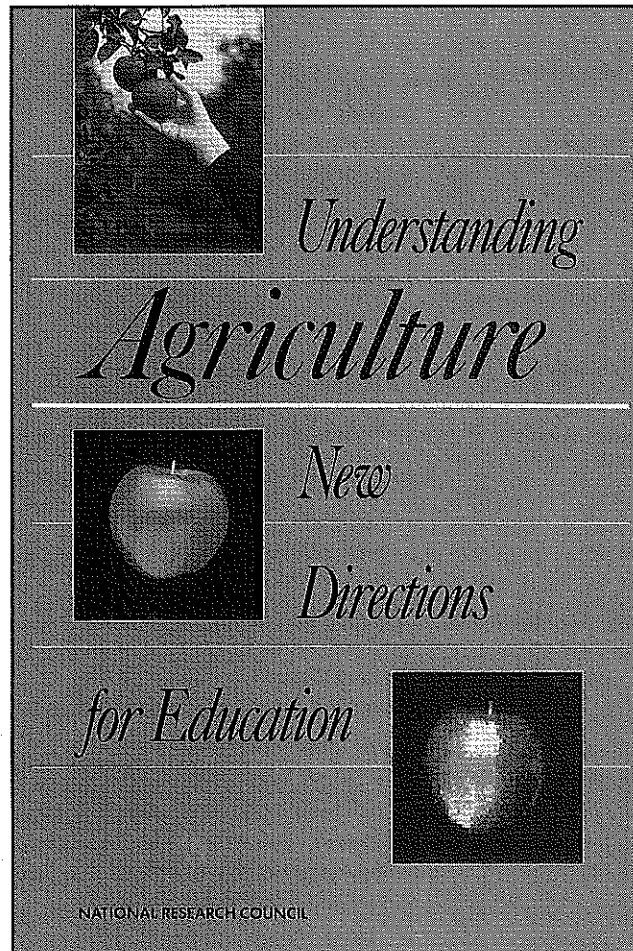


the **Agricultural Education**
magazine

March, 1996
Volume 68, Number 9



Agricultural Literacy

About Agriculture



MANAGING EDITORS

Editor
 LOU E. RIESENBERG, Agricultural and Extension Education, 1134 West 6th St., University of Idaho, Moscow, ID 83844-2040

Consulting Editor
 ED W. OSBORNE, Agricultural Education, 328 Mumford Hall, University of Illinois, Urbana, IL 61801

Business Manager
 GLENN A. ANDERSON, 10171 Suzanne Rd., Mechanicsville, VA 23111

REGIONAL EDITORS

Eastern Region
 M. SUSIE WHITTINGTON, Agricultural and Extension Education, 413 Agriculture Administration, Penn State University, University Park, PA 16802-2601

Central Region
 MICHAEL K. SWAN, Agricultural and Extension Education, 155 Home Economics Building, North Dakota State University, Fargo, ND 58105

Southern Region
 LARRY R. JEWELL, Agricultural Education Program, North Carolina State University, Raleigh, NC 27695-7801

Western Region
 BRENDA SEEVER, Agricultural and Extension Education, Box 30003, Dept. 3501, New Mexico State University, Las Cruces, NM, 88003-0003

SPECIAL EDITORS

Electronic Technology
 MICHAEL E. NEWMAN, Agricultural Education and Experimental Statistics, P.O. Box 9731, Mississippi State University, Mississippi State, MS 39762-9731

International Agriculture
 ROBERT MARTIN, Agricultural Education and Studies, 201 Curtiss Hall, Iowa State University, Ames, IA 50011

Success Stories
 L. DEVERE BURTON, Agricultural Education, P.O. Box 8372, Idaho State Division of Vocational Education, Boise, ID 83720-0095

EDITING-MANAGING BOARD

Chair
 Robert Sommers, Ohio Department of Education

Vice Chair
 Janet L. Henderson, The Ohio State University

Secretary
 Ed Osborne, University of Illinois

Editor
 Lou E. Riesenber, University of Idaho

Members
 Glenn A. Anderson, Virginia Department of Education
 MeeCee Baker, NVATA, Mifflin, PA
 Randy J. Bernhardt, National FFA Center (Ex Officio)
 Larry Case, U.S. Department of Education (Ex Officio)
 Tom Heffernan, NVATA, Poteet, TX
 Larry R. Jewell, North Carolina State University (Ex Officio)
 Bobby Joslin, NVATA, Cartersville, GA
 Larry Powers, North Carolina A&T State University
 Brenda Seevers, New Mexico State University (Ex Officio)
 Don Sligar, Oregon Department of Education
 Marshall Stewart, NVATA, Alexandria, VA
 Michael K. Swan, North Dakota State University (Ex Officio)
 M. Susie Whittington, Penn State University (Ex Officio)

Table of Contents

	Page
Theme Editor's Comments	
"Sharing" the Gospel According to Agriculture!.....Martin J. Frick	3
Theme Articles	
Agricultural Literacy: An Integrated Content and Partnership Approach.....John D. Parnley, Kelly S. May, & Art Hutchinson	4
Idaho Agriculture in the Classroom - Teaching Elementary Teachers and Students About Agriculture.....Douglas A. Pals & Rick Waitley	6
Middle School Agricultural Education: Playing a Large Role in Agricultural Literacy.....Brad Moore & Randall Violet	8
Agricultural Communication - Bridging the Gap.....Robert J. Birkenholz & Jay Craven	10
Ag-Outside-The Classroom...A Citizen's Agenda.....Stuart Nunnery	12
Agricultural Education in Russia: Challenges for Teachers.....Galina V. Pichugina	14
Feature Articles	
Agricultural Education in the United States: An Overview.....William G. Camp	16
Cultivating Ownership: Collaborative Curriculum Development in the "Live Free or Die" State.....Janet Rosenquist	17
Book Review	
Introduction to Horticulture: Science and Technology.....Anne Marie VanDerZanden	20

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 the article unless one is on file with the Editor. **Articles in The Magazine may be reproduced without permission.**

PUBLICATION INFORMATION

The Agricultural Education Magazine (ISSN 7324677) is the monthly professional journal of agricultural education. The journal is published by The Agricultural Education Magazine, Inc., and is printed at M & D Printing, 616 Second Street, Henry, IL 61537.

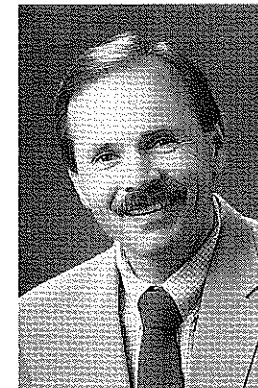
Second-class postage paid at Mechanicsville, VA 23111; additional entry at Henry, IL 61537.

POSTMASTERS: Send Form 3579 to Glenn A. Anderson, Business Manager, 10171 Suzanne Rd., Mechanicsville, VA 23111.

SUBSCRIPTIONS

Subscription prices for The Agricultural Education Magazine are \$10 per year. Foreign subscriptions are \$20 (U.S. currency) per year for surface mail, and \$40 (U.S. currency) foreign airmail (except Canada). Student subscriptions in groups (one address) are \$5 for eight issues and \$6 for twelve issues. Single copies and back issues less than ten years old are available at \$1 each (\$2.00 foreign mail). All back issues are available on microfilm from Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. In submitting subscription, designate new or renewal and address including ZIP code. Send all subscriptions and requests for hardcopy back issues to the Business Manager: Glenn A. Anderson, Business Manager, 10171 Suzanne Rd., Mechanicsville, VA 23111. Publication No. 737246.

"Sharing" The Gospel According To Agriculture!



BY: MARTIN J. FRICK

Dr. Frick is an assistant professor of agricultural education at Montana State University, Bozeman.

The notion of agricultural literacy has been with us for over ten years now. This issue provides its readers with a sampling of what the agricultural education profession and some others have been doing to address the issue of agricultural literacy. As I see it, the real "rub" for teaching and promoting agricultural literacy comes not by asking the question "Why?" but by moving on to question "How?". What are the strategies and processes we should use to further agricultural awareness in our context? As you read the articles contained in this issue it is important to consider our present and past successes in order to better understand how we might address agricultural literacy in the future. The future is bright! Agricultural literacy has grown from basically an elementary program to the establishment of college courses on agricultural issues and the development of middle school programs devoted to increasing the agricultural awareness level of students without a change in job description for most of those involved.

For most of us in agricultural education, our job description tells us that we don't have to formally tackle agricultural literacy. But for some reason, many of us believe it is important. I am convinced our belief is rooted in the fact that we are not only educators, but are also agriculturists. At least I consider myself a student of agriculture. It is from this perspective that I continually get excited about agriculture and about the possibility of telling others of its importance in our society. Maybe they can tell from how I act that I'm just a little "crazy" about the subject!

Even though agricultural literacy may seldom be in the job description of high school agricultural educators, they have some unique credentials to promote agriculture throughout a K-12 school system. In almost every case, the agricultural education instructor is the only school faculty member who has been awarded a bachelor of science degree by a college or department of agriculture. With this credential, they are the only true "agricultural ambassadors" who can directly, and through encouraging other teachers, "share the gospel according to agriculture" to increase the agricultural

and food awareness level of the students in their school. Although agricultural literacy may not be on the priority list of many secondary schools, agricultural education instructors should seek opportunities to promote agricultural literacy so that more people see the connection between agriculture and the standard of living we currently experience.

We must remember that food and agriculture are a significant part of the reason for the quality of life we enjoy and that they are most often taken for granted. Yet the natural resource base we use to produce our abundance of food does not guarantee a never-ending supply. Agricultural literacy is an educational investment of our time and talent that must be made for the future so that the quality of life we now enjoy continues. Please explore the articles contained within this issue. Look at the potential presented in the ideas and programs and challenge yourself to see how they might be adapted and implemented in your school and community! ■

About the Cover

Understanding Agriculture: New Directions for Education was published by the National Resource Council Committee on Agricultural Education in Secondary Schools Board on Agriculture in 1988. This publication was the impetus for the focus on agricultural literacy in the agricultural education arena.

Agricultural Literacy: An Integrated Content and Partnership Approach

By: JOHN D. PARMLEY,
KELLY S. MAY, AND ART
HUTCHINSON

Dr. Parmley is an associate professor in the department of secondary education at Kansas State University, Manhattan, Ms. May is a social studies instructor at Adams County High School, Commerce City, CO. Mr. Hutchinson is area manager and park ranger at Hovenweep National Monument and park ranger and coordinator of school based educational activities at Mesa Verde National Park, Cortez, CO.

While many contemporary Agricultural Educators seem to view the current effort to acquaint the general public with the essential elements of agriculture as a late twentieth century idea, it simply is a reappearance of an undertaking which has its roots in the earliest days of Colonial America. Previous efforts were designed to produce an agriculturally literate citizenry and employed a variety of models. These models have provided significant suggestions for the authors as they have collaborated on educational activities. With the following overview of agricultural literacy movements in previous times, the authors share some of the considerations which led to their collaborative activities.

While many tend to believe the early North American settlers were at least minimally proficient in the production of food and fiber, a closer examination of history reveals that these first settlers were primarily gentlemen adventurers seeking their fortunes, religious dissenters, prisoners taken from jails, poor children, seamen, and soldiers. They were not farmers seeking new land on which to apply their knowledge and talents. Thus, early colonial agriculture developed out of reactions to failure and a lack of understanding on the part of people who did not intend to become farmers (Cochrane, 1979).

Therefore, the first agricultural literacy movement involved these newly arrived settlers seeking information about food production from Native Americans who had developed effective farming practices through centuries of experimentation and careful observation. Without glorifying or minimizing these early interactions, it seems fair to characterize these exchanges of information as combinations of awareness, or literacy, and sharing of specific production practices. At this point we had those who wanted or needed to become proficient in farming seeking general and specific information from those who were proficient in farming and who considered food production to be connected to all areas of life.

By the time we reach the late 1700s, we encounter one of the more notable and interest-

ing efforts to inform the American public about agriculture. The first of several societies for promoting agriculture in the United States was established in Philadelphia on March 1, 1785. Published reports from the Philadelphia Society's early meetings state that the organizers were "men who were for the most part engaged in pursuits having no immediate connection with agriculture" (United States Department of Agriculture, 1895). Even though many of the Society's founders were not directly involved in farming, they tended to be influential people who understood the importance of agriculture (Philadelphia Society for Promoting Agriculture, 1935 and Woodward, 1939). In contrast to earlier times, agricultural societies were organized by those who recognized the importance of agriculture and sought to involve prominent farmers in activities designed to inform the general public. They also sought to improve agricultural production practices.

With the development of a newly independent nation came renewed attention to education and schools to serve the masses. Agricultural content and experiences became an important part of schooling during America's first 150 years. While distances and associated communication obstacles have made it difficult to compose a comprehensive picture of curricula followed within individual schools or developed by state leaders, 12 states reported notable examples of agricultural instruction before 1900 and 27 states and Puerto Rico reported actions taken by state legislatures or government agencies to require or facilitate instruction about agriculture prior to 1920. (Stimson and Lathrop (1942), Foght (1911) and True (as written in United States Department of Agriculture, 1895)). A closer look at some of these early school experiences reveals that curriculum developers wanted students to be at least familiar enough with production practices to help raise crops in gardens and to provide adequate care for animals or pets. They also recognized the opportunities agriculture provided as teachers sought to enhance learning experiences in traditional academic disciplines. Teachers expected students to connect agriculture to the larger view→

of their world and understand that agriculture was not just the production of food and fiber. Agriculture was part of history, geography, mathematics, science, and language arts.

The following years saw rapid expansion of schools and specialization of curricula. Also during that time American agriculture's level of sophistication substantially increased while the percentage of the population directly involved in farming decreased significantly. With the developments in education and agriculture came a drastic erosion of attention to agriculture as subject matter important for all students.

As the authors have reflected upon these previous efforts to develop an agriculturally literate citizenry, they have concluded that the most successful approaches have involved activities which were designed to help individuals connect agriculture to other areas of life and not merely transmit isolated information.

The activities which bring the three authors together reflect both historic approaches and emerging educational practices. These collaborative activities were coordinated by Ms. Kelly May in her role as middle school social studies teacher in Garden City, Kansas. The middle school curriculum and instruction approach employed by the school district provided opportunities for teachers to develop multidiscipline teams and utilize extended blocks of time to facilitate an integrated curriculum. The core academic areas represented in each team were social studies, science, language arts, and mathematics. In addition, other "support" areas, such as art, were integrated into the curriculum.

As the team prepared for the integrated unit on Native American cultures, the decision was made to provide an overview of identified cultures including the contributions of such cultures. Beyond this overview, the team would focus attention on the Ancestral Puebloan, or Anasazi, culture of the American Southwest. Among the culturally historic Anasazi sites are Mesa Verde National Park and Hovenweep National Monument. Under the leadership of Ms. May, contacts were established with Art Hutchinson, Park Ranger and Education Coordinator for Mesa Verde National Park, who directed the team to a variety of appropriate learning materials and responded to specific questions.

Also, during this unit planning time, the team became aware of the partnership which exists between Kansas State University and Mesa Verde. Of special interest was the partnership's focus on the development of computer based, educational materials which support teacher driven instruction and provide sound and visual resources for students to use to construct multi-

media presentations.

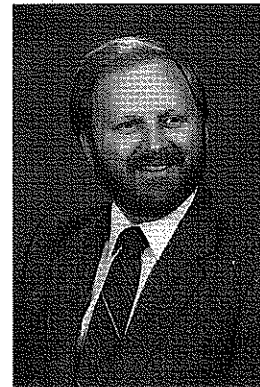
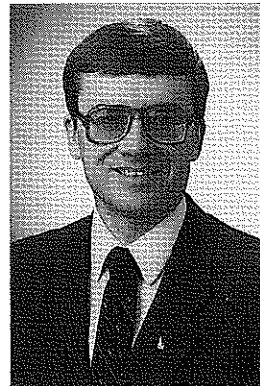
At this point, the unit was launched and students were challenged to investigate three principle questions which surround the Anasazi Culture. Those questions are: 1) How were these early people able to make the shift from hunting and gathering food by following the seasonal migrations of animals to a more stationary existence? 2) What was the nature of everyday life during the eight to ten centuries in which they occupied the Mesa Verde region? 3) Why did they leave the region during a quarter of a century after having lived in the area for such an extended period of time?

As students accessed traditional printed material, examined video tape programs, discussed more specific questions with Park Service staff, and utilized other information sources, they were asked to work collaboratively in teams and share information and ideas. As students conducted this thorough examination of the Anasazi culture, they were challenged to draw conclusions and identify issues on which they questioned the conclusions presented in the literature. One of the conclusions offered by students related to the role of farming practices which enabled the people to stay in one location and grow much of their food rather than following the seasonal development of wild food plants and the migrations of animals. It seemed to be somewhat surprising to many of the students that agriculture was the key ingredient which enabled human cultures to develop in permanent locations. As the people grew more food, clans or villages were able to support more people. During favorable growing seasons and through basic species selection, the people were able to produce surpluses and subsequently encountered the need to build places to store the excess. A reliable source of food enabled people to specialize and their culture to flourish.

After each team had analyzed a variety of available information and had collaborated on the development of conclusions, they were asked to synthesize their information and conclusions into a brief written summary. At this point, Ms. May and other members of the instructional team worked with John Parmley of Kansas State University's College of Education to provide a unique capstone experience. Arrangements were made for Dr. Parmley to provide the previously-mentioned, computer-based, educational materials. Each student team reflected upon their written summary which now served as their initial development storyboard. Next, they selected or developed appropriate digital images, sounds, music, and text to create a multimedia interpretation of their ques-

(Continued on page 20)

Idaho Agriculture in the Classroom - Teaching Elementary Teachers and Students About Agriculture



BY: DOUGLAS A. PALS
AND RICK WAITLEY

Dr. Pals is a professor in the department of agricultural and extension education at the University of Idaho, Moscow, and Mr. Waitley is the director of Idaho Agriculture in the Classroom, Meridian.

The lives of Idahoans depend on agriculture. Not only does Idaho agriculture provide citizens with a regular supply of healthy food, clothes to wear and houses to live in, it also provides a good share of the salaries paid to Idaho wage earners. Directly or indirectly, nearly 50 percent of Idaho's workforce in private industry is involved in agriculture.

A lack of awareness about agriculture is creating critical problems that could jeopardize Idaho's economic future. With less than 2 percent of the population involved in production agriculture, the general population is far removed from the source of their sustenance. Yet, the population can impact it with decisions made in the voting booth with no basic understanding of agriculture.

There is also concern about the projected shortage of trained agricultural professionals as enrollment in agriculture schools continues to lag behind the demand for graduates. The image of agriculture as a high-technology business needs to be brought into the classroom to interest tomorrow's leaders and scientists.

Because of these concerns, in 1985, the concept of Idaho Agriculture in the Classroom was initiated by a small group of agriculturists. They were soon joined by educators, farmers, agricultural groups, and private industry to produce the first edition of the Idaho Agriculture in the Classroom Curriculum guide.

In 1996, the sixth printing of the guide will take place. These guides will be distributed this summer to teachers who will join over 1500 trained teachers statewide in helping students gain a greater understanding of natural resources and the processes involved to produce a safe, abundant, and affordable food supply. It is the hope of individuals involved in the leadership of Agriculture in the Classroom that as these young citizens become active consumers of food and fiber, they will understand the basic issues of agriculture, the environment, and the economy.

Current Status of Idaho AITC

The Idaho Agriculture in the Classroom (AITC) program was established as part of a nationwide effort on behalf of USDA Secretary John Block to create an awareness of the lack of knowledge possessed by school children and educators towards the industry of agriculture. In 1985-86, regional meetings were held across the US where Secretary Block challenged State Departments of Agriculture to become involved in an all-out effort to provide instructional materials and training to elementary children on the production of food and fiber.

Idaho created the Idaho Agriculture in the Classroom Association in hopes of targeting fourth grades in Idaho's public and private schools with valuable information regarding the agriculture industry. From the beginning, the Department of Agricultural and Extension Education (AEE) at the University of Idaho has been a main player. The development of a statewide teaching guide was under the direc-



In the summer of 1995, over 360 teachers from around the state of Idaho participated in the Idaho Agriculture in the Classroom project. (Photo courtesy of Rick Waitley.)

tion of Dr. Doug Pals, professor in the AEE Department at Moscow. Dr. Pals also served as a supervising instructor for the original workshops held for elementary teachers as in-service for the teaching curriculum.

In 1994, AEE was instrumental in sponsoring the first Level II workshop training for teachers seeking a more advanced approach in teaching agriculture in their classrooms. Through a cooperative effort in 1995, the University of Idaho sponsored a second Level II workshop and expanded the program to Ricks College, a private institution in eastern Idaho. The University of Idaho was able to provide two credits for the advanced workshop and plans have already been made for a Level II workshop at the College of Southern Idaho in Twin Falls this coming summer.

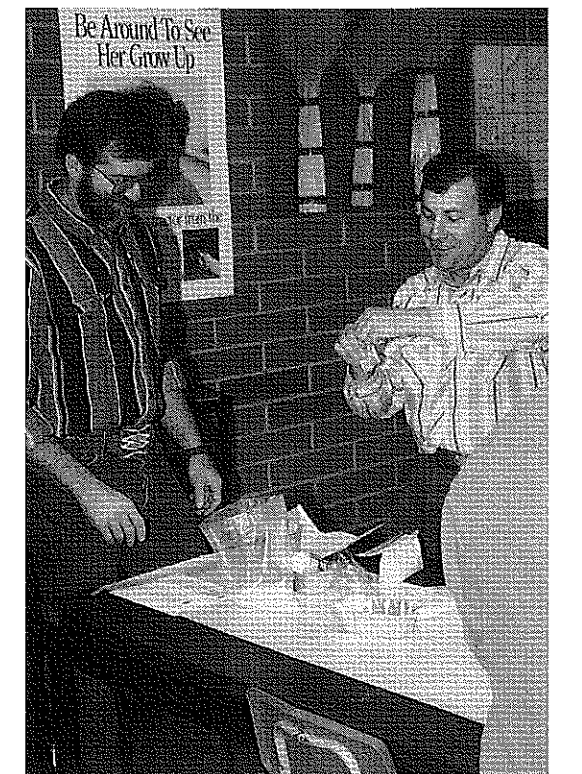
In the summer of 1995, eleven workshops were sponsored by the AITC association for teachers in Idaho. The workshops attracted over 360 teachers for the opportunity to learn about the agriculture industry and to develop hands-on experience with the teaching guide. In addition, teachers could earn one University of Idaho credit.

In recent years, the program has been expanded to include teachers from pre-school through 12th grade. Collaboration with other agencies of state and national government, working with commodity groups and grower associations as well as many, many interested farmers and ranchers, has allowed development of a strong base of support for the Idaho AITC program. The AITC program is jointly sponsored by the Idaho Department of Agriculture, University of Idaho, College of Agriculture, and the agriculture industry. In 1993, a contractual agreement was arranged with Waitley Associates for the coordination activities of the Idaho AITC program. Rick Waitley, '73 Agricultural Education graduate of the University of Idaho, is the president of Waitley Associates and offers the day-to-day guidance and direction of the program as outlined by the AITC Board of Directors.

Waitley commented about the impact of the program by saying: "The Department of Agricultural and Extension Education has continued to provide quality leadership through Dr. Doug Pals to the programmatic and educational content of the AITC program in Idaho. Without this direction, our teaching team of fourteen dedicated elementary teachers who provide instruction in the summer workshops, along with a host of volunteers from agricultural organizations and associations, would not have made

nearly the impact on the school children of our state. Thanks to the careful direction and guidance from the personnel at the University of Idaho, we possess one of the finest guides in the nation." Waitley continued, "In addition to the guide, the quality of instruction and the quantity of information provided through our summer workshops for both Level I and Level II training make Idaho a leader in the nationwide effort for AITC."

The AITC program participates in regional and national workshops related to the AITC program and three times a year publishes a student reader for classroom use by trained AITC teachers in Idaho. Waitley concluded by saying, "Secretary Block was visionary in seeing the lack of education for children regarding the



Idaho Agriculture in the Classroom is only scratching the surface of what can be done to inform Idaho citizens about how their food and fiber are produced. (Photo courtesy of Rick Waitley.)

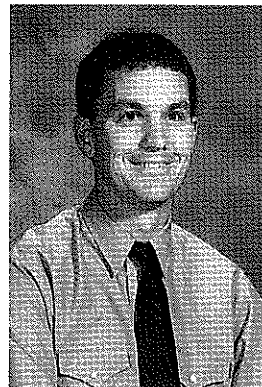
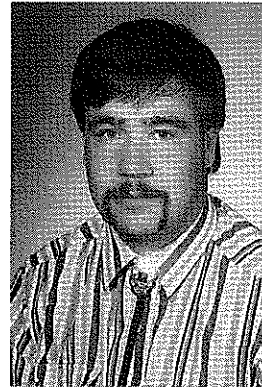
industry of agriculture. Without his insight and wisdom, the program of AITC, as we know it today, would not be as strong and viable. AITC in Idaho is assertive and growing due to a cooperative effort between many parties and a dedicated network of agriculture leaders in Idaho."

Workshop Content Is One Reason for Success

Level I. The AITC Level I workshop agenda was developed in 1988. It has had minor revision during the last 7 years and is flexible

(Continued on page 9)

Middle School Agricultural Education: Playing A Large Role In Agricultural Literacy



BY: BRAD MOORE AND RANDALL VIOLETT

Mr. Moore is the agricultural education instructor in the Carter County School District, Ekalaka, MT. Mr. Violet is currently on a leave of absence from Colstrip School District, Colstrip, MT and is a graduate assistant in the agricultural education program at Montana State University, Bozeman.

Middle school agricultural education programs are prime models for teaching agricultural literacy. The dilemma over what is to be taught to middle school agricultural education students can be answered with agricultural literacy. Instead of watering down the secondary agricultural education program for middle school students, enhancing it with agricultural literacy and the subject areas that encompasses offers much to this age group.

There is a great deal of agricultural literacy material available for the teacher to use from Agriculture in the Classroom programs. An example of this curriculum material in Montana is provided by Agriculture in Montana schools (AMS), which is a state affiliate of Agriculture in the Classroom. AMS has a resource which has been developed with the middle school student in mind and provides instructional material to aid in the development of an understanding of the importance of agricultural literacy in Montana. Two prime examples of how agricultural literacy is being taught in middle school agricultural education programs are found at Carter County School District in Ekalaka, Montana, and Colstrip School District in Colstrip, Montana. Both of these schools are located in southeastern Montana, but have very different student populations and agricultural resources; Carter County, with a student enrollment of 77 students in grades 7-12, is located in one of the most isolated regions in the state. Agriculture is the number one source of revenue in Carter County and is primarily made up of cattle, sheep, and range land. Colstrip is a larger school district of 700 students in grades 6-12 and is within thirty miles of an interstate road system. The major economic contributor to Colstrip's economy is a coal mine and the four coal powered generating plants along with a timber and cattle industry. These two programs are using a hands-on approach for promoting agricultural literacy.

In the Carter County agricultural education program the concept of agricultural literacy is generally addressed in the 8th grade agricultur-

al education class as a course requirement. This provides a good classroom environment to teach the agricultural literacy concepts as the teacher works with both the nontraditional and traditional agricultural student. The course is fast-paced and dives into the importance of agriculture in Montana and the United States. Game-type activities, especially in middle school, provide a fun and competitive setting for the classroom environment. For example, a game has been developed to help students relate to some of the staggering statistics involved in agriculture, such as pounds of beef eaten per capita in the U.S. and the percent of income spent on food in the U.S. which are addressed in the form of a question. Students write down their guesses and the person with the closest answer is rewarded. Since Carter County is largely a production agriculture area, much time is spent on the importance of the sheep, cattle, and range land resources from a consumer perspective. Students are introduced to the concepts of how livestock utilize range resources and trace the steps the commodity takes before ending up as a retail product at the grocery store. Students are also exposed to the other products that are derived from a beef animal besides retail meat. Students are challenged to find as many by-products of the beef steer that they use everyday by contacting local producers, parents, or other secondary agricultural education students. Conservation of natural resources used by agriculture is another subject of focus in Carter County's 8th grade program. The causes of soil erosion are emphasized by the use of models to show how water erodes soil types differently and how the amount of organic matter can influence both soil and water erosion. Finally, the vastness of agriculture is shown to students by a day long tour to the annual MATE (Montana Agricultural Trade Exposition) in Billings, Montana. Here the students have the opportunity to meet with salespersons and representatives from all phases of agriculture and see the diversity and extent of agriculture in other regions of Montana.

The concept of agricultural literacy isn't a→

topic that can be taught as a single course, but rather an additional and important part to other courses offered in the agricultural education program. Agricultural literacy has a tendency to be taken for granted in small rural communities and is often overlooked as an instructional area in agricultural education. But even in small rural communities with an economy based on agriculture the importance of teaching the concepts of agricultural literacy cannot be over-emphasized. The fact that one semester of agricultural education is required by all 8th graders in Carter County generates an opportunity for the instructor to provide a solid understanding of the importance of agriculture. Hopefully, students exposed to this form of middle school agricultural education will continue on in agricultural education at the secondary level, but if they choose not to enroll, they will better understand the importance and role agriculture plays in today's society.

In the Colstrip school system agricultural literacy is taught in a middle school setting for sixth to eighth grade students. Initially the program was offered at the middle school level to promote the secondary program. The program offers an elective course for one class period a day during a semester. The course is well-received and helps fill a scheduling void at the middle school. From this original course, a need for a more agricultural literacy curriculum at the middle school level was realized. This need was observed through students taking the middle school class who did not enroll in the secondary program. Since the original purpose of increasing secondary enrollment through the middle school program was not achieved, the instructor met with the program's advisory committee and received their support in pursuing an agricultural literacy program at the middle school level.

The most readily available instructional material was that developed by the AMS. AMS material provided a great foundation for an agricultural literacy-based program. Besides the AMS material, other activities and lessons were developed to make a semester of fun-filled learning. The two most successful activities are soil testing and a plant treasure hunt. The soil testing activity is done by assigning the students to bring in a soil sample from their garden. Then by using an inexpensive garden test kit from the local hardware store, the students determine the amount of NPK in their soil. This leads to discussion on how to apply the fertilizer they need for the garden. Many agricultural issues are also discussed at the same time, such as water quality and soil erosion. The plant treasure hunt begins by sending the students

outside to find three grasses, two forbs, and one shrub. This interest approach leads to discussion about environmental studies and the importance of maintaining the range lands' native plants. A central theme of all instruction in the Colstrip program is to teach concepts about agricultural literacy in an activity-oriented setting.

The common tie between the programs described above is that they have recognized the importance of agricultural literacy and have developed curriculum materials with the middle school student in mind. It is exciting to capture the energy of the middle school student through agricultural literacy. ■

Idaho Agriculture

(Continued from page 7)

enough to adapt to the teacher trainers who are actually teaching the workshop. The Level I agenda schedules approximately 15 contact hours over two days. In addition to attendance at the workshop, participants are required to submit an agriculture-related lesson plan to receive one University of Idaho credit. A short summary of the workshop content follows:

Teachers receive a good understanding of the importance of agriculture in their daily lives and the purposes of the AITC program. A 500-page curriculum guide is the focus of much of the workshop. Teachers learn what is in the guide and participate in demonstrations of materials in the lessons. They may see demonstrations of teaching units from biotechnology, natural resources, and sheep production to Idaho's exportation of agricultural products.

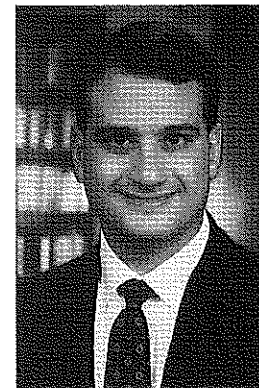
Three individuals involved in a career in agriculture are invited to the workshop to play "What's MY Career?" with the teachers. It is attempted to schedule a 4-5 hour tour with a farming operation, a processing factory, or occa-

(Continued on page 16)



These teachers are involved in a demonstration which can, in turn, be used in the Idaho classroom to demonstrate the importance of Idaho agriculture. (Photo courtesy of Rick Waitley.)

Agricultural Communication — Bridging the Gap



BY: ROBERT J.
BIRKENHOLZ AND JAY
CRAVEN

Dr. Birkenholz is an associate professor in the department of agricultural education at the University of Missouri, Columbia. Mr. Craven is an agriculture instructor at St. James R-1 School District, St. James, MO.

One of the most important roles that an agricultural educator can fulfill is the preparation of agriculturists who can tell their story—to be effective communicators. As the number of people in the United States and the rest of the world who participate in and understand agriculture continues to shrink; agricultural literacy is becoming more of an urgent problem. This issue is becoming more important as animal welfare, food safety, showing ethics, the environment and other concerns become more prominent in the news.

One major reason that these issues have become volatile can be traced back to problems in communication. Our failure to adequately explain and justify agricultural practices to the opponents of today's production techniques has led to public misunderstanding and misinformation. There is a need to correct this situation to allow citizens to make judgments from an educated position rather than a misinformed, impassioned position.

People have a right to be concerned about the food they eat and the water they drink. It is our job as agricultural educators to explain away their concerns that are not warranted and to make changes where they are warranted. We must not only be preparing better stewards of our natural resource base for the future of agriculture, but we must prepare better communicators to promote the industry of agriculture.

FFA and agricultural education have historically provided opportunities for students to develop and polish communication skills through speaking, writing, and leadership activities. However, it may be time to take this role one step further to promote a more complex, global agriculture in which a greater proportion of the population is looking over the farmer's shoulder.

Some agricultural education programs have offered courses in agricultural communications. Through such courses, today's students and tomorrow's agriculturists should be better able to respond appropriately to questions raised concerning agricultural practices by: 1) being better informed about agriculture and food issues; and 2) becoming better communi-

cators. Misinformation circulating among an increasingly health-conscious public is one of our worst enemies. Time and time again agriculturists have recognized that complete and accurate information is to their benefit.

Agricultural literacy should be embraced as a major functional objective of a high school agricultural communications course. Students enrolled should be trained to consider the effect of public perceptions on their vocations. These courses should develop the full range of communication and leadership skills including: goal setting, self motivation, interview skills, self marketing, role-modeling, resume writing, interpersonal communications, body language, group leadership, letter writing, news writing, public speaking, individual and group presentations, displays and more. Attached to this article is an overview, topic outline, and competency profile for such a course taught in the agricultural education program at St. James High School in south central Missouri.



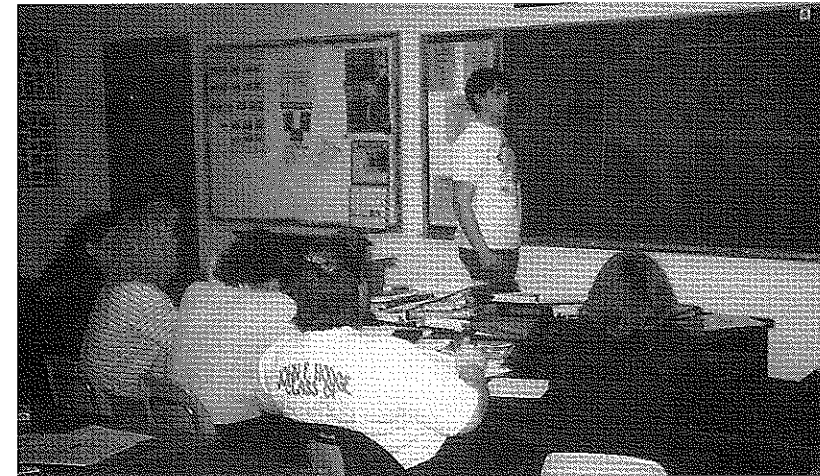
Agricultural Communications courses can emphasize the importance of being positive role models and examples for current and future leaders in the industry of agriculture. Through these efforts, both young and old consumers might better be able to see agriculture in the best possible light. (Photo courtesy of Bob Birkenholz and Jay Craven.)

Ag Communications - St. James Agriculture Department

Course Description

This course focuses on developing the communication skills necessary for a successful career in the agricultural industry. Interpersonal as well as more broad communications (broadcasting, magazines, etc.) are a

part of the curriculum. Human relations, personal inventory, leadership development, careers and other experiences are included. Portions of the class will be dedicated to prepared public speaking, extemporaneous speaking, news writing, magazine writing, radio broadcasting, television broadcasting, advertising, public relations, product development, current issues in agriculture and the environment, and desktop publishing.



Representatives of agriculture need to plan, organize, execute, and evaluate effective presentations. By assisting students in developing and focusing on these skills, Agricultural Communications course can better prepare tomorrow's leaders for the ever-increasing challenges of agricultural literacy. (Photo courtesy of Bob Birkenholz and Jay Craven.)

Philosophy

Through developing and practicing basic oral, written, and interpersonal communication skills, students will be better prepared to pursue successful careers in the field of agriculture

Rationale

Students must have adequate people/communication skills to succeed in today's job market. This course seeks to provide a practical study in those skills.

Grade Level

10-12.

Teaching Techniques

Discussion, small group activities, hands-on laboratory, Project PALS, projects.

Evaluation

Written exams/quizzes, performance tests, projects.

Prerequisite

Ag Science.

Student Objectives

1. To demonstrate basic understanding of communication and its importance.
2. To demonstrate goal-setting and self-motivation skills.
3. To practice various interpersonal communication skills.
4. To demonstrate personal and public writing skills.
5. To demonstrate personal and public oral

(Continued on page 24)

Competency Profile

Agricultural Communications

Student: _____

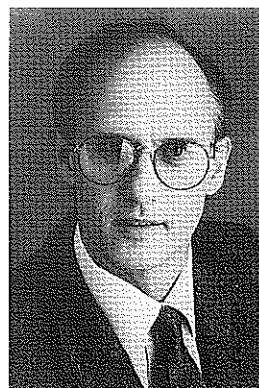
Grade: _____

Semester: _____

Competencies Mastered:

1. List different types of communications
2. Discuss the components of communication
3. Set personal goals
4. Define self-motivation
5. Demonstrate ability to utilize a day planner/calendar to be organized
6. Write a resume
7. Interview for a job
8. Conduct a job interview
9. Design a business card
10. Demonstrate the ability to write a personal letter
11. Write a news story
12. Deliver a prepared public speech
13. Deliver an extemporaneous public speech
14. Plan a sales display
15. Demonstrate the ability to deliver a radio broadcast
16. Demonstrate the ability to deliver a television broadcast
17. Plan, organize, and lead a meeting using correct parliamentary procedure
18. Plan, organize, and lead a meeting following an agenda
19. Demonstrate the ability to do market research for a sales presentation
20. Plan, organize, and deliver a sales presentation

Ag-Outside-The-Classroom: The Citizen's Agenda



BY: STUART NUNNERY

Mr. Nunnery is a communications consultant and the executive director of the Campaign for Food Literacy, a non-profit education advocacy organization in Philadelphia.

As an advocate for "food literacy," I am in agreement with agricultural educators that without a comprehensive plan to make more of our citizenry outside the classroom food and agriculturally literate, support for school-based changes may erode. Along with it may go public acceptance of food and agricultural policies and practices, and the products and services that emanate from them.

As with food literacy, then, the goal of agricultural literacy should be more than awareness building. It must shorten the psychological distance between the citizenry and the food systems. It should promote values and ethics, as well as knowledge and skills. More importantly, it must build a framework for understanding agriculture from a variety of perspectives and viewpoints. It must sensitize the generations to the living history of agriculture and its impact on the land, the environment, and its people. Agricultural literacy should promote trust and responsibility. And rather than create passive learners, it should inspire and empower independent thinking, a positive activism toward foods and agricultural issues, and support of education initiatives.

Before we design curricula and educational structures to support those goals, we need to make changes in how we currently communicate and educate outside of the classroom.

First, professionals in science, government, industry, and education must acknowledge the various "publics" representing a wide diversity in education, language, culture, needs and circumstances, concerns and interests, and abilities. Then they must customize initiatives to meet that diversity.

Second, we have to close the communications gap between professionals and the publics. Increasingly distant and disconnected from the food systems, many citizens are more confused, misinformed, negative or indifferent about food and agricultural issues than ever before. This atmosphere has bred mis-perceptions and distrust on both sides.

Professionals can help by increasing the opportunities citizens have to interact with them through face-to-face dialogues at on-site

meetings and at public education forums. They can better articulate complex information in a language the various publics can understand. They can be more honest about the limits, complexity and paradoxes of science and technology so citizens do not develop a false dependence on or an inordinate fear of them. They should consider that the values of fairness, choice, advised consent, and self-determination are as important to citizens as scientific, technical, economic, and policy considerations are to them (Lefferts, 1995).

Third, we have to increase and improve the flow of information by expanding the food and agricultural information network that serves the public. Included in that network are the schools, to be sure, but more importantly, the non-formal information sources that figure so prominently in public education.

This means more quality reporting from the press and media on the agriculture beat and food sectors link nutrition and cooking issues to agriculture. Expanding the application of distance education technology could put citizens in direct contact with food system professionals via tele-conferences, public forums, classes, workshops, lectures, debates—even town meetings. And if formatted creatively, these programs can provide compelling and entertaining programming on cable, public, and even commercial broadcast media.

In addition, we need more regular and consistent distribution and delivery of food and agriculture-related materials, programs, and services to a wider variety of sites.

Finally, we must promote lifelong learning about food and agriculture as part of our ongoing civics education. Then we must reinforce the community-based education architecture to deliver it. Engaging, hands-on, experiential education, and more "parallel classrooms" can facilitate that. With them, we can provide educational opportunities in homes, community centers, agricultural, environmental and horticultural centers, at retail food and farmers markets, on audio and video tapes, as well as on television and radio.

Collaborative public education projects could include urban-to-rural residential pro→

grams for children and adults, farm and processing facility field trips, agricultural camps, and increasing the number of living history sites, community gardens, and agricultural programs and exhibits at museums, libraries and aquariums.

If we can successfully rebuild trust and the architecture of communication and education outside the classroom, we can develop a citizens curriculum in agricultural studies—with a difference. Rather than developing agricultural scientists or economists, we'll create confident citizen activists and decision makers.

In my work I have seen demonstrated that many citizens are eager to learn about, and to have faith in, the food systems. We're beginning to understand the responsibility implicit in our choices and judgments. We want to learn how to respond appropriately to food and agricultural issues that affect the quality of life and health in our homes and communities.

We recognize too, that there are challenges to fostering a food and agriculturally literate citizenry. With more engagement between professionals and the public will come conflict and debate. Without it, however, we may never realize a more vital dynamic link between people and their food systems.

Who will supply the inspiration and motivation, the vision and resources that brings citizens to the community centers, the computer monitors, or the farmer's markets? In addition to initiatives like ours, government, industry, science, and education must provide leadership to make food and agricultural literacy nationwide health and education priorities. Until that commitment is supported by legislation and action, and reinforced through formal and informal education options for people of every age and circumstance, the distance between citizens and their food systems will continue to grow. It doesn't have to be that way.

"If you eat, you're involved in agriculture," says activist and author Francis Moore Lappe. That's what food and agricultural literacy must foster—a greater level of citizen involvement. For, as the National Research Council Board on Agriculture's 1988 report so deftly adds, "only well-informed and responsible citizens will be able to participate in establishing policies that will support health and a competitive agricultural industry here and abroad. Only they will understand that foods and fiber are part of a vast web of life that functions as an integrated whole."

What others have said about the campaign for food literacy and its director, Stuart Nunnery:

"If the term food education brings to mind

bombastic lectures on fat and cholesterol, pesticides and recommended daily requirements then Stu Nunnery is the man to see, and his hybrid blend of comedy, theater, lecture and education is the program to watch."

Journals of Washington, DC

"Stuart understands the needs and the means to make food information easily accessible to more people. His personal story, his passion and commitment to his work provide lessons for professionals such as ourselves whose job it is to communicate with citizens about food and food issues. I am especially impressed with Stuart's ability to bring diverse individuals and organizations with differing views together to address consumer and professional concerns relating to food and health issues."

Alexander Grant, Associate Commissioner

Office of Consumer Affairs

Food and Drug Administration

"Your presentations are among the highest rated our office has ever sponsored."

Alexander Grant, Associate Commissioner

Office of Consumer Affairs

Food and Drug Administration

"Stuart Nunnery as a person cares deeply about the need for the souls and minds as well as the bodies of people everywhere to be nourished by the food they eat. Stuart's passion for the very essence of food, a passion which pervades the CAMPAIGN, is what I believe makes it the ideal vehicle to launch a nationwide food education initiative."

Audrey Maretzki, Ph.D.

Professor of Food Science and Nutrition

Pennsylvania State University

"The Campaign for Food Literacy expresses views I share and have tried to make a part of child nutrition programs for the past 25 years."

Dorothy Caldwell, MS RD

President

American School Food Service Association

"...a wonderful presentation."

The School District of Philadelphia, PA

"I agree with your approach to culturally sensitive, community focused food systems education."

Director, Public Health Nutrition

University of Tennessee, Knoxville

"I found the CAMPAIGN FOR FOOD LITERACY's presentation to be a total success. To approach the serious and important topic of food education with energy, commitment and talent displayed by you and your associates,

(Continued on page 24)

Agricultural Education In Russia: Challenges For Teachers



BY: GALINA V.
PICHUGINA

Dr. Pichugina is the leading researcher in the department of vocational training in the Institution of General secondary education at the Russian Academy of Education, Moscow.

The state system of agricultural education in Russia consists of educational establishments of different types. Agricultural institutes are the establishments of higher education. Usually students start a 5 year course of higher education at the age of 17-18 after leaving secondary school. At the end of 5-year course they are awarded their first degree.

Leavers (graduates) from secondary schools can also enter agricultural colleges where they take a three year (after the 11th form) or four year (after the 9th form) course on agriculture.

Students can leave after the 9th form and enter vocational technical schools, where they are trained for agricultural jobs for 3 years. Vocational training for agricultural jobs is organized in basic rural schools.

Traditionally, rural schools were supported by the stated collective farms. Every boy got a tractor and car driver license after leaving the school and girls were trained as milkmaids. The collective farms of the region supplied schools with facilities and equipment for the agricultural practicum of students. The state system of rural economy was destroyed and the system of vocational training for rural students was destroyed too. Now we are making efforts to develop a new effective system of vocational training and initial agricultural education in rural schools as Russia needs skilled and learned food producers.

Now some rural schools try to organize vocational training of their students as private farmers. But the question arises—do rural schools have to train all their leavers for farming or not? We think they don't, because the future of farmers in Russia is not clear enough now. But rural schools have a target to train all their leavers as skilled and learned homesteaders. All students must get "an agricultural literacy" besides common literacy, science and humanities education. The students with an interest in agriculture have to get the opportunity to study more advanced vocational courses. And we must show all students that agriculture is a technical, progressive career field and to make them be interested in further agricultural education. The main idea of the sys-

tem of vocational training and initial agricultural education still needs to be worked out.

There are very different types of rural schools in Russia. The conditions of vocational training depend on environment, social and economic factors in the region, the availability of facilities and equipment for agricultural practicum, and motivation of students and their parents. That's why the different curricula and vocational courses have to be worked out. The program can be offered as three types of vocational courses on agriculture: introductory, basic and advanced. Usually a course lasts one, two or three years. First, we offer a compulsory introductory three-year course. Students start this course at the age of 11-12, when they are in the 5th form.

Students learn an introductory to soils and plant growing, the cultivation of vegetables and flowers, taking care of small farm animals. Theoretical subjects are offered in winter and in fall, and in spring students perform "practicum" on the plot of land which rural schools usually have. Some schools have hot houses too. Students having graduated from this program can produce the popular most kinds of vegetables crops in their home gardens and to take care of hens, rabbits, lambs, calves in their homesteads.

In the 8th form students can start basic courses in agriculture. The two-years basic courses are optional and deals with the principles of plant-growing or cattle-breeding, which are generally applicable, and with general aspects of production practice. And then these students can specialized in different branches of agriculture.

Some schools offer advanced courses in different subjects such as vegetable crops production, milk, poultry or swine production, bee-keeping, economy, and management of private farms. Additionally, boys usually take a course in tractor and car driving. These courses are optional and last one to two years. Those who pass final the examination are awarded certificates of initial agricultural education, which are officially recognized as qualifications for agricultural job.

It's known that educational motivation→

starts with the family and is further encouraged by the school system. Unfortunately the prestige of education and agricultural education, too, has fallen in families in Russia.

First, Russian farmers are faced with complicated problems. The most serious of them is a sharp shortage of financial and material resources. It's very difficult to receive land. That's why the number of private farms is decreasing now. The conditions of labor in agriculture are very hard, the wages tend to be low and the most part of parents object against the vocational training of their children in agricultural sphere and against the adding agricultural courses in the school's curricula.

That is why recent initiatives in vocational education in rural schools have focused on the integration of vocational and academic subject matter. The courses in science for secondary school in Russia are too academic and are not connected with day-to-day life of students and with their future job. Students are bored and disinterested in science. Now science teaching must be more authentic. The cross-disciplinary courses turn science courses into applied ones and show students the possibility of using the knowledge of science for solution of problems connected with agricultural work. Besides that the applied courses in biology and chemistry give the possibility to acquaint students with agriculture without including any vocational courses into curricula. And studying of the material relevant to agriculture at the science courses gives the possibility to revise the main ideas and theories of science in connection with their practical usage. So students can gain both scientific and agricultural knowledge. One of the important goals of the applied courses is to show students the creative nature of the agricultural work. Then they will be more interested in further agricultural education.

Let's consider the chemistry course and plant growth course. One of the most important aspects of plant-growing is managing soils and fertilizing. What information about that is relevant to chemistry? We included into the course of applied chemistry information about rapid chemical soil testing, controlling soil reaction, optimum pH range for vegetable crops, determining the need for lime, using commercial fertilizers, determining fertilizers analysis, formula and ratio, determining fertilizers requirements.

The other important aspect of plant growing relevant to chemistry is controlling insects and diseases. The new organic pesticides are by no means the complete and final answer to insect and diseases problems which arise in agriculture. However it's very important to know the physiological actions of these materials, restric-

tions and limitations for use in vegetable crops. That's why we included into applied chemistry course information on classifying pesticides, their chemical composition and applications, spray solution formula, safe handling.

The topics relevant to cattle-breeding can also be included. Its composition and classification of feeds, commercial minerals and vitamins, chemicals and spray solution formula for disinfecting.

It's not necessary to design the cross-disciplinary courses for practical connection between vocational and academic courses. The applied guide-line of chemistry teaching may be achieved by different ways. We offer the set of applied exercises for this purpose such as determination of lime and fertilizers requirements on the base of soil tests data and the set of applied laboratory practicums, for example, the determination of soil reaction or the preparation of spray solutions of pests for plant's treatment.

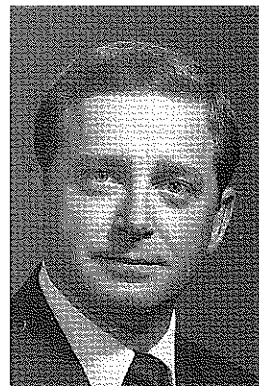
We have designed also some cross-disciplinary lessons. One of them is the lesson on the topic "Transformation of nitrogen compounds in soil and plants and producing ecologically pure vegetable crops". Students can revise properties of inorganic and organic compounds of nitrogen and at the same time learn the methods of soil enrichment without damaging human health.

Now we have some experience in this area. We began from the applied exercises, laboratory practicum and interdisciplinary lessons and then the cross-disciplinary course "Chemistry and agriculture" was designed. We offer this four-year course since 1992/93 school year at one of rural schools near Moscow (village Mishutino, Sergievo-Posadsky region). Students start this course when they are in the 8th form. The new course has concluded its successful first years. There are not any vocational courses in agriculture for senior students in this rural school, because the school has no facilities for agricultural practicum of students. Due to taking the applied chemistry course, the leavers from this school can use their knowledge of chemistry in their everyday life and in work in their homesteads. They are acquainted with safe handling and application of commercial fertilizers, pesticides, chemicals for disinfecting, and others. Now, many students have background in agriculture. Many students have become more interested in chemistry and agriculture. We can claim this because more of the students decided to choose the final examination in applied chemistry.

All new programs and courses must be verified in different schools. Now some rural

(Continued on page 22)

Agricultural Education In The United States: An Overview



By: WILLIAM G. CAMP

Dr. Camp is a professor of agricultural and extension education at Virginia Tech, Blacksburg.

Since 1965, researchers from the Agricultural Education Division of the American Vocational Association have conducted an annual National Survey of the Supply and Demand for Teachers of Agricultural Education in the United States. This is the fourth in a series of reports to the profession on the results of the annual supply and demand study. For more details about the background of this ongoing study, and on the sources of the data, see the first article in this series, in the May, 1995 issue of The Agricultural Education Magazine.

SOME FACTS FROM SEPTEMBER 1, 1993

Total number of agriculture teachers in US	10,118
New teachers needed	662
Number of newly qualified potential teachers	636
Estimated number of newly qualified teachers seeking teaching positions	497
Teachers needed but not available September 1, 1993	20
Teachers with emergency certificates	71
Types of teaching positions	
High school only	7,878
Combination high with middle/jr high school	1,125
Middle/junior high school only	316
Adult teacher only	188
Number of teachers with both in-school and adult or Young Farmer programs	2,395
Subjects taught	
Production Agriculture	1,245
Agriscience	1,335
Ornamental Horticulture only	979
Specialty programs, such as Natural Resources Management or Agricultural Mechanics	1,149
Combinations of agriculture programs	3,932
Combinations of agriculture and some other subject	198
Texas had the largest number of teachers	1,450
Alaska had the smallest number of teachers	7

ONGOING TEACHER SHORTAGES

The Agricultural Education classrooms in America are faced with a shortage of new teachers. An estimated 662 new agriculture teachers were needed in the nations schools in

fall of 1993. But, there were only about 497 new graduates looking for teaching positions. Almost one-hundred schools were unable to hire fully qualified teachers of Agricultural Education by the beginning of school in September, 1993.

Idaho Agriculture

(Continued from page 9)

sionally, exotic animals. Throughout the workshop, teachers sample agriculture products, with the first evening ending in a good old-fashioned barbecue. The second day, round table mini-sessions are scheduled with agriculturally-related activities. Some of those might include bread in the bag, a barn book activity, soil conservation service materials, beef council instructional materials, or an aviation packet. Before the teachers leave the workshop, they are guided in the planning of a unit they teach to the entire group, as well as designing a plan on how they intend to implement AITC into their classrooms. The workshops are action-packed and teachers take home a wealth of ideas and materials for their classrooms.

Level II. The content for the Level II workshops vary greatly due to the resources located at the campus where they are held. The Level II agenda includes approximately 30 clock hours over a four-day period and the participants can receive two University of Idaho credits. In addition to attendance at the workshop, participants are required to submit an agriculture unit of instruction developed at the grade level they teach. A short description of the content of a workshop taught at the University of Idaho follows:

Teachers get their hands dirty as they learn how to feed calves, milk cows, and plant flowers. They are stimulated to think about the issues in agriculture that are affecting society. Some of the issues presented are animal welfare, chemical usage, food safety and quality, and the use of natural resources. The teachers also make sausage and conduct experiments with a genetically-altered potato plants and the

(Continued on page 22)

Cultivating Ownership: Collaborative Curriculum Development in the "Live Free or Die" State



By: JANET ROSENQUIST

Ms. Rosenquist is program director and a horticulture instructor at the Winnisquam Agricultural Education Center in Tilton, NH.

Anyone can write curriculum. This is proven by the profusion of curriculum resources available to educators of all disciplines, and Agricultural Education is no exception. There are hundreds of curricula available in the form of textbooks, outlines, computer programs; you name it. Despite the abundant selection, it can be difficult to find a curriculum that suits the needs of a particular program or region.

Those familiar with New Hampshire know that we like to do things a little differently in many respects. One of these is that we are the only state in the country that has neither income tax nor sales tax. While this has its benefits, the practice is not supportive of education. One of the many effects of this lean financial contraction is that without state funds, the state has comparatively less to say about what is taught in the schools. This, in turn, allows local programs the freedom to adapt their curriculum to their particular situation.

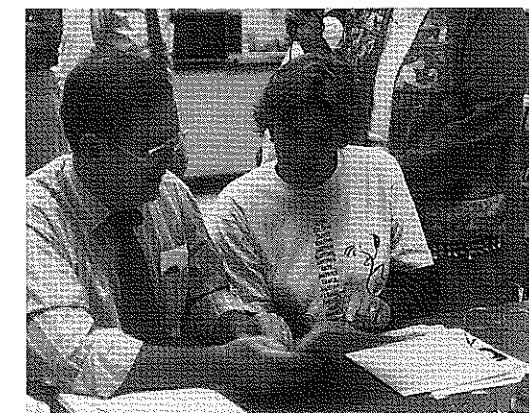
While this sounds like an asset, the differences this creates in subject matter, especially in elective areas, from school to school can be problematic. New Hampshire teachers of math and science have addressed this problem by developing curriculum frameworks. For Agricultural Education programs, this curricular inequality often means that students are on uneven footing in the workplace and in the college classroom. Some students may be well prepared while others are overwhelmed. When new teachers ask the question "what should I be teaching?" the response varies. Completion of a secondary agricultural education program had been devalued because of the wide variation in instruction between schools.

Therein lies the impetus for the horticultural curriculum project completed in New Hampshire in February of 1995. All agriculture teachers recognized these problems and agreed that we could use a standard core curriculum in each of the agricultural applications; animal science, horticulture, natural resources, and agricultural mechanics, as an instructional

foundation for every agricultural curriculum. Horticulture was chosen as the first to be developed because it contains the most programs. Despite the abundance of guides available from almost every state in the country, we could not find one that fit the horticultural emphasis found in New Hampshire.

It must be appreciated that for every horticulture teacher in the state, there is a horticulture curriculum. These people have developed their own instructional program, and have decided upon content, based on local resources, facilities, and inclination of the instructor. These various curricula represented a great deal of time and effort on the part of our teachers. This made even simple agreement on the need for a tailored Core Curriculum Guide for horticulture a challenge. The process of developing a guide that these teachers, as well as post-secondary teachers and horticulturists working in the industry, could endorse was even more challenging. The primary goal of the project was to develop a curriculum guide that horticulture teachers would actually use. This guide had to make instruction easier for horticulture teachers and not simply add to already full instructional agendas.

The key to ultimate usability of this guide by New Hampshire's horticulture teachers lay in consultation and collaboration. From the →



Horticulture teachers worked in teams to develop curriculum content appropriate to New Hampshire programs. (Photo courtesy of Janet Rosenquist.)

very first, it was appreciated that New Hampshire horticulture teachers needed a sense of ownership in this project in order for it to be successful. An open avenue for input was created. It was realized that it would be difficult (impossible?) to actually get all teachers to contribute equally. The approach taken must allow teachers not only the opportunity to contribute, but also to be consulted and communicated with at each stage of the process. This became an ongoing reminder of the project's progress, and of their inclusion in it. This strategy introduces teachers to the document so that when completed, it is familiar to them and therefore more user friendly.

The first step in the process was to find out just what it was that New Hampshire Horticulture teachers wanted. In order to do this, all horticulture teachers were surveyed to find out what they needed and expected from a curriculum guide. As previously mentioned, there are many curriculum guides already available for horticulture. However, none of the authors of these guides ever consulted with New Hampshire teachers about what they needed, and as a result, it would be surprising if one had satisfied everyone.

The response to this survey was that most felt very strongly that the guide needed to do more than simply tell us what we should be teaching, but it also needed to help us with how we might teach it. Basically, our teachers felt that it was easy to pick up another curriculum guide or text book and find large amounts of information that we should be teaching. What was missing was creative suggestions about how these concepts might be delivered. In this instance, we took advantage of the great diversity among programs and solicited from teachers the activities they had developed, or stumbled upon, over the years in order to better teach a concept. These activities were compiled and offered in the guide for each unit.

The other component incorporated into our guide as a result of this initial survey was a list of resources. This needed to be more than just what resources were available; you can spend a lot of time and money before you realize that a particular text or reference is of little use to your program. Our teachers wanted to know what other New Hampshire teachers had tried and likes, and where they could get it. This list of resources goes beyond books to also include computer applications, articles from periodicals, state publications, and suggestions for guest speakers for various topics.

With the survey completed, the first sketch of what components must be included in order to please our consumers was developed. The next

step was to get a consensus from horticulture teachers as to what subjects should actually be included in a document that would be titled "New Hampshire Horticultural Technology - Core Curriculum Guide".

Consensus is not always an easy thing to come by in the "Live Free or Die" state. With this in mind, an entire day was set aside simply to decide what units should be included in the guide. The invited to this curriculum workshop were not just horticulture teachers, but anyone with an interest in the development of this curriculum guide. This day started by listing all the horticultural applications found in our state's industry, landscaping, nursery management, small fruits, turf, etc. The list was discussed to identify the core subjects that each of these applications had in common. That is, as a teacher starts teaching a student about horticulture, what do they need to know, regardless of what application they ultimately choose? The end product of the morning was the following list of eight unit titles:

- Soil Science and Plant Media
- Plant Anatomy, Physiology, and Requirements for Growth
- Basic Pest Management
- Propagation
- Basic Horticultural Equipment and Safety
- Horticultural Business Management
- Careers: Choosing, Getting, and Keeping a Job
- Leadership and Citizenship

The significance of this list was the total agreement among participants that these units were core to what horticultural education was about in New Hampshire.

Although there was consensus on unit titles, it was necessary to define each of these units through enabling objectives. The title "Horticultural Business Management", for example, could easily mean five things to five different people. It was essential that we communicate what each of us felt a student should be able to do after completing that unit. It was important that all of the contributors remember that we were working toward building an instructional foundations, therefore objectives all needed to be in the "must know" category, and not just "nice to know". It took a great deal of discussion to reach agreement on a concise list of objectives for each unit, but a draft of eight lists was completed during the workshop.

A common meeting time for agriculture teachers in a state that is made up of at least 50% one-person departments is hard to come by. We knew that after this "kick-off" day much of→

the work would have to be done independently and shared with everyone at each turn. Following the development of this core unit list with enabling objectives, a mailing list went out to all horticulture teachers (including those not in attendance) asking them to review the "draft" list and respond with any additional suggestions or changes they may have. They were given a deadline for responses after which we would assume that everyone approved the list and so its "draft" status would be dropped.

The next step was to assign one of these units to each of eight different horticulture teachers who had agreed to be "team leaders". It was the responsibility of these leaders to work with one or two other teachers to draft an outline of content for their unit. These outlines were in turn compiled and sent out to all teachers for their comments, suggestions, additions, corrections, etc. Again, a deadline beyond which no changes were needed was assumed. When this deadline was reached, the outlines were edited as suggested and shared once more for final approval. This part of the process was the most difficult. Each teacher has their own program. Several revisions were needed before all agreed upon a basic outline of content.

Because the curriculum had to meet the needs not only of horticulture teachers, but also horticultural employers and post-secondary instructors, it was necessary to solicit their input as well. The content outlines were distributed to a variety of horticultural business people and to teachers in the state's two-year colleges. This proved a valuable step not just in the feedback we received, but also as a means of promoting awareness about instructional content in our horticulture programs.

At this point, the suggested activities were ready to be assembled. A request for descriptions of activities in each of these units was sent to all teachers. This was followed by a sharing of favorite activities at an agriculture teacher's meeting. This was very effective because it gave teachers

the opportunity to demonstrate their creativity. This process also initiated new ideas about other activities that might better teach certain concepts. A brief description of all activities was added to each content outline. These descriptions were deliberately lacking in detail and simply provided a framework so that teachers could still exercise the freedom to which they were accustomed in adapting these activities to

their situations.

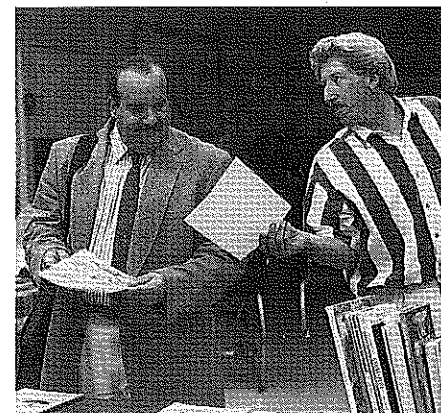
The final component of the guide was the resource section. The suggestions for available resources were comprehensive beyond just books and other written material; they included human resources as well. In addition to soliciting all teachers to list their favorite resources, they were also invited to bring some examples to an agriculture teachers meeting to provide others with the opportunity to look through the materials.

The New Hampshire Horticulture Technology Core Curriculum Guide has been published and was disseminated in February, 1995 to all who contributed, but the work continues. In order to persist in the efforts toward more continuity in horticultural instruction, teachers must be encouraged to use this document that is the product of expertise, efforts and insights of over 30 people with an interest in horticultural education. Those who have invested in this Guide must continue this commitment to consistent quality in horticultural instruction by working to keep the information it contains current and pertinent. With this ongoing commitment, the Guide will remain useful to New Hampshire horticulture teachers for many years.

This Guide was just the beginning of a process that will allow the development of similar documents for the other agricultural disciplines in New Hampshire. Some of the details of the process will change with the next undertaking, but one thing that will not (and can not) is the approach that gives ownership of the work to those for whom its use is intended. Based on our experience, collaboration and consensus are the key to development of a curriculum guide that will do more than just sit on the shelf.

References

- Bortz, R. F. (1981). *Handbook for Developing Occupational Curricula*. Boston: Allyn and Bacon, Inc.
- Connecticut State Department of Education. (1988). *Revising and Updating the Plant Science Components of the Connecticut Vocational Agriculture Curriculum*. University of Connecticut Department of Educational Leadership: Storrs, CT.
- Hendrick, Clyde. (1987). *Group Processes*. SAGE Publications: Newbury Park.
- State of New Hampshire Department of Education. (1992). *Technology Education Curriculum Guide*. Bureau of Vocational-Technical Education: Concord, NH.



Teachers consulted many curricular resources throughout the project. From them, ideas were generated for format and content that were adapted to meet the needs of the state's programs. (Photo courtesy of Janet Rosenquist.)

Introduction to Horticulture: Science and Technology

Schroeder, C.B., Seagle, E.D., Felton, L.M., Ruter, J.M., Kelly, W.T., and Krewer, G. (1995). Interstate Publishers, Inc.: Danville, IL.



REVIEWED BY: ANN MARIE VANDERZANDEN

Dr. VanDerZanden is an assistant professor of horticulture at Illinois State University, Normal.

The horticulture field continues to grow, and as it grows, there is an increasing need for well-trained horticulture professionals. It is important for students entering the profession to be familiar with basic plant processes and to have an understanding of the diversity within the industry. To this end, *Introduction to Horticulture: Science and Technology* would be a useful introductory text in a secondary horticulture curriculum. The text offers an extensive overview of the industry, and introduces students to important terminology. However, there is limited attention given to basic plant processes.

The text is divided into nine parts, each covering a major component of the horticulture industry. These components include: greenhouse management and production; nursery management and production; floral products; landscaping; turfgrass; food crops; and equipment and technology. There are also sections on the science of horticulture and an overview of the industry. The individual chapters have clearly-defined objectives, lists of new terminology, and questions/problems for discussion that result in a comprehensive review of the

Agricultural Literacy

(Continued from page 5)

tions and conclusions. Students utilized multimedia authoring software to fashion professional-looking presentations. After each team had completed the development of their multimedia presentation, teams offered their work to the entire class, the instructional team, administrators, school board members, and parents who were able to attend. As each group offered their presentation, questions and differing opinions emerged from various students. What followed were exchanges between students which challenged teams and individuals to evaluate and perhaps defend their interpretation of academic content. Through the carefully orchestrated activities and experiences, students had engaged in higher order thinking skill tasks which provided unique intellectual growth experiences, had become familiar with the historic role of agriculture in the development of human cultures, and had developed a impressive level of understanding about an his-

chapter. In addition, the "applying the concepts" section gives relevant activities for the students to complete that utilize critical thinking and self-directed learning skills. These activities will help with students increase their understanding of the subject matter.

Although the text gives a comprehensive overview of horticulture, I find it lacking in basic plant physiology. The chapter entitled "Plant Structures and Functions" briefly covers some of these topics, but does not elaborate on the relationship between plant physiology, growth, and development. A greater understanding of plant growth and development would be beneficial to students as they advance to the subsequent chapters related to propagation, greenhouse and nursery production, and interiorscaping.

This text is well-suited for a high school introductory horticulture class. The thorough overview of the industry and the "applying the concepts" activities associated with each chapter also make it a good resource book for horticulture educators from middle school through college. ■

torically significant agrarian culture.

While the instructional team was quite pleased with the results of the Native American cultures unit, what followed had as much impact on students and was completely unexpected. As students returned home following the completion of the unit, they arrived with a level of enthusiasm that sparked extended conversations between students and parents. As the next school day began the stage was set for a very serious request from students for a school sponsored trip to Mesa Verde National Park. Equally surprising was the degree of support echoed by parents. It was clear that something quite unusual had occurred as a result of this unit.

As Ms. May began serious conversations with the students about the complicated nature of such a trip she told the students and those parents who had contacted her that there would →

need to be more than just verbal support from parents. The response from the parents was overwhelming. Approximately 20 parents steered a committee which was responsible for coordinating transportation, lodging, financial statements, and developing an itinerary. These parents spent hours in weekly meetings, making telephone calls, and seeking financial assistance from the community. The students planned and organized fund raising activities to contribute toward financial assistance.

The community was supportive of the students' interest as well. Local businesses donated money to help sponsor the trip. Businesses and several residents donated their time and items for fund raising activities and snacks for the trip. The local newspaper featured news about the project and trip. Community support, generated by highly motivated students and parents, became the critical element in the development of this enhancement activity. Once the decision was made to move forward with plans for the trip, Ms. May reestablished contact with Ranger Hutchinson who offered recommendations about lodging, scheduling of the trip, and the on-site itinerary. With the extensive planning which went into the trip and the involvement of parents and the greater community, it was no surprise when the trip was judged successful by all involved.

While the elements of this article have focused on activities which occurred in one school, there are several significant points which have relevance to educational offerings regardless of location and grade level. Among these points are the following:

- Agricultural literacy is not a new concept. The development of a fundamental understanding of food production had been a feature of informal and formal education efforts until the early years of the twentieth century. A review of informal and formal educational practices from earlier times should provide some significant concepts to consider as we continue the agricultural literacy agenda.
- Agriculture offers substantial opportunities for enhancing or expanding educational efforts in all academic disciplines. The integration of agricultural issues and concepts was a fundamental design feature of education until more recent times. Through such integrated efforts, students became familiar with agricultural concepts as well as the role agriculture played in the greater community. In today's schools, curricula are continuing to experience strain as emerging issues are inserted into the classroom experience. Therefore, curriculum integration approaches seem to offer substantial opportunities to enhance learning without increasing the curricular

load.

- Because of the multifaceted nature of agriculture, groups and individuals who wish to advance the agricultural literacy agenda should join forces with those who wish to enhance learning experiences through cross curricular activities. Agriculture is a significant part of history and other social sciences, biological and physical sciences, mathematics, language arts, music and visual and performing arts.
- Individuals and groups who wish to advance agricultural literacy should explore opportunities to form partnerships with such organizations as The National Park Service and the extensive array of agricultural commodity organizations. Such partnerships should examine a variety of technology related opportunities, such as instructional CDs and World Wide Web documents, as well as traditional printed materials.
- Classroom teachers and curriculum designers can benefit from an understanding of the educational mission and professional practices of other organizations and agencies such as the National Park Service. The Park Service defines their educational mission as interpretation, i.e., "a communication process designed to reveal meanings and relationships ..." (Veverka, 1994, p. 19). Learning activities which involve students developing and sharing knowledge of, feeling for, and genuine insight into a concept, an event, a culture, or an industry such as agriculture, offer opportunities for students to move beyond traditional learning experiences and develop insight and motivation similar to those experienced by Ms. May's students.

References

- Cochrane, W.W. (1979). *The development of American agriculture, a historical analysis*. Minneapolis, Minnesota: University of Minnesota Press.
- Foght, H.W. (1911). *The American rural school: its characteristics, its future and its problems*. New York: The MacMillan Company.
- Philadelphia Society for Promoting Agriculture (1935). "Celebration of the one hundred fiftieth anniversary", A commemorative publication of the Society.
- Stimson, R.W. and Lathrop, F.W. (1942). *History of agricultural education of less than college grade in the United States*. Washington, D.C.: United States Office of Education.
- United States Department of Agriculture (1895). *Yearbook of the United States Department of Agriculture - 1894*. Washington: Government Printing Office.
- Veverka, J.A. (1994). *Interpretive Master Planning*. Helena, Montana: Falcon Press.
- Woodward, C. R. (1939). "Memoirs of the Philadelphia Society for Promoting Agriculture", *Agricultural History*, v.13, 157-160. ■

Agricultural Ed In Russia

(Continued from page 15)

schools in different regions of Russia start offering this course. We consider these schools experimental ones.

One of the most famous experimental schools specializing in training for agriculture is the Boarding Agroschool-orphanage in Syktyvkar, the Komi Republic. The Syktyvkar Boarding school-orphanage existed for more than thirty years. From 1973 Aleksandr Katolikov was the head. Now he is one of the most famous Russian educators, the Corresponding member of the Russian Academy of Education. He has the honorary title of People's Teacher of Russia. In 1984, he was awarded the international medal of Lev Tolstoy for great contributions to the cause of children's protection. In 1994, the Agroschool received the Grant of the First Degree from J. Soros Foundation for development problems in vocational training and educational innovations.

Now, 240 children from 3 to 18 live and study in this educational institution. They are the abandoned children and children, removed from their abusive homes by court-sanctioned police. From early age they are engaged in agricultural work at the children training farm "Mejadorskoe" (Mejador is the village near Syktyvkar). This training farm had been set up 30 years ago and now became the great modern farm with different enterprises. We have more than 200 hectares of land, 2 hectares of hot-houses, great cattle-breeding and poultry farms, 12 tractors and other machines. We consider the vocational training for agricultural jobs as the effective way of social security of orphans and abandoned children.

In 1993, the Syktyvkar Boarding school-orphanage had been transformed into the Boarding Agroschool-orphanage. It was the first such institution in Russia to be given the status of Agroschool.

It should be emphasized that Agroschool is not only an educational institution, but research one too. We are researching into the problems of methods of vocational training for agricultural job in primary, middle and secondary schools, of engaging students into agriscience activity, teaching of cross-disciplinary courses and others. One of the important problems is the development of child's personality during vocational training them for agricultural jobs.

The research into these problems is carried out together with the Institute of General Secondary Education, of Russian Academy of Education. The Agroschool is the experimental school of this research institution. The

researchers of the IGSE participate in working out the new programs and courses of vocational training, and develop more effective methods of teaching and training. Their materials are verified by teachers at the Agroschool.

We look forward to continuing and developing our research. Now we are working out different learning materials and teaching packages for vocational training and more effective methods of teaching and training. We also are interested in methods of engaging students of middle and primary school into agriscience research and are working out these methods.

List of References

- Clayton, T., Clayton, P., and Newman, M. (1993). Agriculture and science teachers: new levels of integration and cooperation. *The Agricultural Education Magazine*, 66 (4), 7-8.
- Jenkins, E.W. (1994). Public understanding of science and science education for action. *Journal of Curriculum Studies*, 26, 601-611.
- Trexler C.J. (1994). Building capacity for an innovative elementary agriscience curriculum. *The Agricultural Education Magazine*, 67 (1), 16-19.

Idaho Agricultural

(Continued from page 16)

Colorado potato beetle. They learn firsthand some interesting ways to explore chemistry with agricultural products available in the grocery store. One exciting activity finds the teachers putting on a plastic arm glove and reaching into a fistulated cows rumen to examine the contents of the digestive system. They conduct experiments on food samples and learn the reasons why the handling and storing of food is so important. They learn about fast plants, bottle biology, and transplant materials they take home to their classrooms. The curriculum guide is further explored and all the teachers must develop an instructional unit to earn two University of Idaho credits.

Results of AITC Through the Eyes of a Secondary Agriculture Instructor

A cooperative project by the New Plymouth, Idaho, agriculture education sophomore level Applied Crop Management class and the FFA Chapter has resulted in a successful experience. The first phase of the project included an introduction to a wide variety of commodity crops and livestock grown in Payette County, Idaho. In addition, students were exposed to the allied agriculture industries. To conclude the unit, students learned the function and purposes of commodity commissions such as the Idaho Potato Commission and the Idaho Beef Council.

In the second phase of the project, the students were grouped to research current information about one crop or animal. By drafting a letter requesting information from their selected →

commodity commission, the students gathered current information on the crop in order to prepare a presentation and to develop business writing skills. The students are asked several questions, of which four examples follow: 1) Where and how is the crop or animal marketed? 2) How does the crop or animal impact the local workforce? 3) What types of industries support the crop or animal in the state? 4) What were the cash receipts for the crop or animal this past year?

In the third phase of the project, the student groups synthesized the information they had received from the commissions and the information presented to them in class. The groups were assigned the task of preparing a presentation for three fourth grade classes in the New Plymouth elementary schools. The groups worked on producing an informative and fun presentation on the crop or animal they had studied.

After the presentations were prepared, the groups practiced them in front of their peers in order to receive constructive suggestions for improvement. The students were guided in using hands-on activities and props that would interest fourth graders. Some good ideas were gleaned from the Idaho AITC curriculum guide. In one of the presentations the students asked fourth grader volunteers to measure how much corn it takes to fill a bushel. The fourth graders used a quart container to measure 32 quarts of corn into a larger container. This visual activity helped give the class some perspective of the unit of measurement in which corn and small grains are marketed.

Each group handed out a small sample of the commodity they were discussing. For example, the grain group gave each of the fourth graders a small bag which contained wheat and corn kernels and a bag with corn chips and wheat crackers. The apple group distributed apple slices dipped in caramel. The dairy group handed out two different types of cheese. The beef group discussed by-products and distributed marshmallows, Jell-O jigglers, and candies which are made from the by-products of beef animals. The sheep group gave each a small bag of wool. The New Plymouth FFA chapter purchased all the necessary items for the presentations and each group of agricultural science students dressed in their FFA jackets as a promotional touch.

The final phase of the project was evaluation. Each group evaluated the other groups presentations and discussed how the project could be improved for next year. Each fourth grade

teacher was asked to evaluate the project. The wide variety of skills the students gained, the publicity for the New Plymouth Agriculture Department and FFA, the confidence the students gained, as well as the positive relationships built with future agriculture students and FFA members, were all positive outcomes.

Several individuals commented on the project. The superintendent of schools, Ryan Kerby, was invited to observe the project and he stated, "The project was good for both age levels. The sophomores had to learn the material really well before they could teach it to others and they also had an excellent opportunity to practice their public speaking skills."

A fourth grader, Casey Barker, said, "I liked learning about the dairy cows the best. It was fun seeing the different cartons that held the dairy products." Clint Davison, a sophomore student involved with the grain group said, "Being able to actually show the fourth graders how much corn makes up a bushel was really fun. The kids had a great time with the activity."

Kevin Barker, agriculture instructor at New Plymouth, commented, "The project gave us a chance to promote the Agriculture Department and the FFA chapter, while giving the students an interesting way to learn many new writing and speaking skills in addition to the information they learned about the crops and livestock in Payette County. It was a great project and I am eager to do it again next year."

Summary

The Agriculture in the Classroom in Idaho is very busy; however, it's only scratching the surface on what can be done to inform Idaho citizens about how their food and fiber are produced. It is fair to say that the success of the AITC program in Idaho is a result of many dedicated individuals who have given of their time and expertise. The AITC Curriculum guide, the successful Level I and Level II AITC workshops, and the collaboration with secondary agriculture programs working with elementary students will all contribute to the success of the AITC program in Idaho. There is plenty of room and the program needs additional teachers to get involved in teaching future leaders about the importance of agriculture. ■

Agricultural Communication

(Continued from page 11)

communication skills.

6. To demonstrate presentation skills.

Topic Outline

- I. Overview of the world of communications
Summary of types of communications
- II. What is communication?
 - A. Source
 - B. Message
 - C. Channel
 - D. Receiver
 - E. Response
- III. Self/Personal
 - A. Goals
 - B. Motivation
 - C. Organization/Time Management
 - 1. Day Planners
 - 2. Calendars
 - D. Marketing Yourself
 - 1. Cover Letters
 - 2. Resumes
 - 3. Business Cards, etc.
- IV. Interpersonal/Conversational
 - A. Human Relations
 - B. Role Modeling (Project PALS)
- V. Written Communication
 - A. Personal
 - 1. Notes/Shorthand/Outlines
 - 2. Letters
 - B. Public
 - 1. News
 - a. Inverted pyramid
 - b. Press releases
 - c. News stories
 - 2. Magazines
 - a. Stories and articles
- VI. Spoken Communication
 - A. Personal
 - 1. Quick review of interpersonal/human relations
 - B. Public
 - 1. Speeches
 - a. Prepared
 - informative
 - persuasive
 - b. Extemporaneous/Impromptu
 - c. Organization/Planning/Preparation
 - C. Speech contests
- VII. Displays
- VIII. Broadcasting
 - A. Scripts
 - B. TV
 - C. Radio
- IX. Presentations
 - A. Group meetings
 - 1. Agendas
 - 2. Parliamentary procedure

B. Sales

I. Ag Sales Contest

* Sections on areas such as photography, debate, and desktop publishing may be added depending on instructor's knowledge. ■

Ag-Outside-The-Classroom

(Continued from page 13)

assures that many more Americans will remember important messages about foods than if exposed to a standard lecture with slides. Your format allowed a free, honest and enjoyable expression of the respective messages of all your participants. Your obvious commitment to food literacy is a credit to you and a great opportunity for consumers to learn about the nutritional, social, cultural and political aspects of foods and the food communities."

M. Leonard Genova

Office of Public Affairs

Food and Drug Administration

"Your energy, creativity and experience was evident, and gave our participants a new-found appreciation of the link between diet and health."

First National Conference on Older Women

Elder Care Institute

Washington DC

"I believe you are "right on" with what you are doing. You're dealing with many of the same issues I have felt strongly about since I began my work in the nutrition field."

Julie Caton, Food Program Specialist

The State of New Mexico

"Your knowledge of hunger issues and your production and communication skills made you uniquely qualified to help us refine our message to the public and spread awareness of our efforts. Your contributions will have a positive, immediate and continuing effect on our organization."

Scott Schaffer, President

PHILABUNDANCE

"Your workshop had a tremendous impact on our teachers, and the faculty is still buzzing about it."

Methacton School District, PA

"Your Campaign has captured our attention because of your innovative ideas for nutrition education."

Dian Gans, Ph.D

Assistant Professor

University of Hawaii, Manoa ■