendations from this project.

Goal D:

In-service Plan

Activities:

1. Select 2 to 4 model schools in different school districts.
2. Provide release time for in-service of teachers.
3. Conduct field testing of materials with teachers in model school sites.
4. Develop a comprehensive plan for statewide teacher in-service.

Project Products

Major products developed for dissemination from this project will include:

1. A K-12 plan for Agricultural Education in California;
2. Model curricula frameworks for agricultural literacy and agricultural career exploration;
3. A resource binder containing the project products;
4. A strategic plan for delivery of agricultural education in local school districts and strategies for articulation of K-12 agricultural education with post secondary institutions.
5. A plan for future work.

(Continued on page 21)

Computer Technology Resources
Computer Pals: A Communication Activity

By Nat Jaeggli, Special Editor
(Mr. Jaeggli is Coordinator, California Agricultural Education Computer Network, University of California-Davis.)

Have you ever wondered how you could harness the energy your students use to pass notes in class? Have you ever read some of the really good ones and wondered why those same students write such drivel when asked to prepare a report? I'm sure many of you can answer yes to one or both questions.

One of the activities that I have been actively promoting among the California agricultural educators using computers is what I call Computer Pals. The idea is that students from different chapters prepare short letters, using a word processor, and then send the letters to each other via one of the many information services.

The objective of the Computer Pals activity is to promote the use of word processors among students and the use of computer networks between departments. All too many times we provide an excellent lesson that develops the skills of the students, but lack an effective activity that reinforces those skills and encourages the students to work independently, exercising those skills.

Now that we've agreed on the objectives, goals, and concepts, let's turn to the mechanics. Before your students go to work preparing their messages, you will want to coordinate with another instructor who wishes to do this activity simultaneously. This may be a little tricky, schedules being what they are, but with sufficient advance notice you should be able to plan a block of about two or three weeks in which to send and receive these messages. This activity should not occupy every day of those instructional periods, since one group will be preparing responses while the other group waits to receive them. If mail is not picked up and responded to promptly, the activity will be ineffective and students will quickly lose interest.

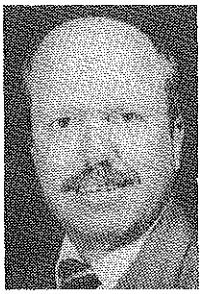
Once the schedule has been determined, start the process with a letter of introduction so students at both ends know who they are communicating with. Instructors may need to be very specific as to what these initial letters should contain, their length and how they will be graded. Perhaps responses should be short to start with and increase in length and scope as students become accustomed to sending them. To be most effective, each student should be responsible for keying in his/her assigned responses. I know they will complain but typing skills really will improve with practice. You will also want to "practice" with the other instructor ahead of time, working out some of the bugs; for instance, are you using the correct E-Mail addresses, or uniform writing styles?

It is assumed that both instructors are comfortable with the use of a word processor and a communication software program that connects them to the information service of choice. What gets a little tricky is that most word processors will "save" your files with control characters that cannot be sent as text or ASCII files. These "control" characters must be stripped from the file, leaving only the text message. Appleworks uses a function that "prints" the file to disk, rather than using the standard "save" feature. Other word processors will allow you to selectively save files as "text only." Once the file is saved or printed to disk, the next step is to send it on its way. Explore your communication program to determine the commands necessary to send a text file. You can generally do this without going "on-line:" Now determine the steps necessary for sending "E-Mail" via the information service of choice. This might be AgriData, CompuServe, Prodigy or a local BBS. Each one has a unique method of "uploading" text files. All of them have users' guide books, but if you get stuck, be sure to call the client service representative.

If you would like to use this activity but are not connected to one of the computer information services, you might consider sending "disks" back and forth between the two different program sites; however, this requires that the program sites operate compatible computer formats.

Probably the greatest impact of the computer revolution of the past 10-15 years has been in the way we communicate. We are no longer limited to a typewriter and the U.S. Mail; in fact there appear to be no limits except our imagination. "Communication" is big business. This activity should improve the way our students communicate in a "written" format, as well as developing the skills necessary to send their documents to the intended recipients. In addition to the mechanics, we can reinforce certain "social skills" and proper protocol. Finally, and of equal importance, this activity should be what our students think is fun and is a great opportunity to explore the use of communication technology as it is used in agriculture.

Young Farmers Involved in Agricultural Literacy



By Wayne J. Sprick
(Mr. Sprick is Executive Director, National Young Farmers Education Association.)

The National Young Farmer Educational Association sees a direct payoff from any efforts by the agricultural education community to improve the perception of production agriculture and all its related aspects. As the perception of today's agriculture improves, so does the perception, self-esteem, profitability, and quality of life of those involved in it.

According to information gathered in the mid 80's, membership in the National Young Farmer Educational Association represents one-half of one percent of those people involved in production agriculture and accounts for 10% of the total agriculture production. They are young people with a future ahead of them as 80% are less than 40 years of age. They are interested in improving themselves and their organization as shown by their involvement in the local educational program. They represent the spectrum of agriculture production, from the horticulture and specialty crop production in states including Connecticut and California, to the grain and livestock production states of Indiana and Wyoming. These people are leaders and represent those who are interested in learning and in improving themselves.

The National Young Farmer Educational Association is striving to improve perception of agriculture, and, yes, the agriculture literacy of young consumers and not-so-young consumers. One of the purposes of the National Young Farmer Educational Association found in Article II of their constitution states, "to improve rural-urban relations and the urban consumer's understanding of agricultural issues." This purpose is achieved through programs conducted by the association.

The National Young Farmer Spokesperson for Agriculture Program is in its 15th year of operation. On the national level this program selects three Spokespersons from state contestants to participate in a media tour of three major cities involving TV, radio, and newspaper interviews. The Spokespersons also meet with the consumers on a one-to-one relationship in the local supermarkets of the cities. The selection of the three winners is based on a five minute presentation on one of the topics of getting the most from your food dollar, farm exports benefit consumers, how chemicals insure an adequate food supply, stewardship of the land, and how the use of biotechnology benefits consumers and their response questions from the panel of judges on any facet of agriculture.

In addition to teaching adult consumers about agriculture and agricultural issues, the Spokesperson Program provides the opportunity for those participating on the local, state and national levels to develop articulate responses to urban concerns about agriculture. It further provides the opportunity to further develop the communication and leadership skills of the participant.

Many state associations and local chapters conduct a similar contest and media tour to select their national participant. This involvement increases the effectiveness of the program and the amount of contact with the consumer.

The Spokesperson For Agriculture program has been sponsored for the past 15 years by Elanco Products Company of Eli Lilly.

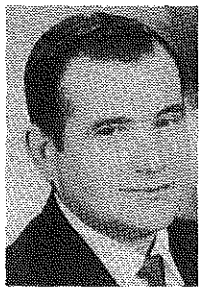
Many members of the local Young Farmer chapter are also involved in the Food for America Program or Agriculture In The Classroom as they are conducted in the school system. They serve as resource people to the classroom instructor or to the program coordinator in the school system. Some are hosts for tours where youngsters have the opportunity to see that milk comes from a cow and does not just appear in the grocery store. By cooperating in these two programs the Young Farmers and other adults in agricultural education have the opportunity to improve agriculture literacy as well as cooperate with the total agricultural education community.

The National Young Farmer Educational Association has been involved with Deere & Company and the National FFA Organization in the production and distribution of the video "Agriculture's New Professionals." This video is produced in an effort to replenish the human resource of the agriculture industry. It features seven agricultural professionals including a production farmer, a biotechnologist, and an international marketer who tell why agriculture is an exciting place to be.

Though much has been done and is being done, the Young Farmers are continually developing ways to provide agricultural literacy and improve the image of American agriculture. Through articles and publications the association is showing that a sustainable food and fiber system should be the concern of the consuming public — which includes the Young Farmers. Any progress made toward improving the perception about America's agriculture among the general public will benefit the farming members of the National Young Farmer Educational Association.

ARTICLE

A Western Reaction To The National Research Council Report



By Dale Carpenter and Doug Bishop

(Mr. Carpenter is Instructor, Agriculture Department, Dickinson State University; Mr. Bishop is Professor, Department of Agricultural and Technology Education, Montana State University.)

Few committee reports have caused so much unrest within the ranks of agricultural educators as the National Research Council's 1988 report, Understanding Agriculture: New Directions for Education. Most agricultural educators would agree the report has been good for the profession. The findings have forced the members of the profession to take a hard look at secondary vocational agriculture and the manner in which agriculture can and should fit into the entire school curriculum. The general conclusion reached following this careful scrutiny is that some changes will be needed. General agreement on the exact nature of the changes has not yet been reached.

How will the people affected most by the implementation of the proposed changes react? Will vocational agriculture instructors, students, and school administrators react favorably to the findings and subsequent recommendations made by the council? What incentive is there for the leading players in the "vocational agricultural game" to embrace a new type of instructional program?

Carpentier (1989) obtained responses from 502 students, freshmen through seniors, 87 vocational agriculture teachers, and 62 school administrators from Montana and North Dakota to a series of questions regarding the committee's recommendations. The questions asked were as follows:

a. What amount of time is currently being devoted to selected curriculum areas?
b. Is the amount of time being spent in the respective areas adequate, inadequate, or excessive?
c. How do you plan to change the amount of time devoted to the respective areas three years from now?
d. How important are the selected curriculum areas when preparing for a career in agriculture?
e. What is your reaction to the recommendations of the National Research Council?

Instructional Areas and Time Spent

According to the teachers, the major portion of the instructional time (over 80%) spent in agriculturally related instruction in the two states was devoted to five areas: agriculture mechanics, animal production, crop and food production, agribusiness, and the FFA. A considerably smaller amount of time was devoted to high technology, horticulture, global agriculture and forestry and natural resources.

Students and administrators felt the amount of time spent in all areas except global agriculture and high technology was adequate at the present time. Both groups favored spending more time in both of these instructional areas.

Three Years into the Future

Teachers, students and administrators were in total agreement that more instructional time should be devoted to agribusiness, high technology and global agriculture. All three groups felt the time currently spent in the five major areas was adequate for the immediate future. A logical conclusion that one might reach would be to integrate agribusiness, technology and global agriculture into the instructional content of the more traditional instructional areas.

The Importance of the Instructional Areas

In order for clientele to lend their support to the total agricultural education program, those who are responsible for conducting the program as well as those receiving the actual training must feel the instructional content is important. Teachers, students, and administrators were asked to evaluate selected competencies associated with the 9 curricular areas. Eight of the areas, (a) agricultural mechanics, (b) agribusiness, (c) crop and food production, (d) forestry and natural resources, (e) FFA, (f) high technology, (g) animal production and (h) global agriculture were considered to be important by all three groups. Horticulture was considered to be somewhat important when preparing for an agriculture career.

Committee Recommendations

Ten clear cut recommendations emerged from the findings of the National Research Council study. There was interest in knowing how Montana and North Dakota vocational agriculture teachers, agricultural students, and secondary school administrators felt about implementing the Council's recommendations.

Students in kindergarten through grade 12 should receive instruction about agriculture. The administrators agreed slightly with the recommendation. The students leaned more toward agreeing with the recommendation, while the teachers were in complete agreement the recommendation should be implemented.

The subject matter in vocational agriculture should be broadened. There was no noticeable difference in the feel-

ing among the three groups. The students were a little more supportive of the idea, but in general all three groups were inclined to be in slight agreement with the recommendation.

All schools with a vocational agriculture program should have an active FFA chapter. The instructors were somewhat more favorable toward this recommendation than either students or administrators. But when the responses from the three groups were compared, all were prone to agree with the recommendation.

Districts should budget more money to improve the vocational agriculture program. Both teachers and students agreed with this implied recommendation. School administrators were more cautious and were in only slight agreement with increasing the money spent for vocational agriculture programs.

The FFA should adopt a new name. Teachers, administrators and especially students disagreed with the committee's recommendation. There was very little interest in changing the name of the FFA in Montana and North Dakota.

The FFA should adopt new symbols. All groups simply disagreed with this recommendation.

The FFA should change its degree ceremonies. The instructors were in slight agreement with this recommendation. However, both students and administrators disagreed and felt the ceremonies should remain unchanged.

The FFA needs more awards in non-production agriculture. Montana administrators tended to disagree with adding more non-production awards while North Dakota administrators were in slight agreement with having more awards. Teachers and students from both states were in slight agreement with the recommended change.

The FFA should add more contests in non-production agriculture. Administrators tended to disagree with this recommendation, possibly because of the additional time students might be away from school. However, the teachers and students were in general agreement that more contests would be appropriate.

Provide a broader range of supervised occupational experience programs. The teachers agreed the supervised occupational experience program should be expanded in scope. It was interesting to note that administrators and students were much less enthusiastic (slight agreement) with having an expanded supervised occupational experience program.

Conclusions

Vocational agriculture instructors, students, and school administrators in Montana and North Dakota felt more emphasis should be placed on non-production curriculum areas, with specific emphasis on high technology, agribusiness, and global agriculture. Their responses seemed to indicate that all of the groups in both states felt eight of the nine identified curriculum areas were important when preparing for a career in agriculture. Horticulture was considered only slightly important in agricultural career preparation. Generally speaking, it appeared the respondents concurred with the recommendations about agriculture education but opposed the recommendations for changing the name, symbols and degree ceremonies of the FFA.

Vocational agriculture instructors, students and school administrators are cognizant of the need for change. Recognizing the need for change is one of the first steps in the change process. But what comes next? Dedicated individuals in the local communities will need assistance from the state and national level to implement many of the changes recommended by the National Research Council Study.

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National Academy Press, Understanding Agriculture: New Directions for Education, National Research Council, Washington, D.C., 1988.

Incorporating Agricultural Literacy In a State Program of Agricultural Education

(Continued from page 17)

In summary, State Department of Education implementation of agricultural literacy education will not come about in the absence of a planned approach to implementation. Recognizing the need to take action is the first step in such a plan. Perhaps the most difficult step to take will be making the decision to abandon the single purpose, traditional program of vocational agriculture in favor of a multipurpose program which includes a strengthened, modern component in agricultural **vocational** education, plus the two newly recognized components of agricultural **literacy** education and agricultural **career-exploration** education. After that difficult step is achieved, the planning and execution becomes easier.

Implementing Agricultural Literacy Programs

(Continued from page 6)

Second grade students study kernels of corn before beginning their projects on plant life.

Implementation at the Middle School/Jr. High Phase

Illinois Plan: Within the Illinois Plan, the processes and procedures for incorporating agricultural literacy at the middle school/junior high phase remain the same as the elementary school phase.

Jr. High Curriculum Project: A second curriculum project is in the process of developing science laboratory exercises to incorporate agricultural concepts at the junior high level.

Implementation at the Secondary Phase

Illinois Plan: Within the Illinois Plan, the agricultural literacy objective may be achieved at the secondary phase both as a part of the vocational agricultural education program and as separate courses for students interested in the impact of agriculture in their lives. Separate agricultural literacy courses provide the opportunity to reach a much broader audience and to tailor courses to the specific needs and interests of those enrolled. Agricultural literacy courses could be developed around the themes of the environment, economics, and technology as well as agriculture in our lives.

Core Curriculum Course Sheets: In an effort to assist with the implementation of agricultural literacy courses at the secondary level, the Illinois Agricultural Core Curriculum Project staff developed four course sheets. The course sheets are for Environmental Literacy in Agriculture, Economic Literacy in Agriculture, Technological Literacy in Agriculture, and Agriculture In Our Lives. The course sheets are not intended to be used as complete course outlines, but only to illustrate how some of the content in the core curriculum can be used to build an instructional program in the agricultural literacy area.

Consumer Education: All secondary students in Illinois are required "study courses which include instruction in the area of consumer education, including but not necessarily limited to . . . an understanding of the roles of consumers interacting with agriculture, business, labor unions and government . . ." (The School Code of Illinois). Agriculture teachers are encouraged to build linkages with those responsible for teaching consumer education in order to incorporate a substantial amount of agricultural literacy into this related course.

Summary

The above initiatives have been developed and implemented in an effort to broaden the number of students who have an opportunity to be exposed to agriculture and the food and fiber system, and to help students better understand the impact these have on their lives.

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Illinois State Board of Education. (1989). THE SCHOOL CODE OF ILLINOIS. Springfield, IL.

Partnerships + Variety of Activities = Successful AITC Programs

(Continued from page 7)

of resources, calendar of AITC events and sample lesson plans from educators who successfully integrate agriculture in their classroom.

The Foundation serves as the umbrella organization for the planning, development, implementation, promotion and funding for various AITC projects. It provides any individual, organization, company or public agency interested in promoting greater understanding about agriculture the opportunity to be involved and participate.

The Foundation supports various AITC projects and activities in four areas:

Teaching Training
Summer Agricultural Institute
Ag Academy for Leaders in Education
CA Ag in the Classroom Conference
University Student Teacher Program

Resource Material
Ag Video Library
Project Food, Land and People
Cream of the Crop Newsletter for Educators
Farm & Food Bytes Computer Software

Student Programs
San Francisco Farm Day
Los Angeles Farm Day
Adopt A Class/Adopt a Farmer
California Ag Magazine for 4th Grade Students
Community-University Scholars Program: An Agricultural Science Study
Student Farm Field Trips

(Continued on page 23)

Agricultural Literacy: A Basic American Need

(Continued from page 8)

1. Basic food production - the who, what, where, and how of our nation's agriculture. This area would include geography and economics, the interdependence of food, land, and people, as essential to human needs and the many opportunities of the farmer.

2. The historical development of agriculture through the years. This section would include the evaluation of agriculture, lessons history has taught us, our rural heritage or demographic trends, cultural differences around the world and land needs change.

3. Agriculture and the environment; industry and natural resource interdependence. This section would include the land use connection, human food chain, soil and water which would include quality and quantity, biotechnology and the environment.

4. Economics — the impact of agriculture on the global economy. This section includes instruction about the production process and marketing cycle, basic supply and demand, politics and agriculture or farm policy, agriculture's impact on economics and consumer choices.

5. Images and attitudes or the views and perceptions of the interdependence of food, land and people. This section included basic appreciation of our natural resources, stewardship and sustainability, food and culture, the misconceptions of the importance of food and resources, land of abundance, good food at cheap prices and broad base of career opportunities.

6. Decision-making or shaping policy now and for the future. This area would include information about the relationship of government and agriculture, land ownership trends, impacts of political, economic and sociological decisions on our food and resource base, animal warfare and the issue of world hunger.

7. Future considerations or global pressures on food production and resource management. This would look at world population trends and food needs, biotechnology and other revolutions in agriculture, resource management for future generations, ecosystems and the development of space as a food source.

At the time of this writing this project is still in the developmental stage. When developed and funded Project Food, Land and People would certainly provide the needed information to create a literate agricultural society.

So, why is there a need for an agriculturally literate public? It certainly is fine to be able to intelligently converse about agriculture, what is it, where we've been, and where we're going. It's good to be knowledgeable about the subject in general and what future trends may occur. But, specifically, the real need for an agriculturally literate society is knowledge of the impact the industry, as a whole, has upon our daily lives. Whether economically, environmentally or socially, agriculture impacts us in many ways. The American people rely on agriculture for basic survival needs, for economic needs, and to protect the land. The interrelationship of these areas is why agriculture literacy is a basic need in America today.

Position Statement on Agricultural Literacy

(Continued from page 14)

then support to teach about agriculture. Much of science, social studies, mathematics, history, and reading might be taught incorporating agricultural illustrations and examples into existing courses.

One significant barrier to implementing comprehensive agricultural literacy programs in the schools is that there is now no staff member in most schools who is knowledgeable of agriculture and who can serve as a resource person. This needs to be remedied through special policies and funding to provide pilot, demonstration, or exemplary efforts to incrementally implement the types of agricultural literacy initiatives suggested in this paper.

Finally, the scope of agricultural literacy is so great that one should not expect to implement it with existing resources and personnel in the agricultural education profession. Creative policies should be pursued which would allow for widespread expansion of resources and energy required to implement such as comprehensive vision. Now is the time to start.

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Partnerships + Variety of Activities = Successful AITC Programs

(Continued from page 22)

Special Programs
Ag Institute for Government Executives
Department of Education AITC Liaison
AITC Ambassador Program

Successful implementation of Ag in the Classroom activities and materials is dependent upon well-organized and well-informed volunteers and staff representing both agriculture and education. In California, in addition to our state coordination through the Foundation, county AITC committees are encouraged to meet regularly to keep informed of county, state and national AITC activities and to plan local AITC projects.

I am very encouraged by the results we have already achieved and I am excited by the enthusiasm and support we see from individuals in both agriculture and education. As a past participant of both 4-H and FFA, I am convinced Ag in the Classroom will stimulate: 1) increased interest in both 4-H and FFA, 2) promote greater awareness of the numerous career opportunities found in agriculture, and 3) contribute to a population with a greater understanding and appreciation of agriculture's importance to our economy and society.

Stories in Pictures

NVATA Outstanding Vocational Agriculture Teacher Award
1989
Left to Right: Roscoe Nash, Carl D. Swenson, Ray Miller, William L. Heck, Branch Manager, Ford New Holland, Tucker, Ga; James E. Hively, Kenneth Brashaber, Ray E. Chelewski.

NVATA Outstanding Young Member Award
1989
Left to Right: D.R. Margenthaler, Manager, Corporate Support Programs, John Deere, Moline, IL; Darrell W. Ricketts, James W. Lundberg, Nick Siddle, Edward D. Stevens, Kevin O. Harris, Keith Schiebel.

NVATA Outstanding Vocational Agriculture Program Award
1989
Left to Right: Ken Tucker, Chowchilla Union High School, Chowchilla, CA; Kenny Beams, Kingfisher High School, Kingfisher, OK; Daniel J. Leinen, Harlan Community School, Harlan, IA; Keith A. Walker, Thomas McKean High School, Wilmington, DE; Arnie Oelkers, Manager, Service Training, Case IH, Racine, WI; John Dillard, Carthage Area Vo-Tech, Carthage, MO; Jim Honey, Carthage Area Vo-Tech, Carthage, MO' Edward Stephens, Carthage Area Vo-Tech, Carthage, MO; Dale Cochran, Sun Valley High School, Monroe, NC.

NVATA Honorary Life Member Awards
1989
Left to Right: David E. Schuh, James A. Thornhill, Duane A. Van Sickle, Duane Watkins, NVATA President; Thermopolis, WY, LeRoy Smeltz, Jack Staats, Alva, OK, accepted the award for Ernest Muncrief; Jim Armbruster, Yuma, AZ, accepted the award for Charles Turpin, Jr.