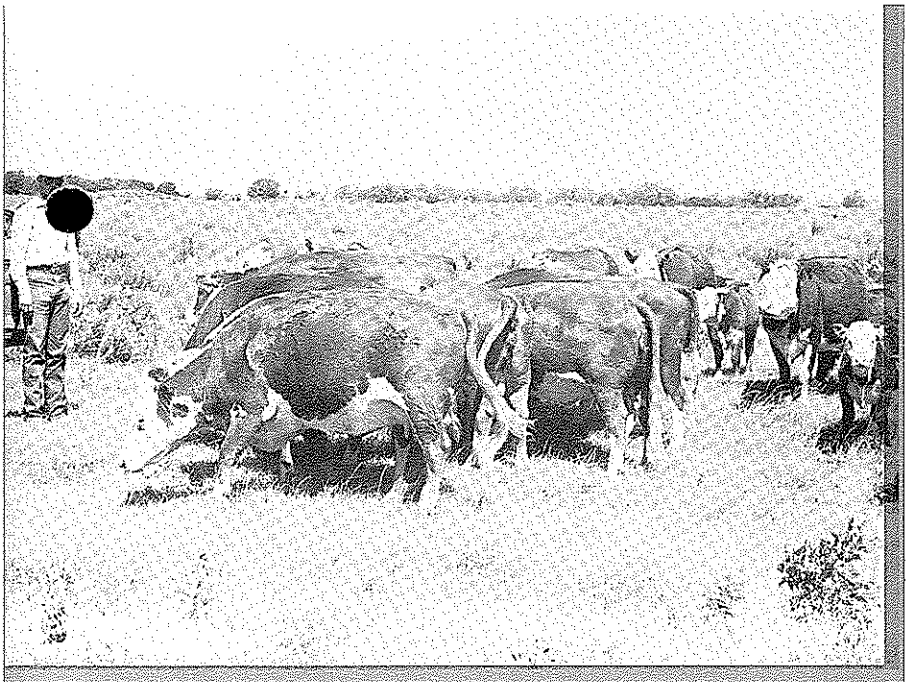

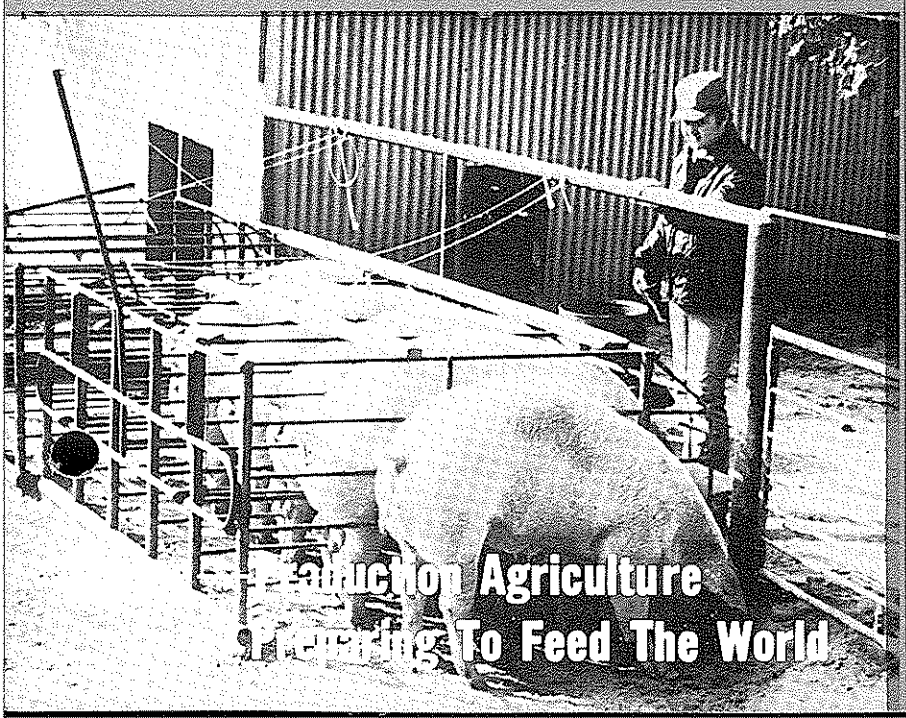

Production Agriculture
Preparing To Feed The World

AGRICULTURAL EDUCATION

Volume 49 Number 7

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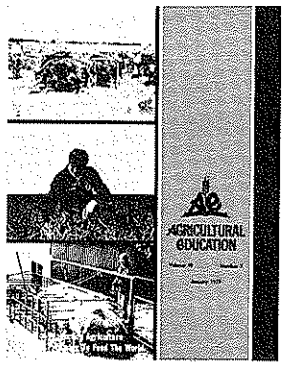

The cover photographs are typical of production agriculture, not only in Oklahoma but in much of the nation. The top photo is Jim London, a Hereford breeder who runs cattle on 9,000 acres in northwest Oklahoma. He received the American Farmer Degree at the 1975 FFA convention. Center is Wade Christensen, Star Agribusinessman of the Western Region in 1976, who also finds time to farm 686 acres of wheat and other crops. Bottom is Steve Meyer, recognized Chester White breeder, who was Western Region swine production winner in 1976. (Photos by Paul W. Newlin.)

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GUEST EDITORIAL

GUEST EDITORIAL

John W. Oren, Jr.

IS OUR LIFE LINE FRAYING?

John W. Oren, Jr.
Professor and Head
Agricultural and Extension Education
Mississippi State University

They have forgotten that production agriculture is our nation's "lifeline," and they can't afford to let it "fray."

Unfortunately it seems to be a part of human nature that people take for granted those things that should be most obvious to them. Despite the evidences of food shortages in many areas of the world, the people of our country have usually taken our food supply for granted. They have forgotten that production agriculture is our nation's "lifeline," and they can't afford to let it "fray."

The people of our nation are concerned, upset, and worried about the energy crisis, yet very few of them have given much thought to what would happen if there were to be a food crisis.

Charles Kettering (the famous inventor) is credited with having said that he was primarily interested in the future because that is where he would spend the rest of his life. Keeping this in mind, let us look into our "hazy crystal ball" and focus on a few of the challenges and opportunities that are awaiting us during the next 25 years.

Additional Food Needs

During the next 25 years we are going to need fantastically greater amounts of food produced on our farms, primarily because we are going to be feeding approximately 280 million people here in the United States. There are many people who claim that production agriculture will not be able to produce the food needed for our own survival, let alone assist in supplying world food needs by the beginning of the 21st Century. It is for this reason that I became interested and involved with many of my colleagues in looking at the world food situation in an attempt to determine what the possibilities are for meeting the food production needs of this country. We concluded that the world's land and water resources will support an abundance of food supply for two to three times as many people as we have now on the earth. We further concluded that the agricultural industry in the United States can provide abundantly for twice as many people as now live in the United States, and we can still have huge supplies of food, feed grains, and oil seeds available for export.

However, meeting future needs for food and fiber will not be, by any means an easy task and certainly not something that can be left to the whims of chance. For example, by the turn of the Century, those who are now our agricultural students must produce 74 percent more carcass beef, 53 percent more pork, 9 percent more lamb meat, and 20 percent more milk if consumption continues at present levels. We will also need more than twice as much chicken, twice as much turkey, and 21 percent more eggs. And our students of agriculture will need to produce 56 percent more fruit, 30 percent more vegetables (other than potatoes), 40 percent more potatoes, and 27 percent more cereal products for human consumption by the Year 2000.

We as agricultural educators must do everything in our power to refute the totally damaging statements being bandied about, such as "agricultural education and agriculture are declining and weakening." Before we let people "buy" that concept, and all of its implication, let's pause and cause them to look at the facts.

Presently, Americans spend only 17 percent of their take-home pay for food, the lowest by this measure in the world. Secondly, the American farmer is now feeding himself and more than 50 other Americans. He has really excelled in terms of growth and productivity. From 1965 to 1975, his output per man hour on farms increased by a staggering *65.2 percent;* by comparison factory output increased by only *14.6 percent!* This increased productivity required extensive capital outlays which were necessary to reduce labor while facilitating more intensive and extensive farming operations. In 1975, gross income for all farmers was 99.2 billion dollars—greater than any other business. Total net farm income in 1975 was 23.7 billion dollars.

Futuristic Needs in Agricultural Education

Meeting these food production requirements can be done if we as agricultural educators and researchers enhance and support, through our teaching and research, the maintenance of a strong and viable free enterprise

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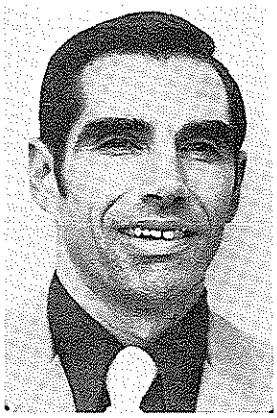
system that continues to provide *incentive* for our agricultural industry to produce and expand its businesses. We also must assume a leadership role in agricultural education and research that causes society to provide an increasingly higher level of *funding* for agricultural education, research and development. If society turns its back on this challenge, we could be in deep trouble by the end of this century. The final vital ingredient with which we must concern ourselves is one of a continuation of *responsible* and *responsive government* at all levels—local, state, and national. We must make our students and colleagues aware of and concerned about these needs.

Everyone in agricultural education has a shared responsibility for doing all that is required to meet the food needs of the many millions of people who will be living in the United States in the future. We must be futuristic in our thinking with regard to the development of responsible and relevant educational programs and related research and developmental activities.

We need to ask ourselves this question: "Is agricultural education providing opportunities for students to gain high levels of specialization they will need in order to succeed?" We must, in current agricultural education programs, provide excellent in-depth learning experiences for students. The day is past when vocational agriculture can be "good for everyone." Our students *must* be selected on the bases of *need, interest,* and *opportunity.* If we have a production agriculture program, the students enrolled should be preparing for a career in production agriculture. In this manner, our programs can be geared to provide actual learning experiences needed to develop competent individuals in agricultural production. Each of these programs should include organized classrooms and laboratory experiences, FFA experiences, and supervised occupational experiences. No student should complete our programs without having had each of these important elements, especially if we desire to continue to have an abundant supply of food.

We must cause people to focus on growth patterns in agriculture, agricultural education, and research. If we do this, they will find out that *there is no decline* in agriculture. The facts of the matter are simply that agriculture is expanding rapidly, and in so doing, will provide many thousands of new and vital jobs for our students; and in so doing, can develop a more secure "lifeline" for this country. We can keep the "lifeline" from fraying! ◆◆◆



FROM YOUR EDITOR

James P. Key

PRODUCTION AGRICULTURE

The basic need for vocational agriculture which gave birth to the Smith-Hughes Act back in 1917 still exists today—to an even greater extent! Some of you may say, "That cannot be! I cannot find enough students who can go back into production agriculture to teach a production agriculture class!" *This may be true, and it may not be.*

You probably know your community and its present needs in production agriculture better than aynone else. But, are you sure you have an accurate picture of it as it fits into the over all situation? Are you aware of the increased production needed to feed Americans as well as help feed the world? Are you aware of the increased average age of farmers and ranchers across the country which is going to open up more opportunities in production agriculture in the future? Are you aware of the need for more knowledge of production agriculture by more and more people as less and less of our population grows up on a farm or ranch?

Perhaps we are creating a *self-fulfilling prophecy* when we say there is not a need to teach production agriculture. I came from the East Coast to Oklahoma a few years ago and was impressed with the strong production agriculture programs I found. I was also impressed with the stress placed on the importance of production agriculture by the teachers, supervisors and teacher educators. They recognized the growing agri-business industry and the great need for training in the many emerged and emerging occupations, but they also recognized the need for training for the production occupations which support this growing industry.

Perhaps in some parts of the country we have recognized the need for training for agri-business occupations to the *exclusion* of production agriculture. Maybe it's a little like building a house on sand. Without the solid foundation of production agriculture, our house of agri-business might begin to fall. Perhaps we need to *re-emphasize* the production agriculture of our vocational agriculture programs and make sure the foundation of our programs remains secure.

As I take this position as editor of THE AGRICULTURAL EDUCATION MAGAZINE, I do so with mixed emotions.

First, I look forward to the *opportunity* to help, in some small way, maintain and improve the excellence of the programs of vocational agriculture for the hundreds of thousands of students here in the United States, which we teachers, supervisors and teacher educators have so excellently developed to this point. It is an outstanding opportunity for me to be able to work more closely with each of you to accomplish one of the most important tasks in the world—that of educating the youth of our nation in the fundamentals of agriculture.

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PREPARING TOO FEW AGRARIAN HUNGER FIGHTERS

Frank M. Van Apeldoorn
Vocational Agriculture Teacher
Albion Central School
Albion, N.Y.

Frank M. Apeldoorn

I'm scared, yet hopeful. As a teacher of Agricultural Production and Management in a rural high school I am continually awed by the technical and managerial skills needed by today's modern farmer. To say that there is no such thing as a "Dumb Farmer" is such a gross understatement. Farming today is true craftsmanship at work, it's an enormously complex profession filled with a galaxy of mind-boggling problems.

I find in my classroom, which I feel is typical, too few students that possess the ability or desire, let alone the means, to handle today's progressive farming. So, what about tomorrow? I'm afraid that unless my classes aren't typical, or some changes come about in the caliber of high school students taking Vocational Agriculture we will find far too few hunger fighters in the years ahead. I am mighty thankful that I have a few potential farm candidates, but I seriously must ask, "will the few that I have, together with the few of others, be enough?" Are we selling ourself short educationally by not encouraging more of our top scholastic students, boys and girls, to embark on *farming* as their vocation?

What alarms me still further is the fact that those few capable students, who often come from good farms, become unwilling to make it their vocation because of the hard work, high risks, lack of financial rewards and their desire for the materialistic goods that they see others having. It is true that farmers are better off now than ever before, but their average income is still far below other professional groups, and even below most construction workers. We in Agricultural Education also aggravate the situation by over emphasizing farm related occupations, Agri-business and the like, so those few able students are often pushed into another field instead of farming.

Most of our present day farmers were brought up on farms and early in their life they came to realize that this was going to be their vocation and practiced it. But the number of farms have dwindled to the point where we can no longer depend on farms alone to supply our replacement needs. Not every lawyer's son becomes a lawyer and surely not every farmer's son becomes a farmer, so our needs increase. Today's farmers have also had the advantage of time to accumulate the knowledge and skills proved necessary to succeed and still meet our country's gigantic demands for food and fiber. However, realizing that six billion or more people will be coming to dinner in the year 2,000 and that this rise of two billion further means that world Agriculturalists, especially U.S. farmers, will have to come up with nearly a 75% increase in production just to stay even, I truly wonder if we have enough time to prepare the young men and women that will be needed. The Agricultural revolution in which the western nations have pioneered and excelled, has been fostered by research and educational institutions; industry and public agencies; but mostly by the efforts of the few increasingly sophisticated and innovative farmers. Quality people are needed in the farming profession to work together with Agricultural Scientists, learning how to squeeze more food out of the nearly 3.5 billion acres presently under cultivation in the world today.

These limiting factors of time and talent are compounded by the amount of money made available to Agricultural Education, farming, experimentation and in alleviating world hunger.

We must develop a new forced-pace agricultural program so we can pump out more farmers and thus avert massive starvation. Since 1798, when Thomas Malthus published an Essay on the Principle of Population, there have been repeated warnings from serious scholars that man's numbers, which are subject to exponential increase, could — or at some time surely would — overtake food supplies.

Those of us in Agricultural Education must gear ourselves for the tasks ahead. We must grab those good students, encourage them in every way possible to make farming their lifelong profession. We must work hard ourselves to keep up-to-date so we can challenge our students, which in turn will make our profession even more rewarding. We must convince those who develop and administer fiscal policies, that monies are greatly needed, not just to produce a tractor that "thinks for itself," but to produce farmers that will have the abilities to meet the challenges of the 21st century.

How can local Vocational Agriculture Teachers and FFA Advisors help? No doubt, over the years, Agriculture teachers have been more than just instrumental in fostering Agricultural careers. But I feel we have become too complacent. Most teachers don't go out after students but rather accept those the Guidance Departments send them. Unfortunately, Guidance Counselors have little awareness of the complexities in today's farming and thus continually counsel the top students out of Agriculture. We must become more insistent, get those we need and convince them that farming is in fact the most

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CONTINUED PREPARING TOO FEW . . .

rewarding occupation of man. As Senior Class Advisor, I have continually noticed that the majority of the graduates of today are not interested in the mighty buck as they are in accomplishing something that is worthwhile to mankind. What greater worth is there than *farming*?

Agricultural Education, I feel, must also start early, most certainly in the elementary grades, if we can hope to interest enough of the caliber of student we need. Most of the upper class members have set goals by the 9th grade, which do not include *farming*. Unfortunately it is at this time that Agriculture is made available to most students. It's too late. Through programs, perhaps involving FFA members, contacts can be made with these Grade school children, on a continuing basis, so that young minds can perhaps include *farming* as one of the career choices.

Time is running out. The Green Revolution is not over, it is just beginning. We must renew youth's love for farming and nurture this love if the Green Revolution is to have the talent needed to keep it Green.

As a Teacher, I do sincerely, have hope and optimism, especially when I look into the eyes of our energetic youth, that we can once more muster the wisdom and knowledge necessary to go forward. ◆◆◆

CONTINUED EDITORIAL

We must educate them, not only in the skills required to produce, process and distribute the food to feed the United States and parts of the world, but we have to share with them our concern for others, as the basis for fighting the world hunger problem and building understanding between the nations of the world to help ensure world peace. It continually amazes me that the way we show concern for each individual in our everyday relationships between teacher and student; teacher and teacher; teacher and supervisor; teacher and . . . leads to more concern shown in relationships among many people and eventually even among nations.

Second, I hesitate at the *magnitude* of the task. To follow in the footsteps of such excellent past editors as Martin McMillion, Roy Dillon, Bob Warmbrod, Cayce Scarborough and many other who have done such a good job of editing an outstanding magazine to serve the agricultural education community. All these men have attempted, over the years, to take the material supplied so well by you teachers, supervisors and teacher educators, and keep their hands on the pulse-beat of agricultural education to help it keep pace with the increasing needs in production agriculture and agri-business.

I hesitate at the enormity of the task, but readily accept the *challenge* when I remember I can always depend on each of you to support me in keeping THE AGRICULTURAL EDUCATION MAGAZINE, not only of the highest quality, but attuned to the needs of each group of readers—students, teachers, supervisors, teacher educators and other interested readers. With strength and guidance from the good Lord and help from all of you, I will try to do this job to the best of my ability.

I have a few ideas I would like to try in an effort to keep the MAGAZINE attuned to your needs. However, I will need to hear from you on other ideas you would like to see incorporated. I would like to know what features you find most useful and any you would like to see modified. I will need outstanding articles submitted by you to make an outstanding magazine. Thank you for your help in the past, and I am looking forward to the outstanding publication we can create in the future, *together*. JPK

COMING ISSUES COMING ISSUES COMING ISSUES

COMING ISSUES

FEBRUARY — FFA — The Intracurricular Activity

MARCH — Agricultural Mechanics — Keeping the Wheels Turning

APRIL — Supervised Experience Programs — Learning by Doing

MAY — Agricultural Products — Preparing Agricultural Processors

JUNE — Camping and Summer Activities

JULY — Facilities — Planning, Maintenance and Improvement

AUGUST — In-service Education and Teacher Conferences

SEPTEMBER — Fairs, Shows and Contests — Competition, Practice and Motivation

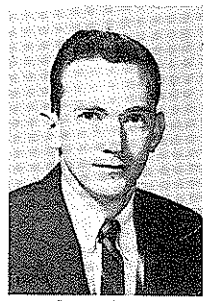
OCTOBER — Preparation for Agricultural Resources and Forestry Occupations

NOVEMBER — Multiple Teacher Programs — Patterns and Priorities

COMING ISSUES

PROFILE OF A DOUBLE MINORITY

Don Knotts, Chairman
Department of Agricultural Education
Prairie View A&M University, Texas


Don Knotts

With the advent of civil rights legislation in recent years, a principal impetus was upon job opportunities in business and industry for certain segments of the society that had not previously been encouraged to participate. Almost any news media contained one or more stories of the first black judge, mayor or politician; or the first female pilot, police officer, fire fighter, or dragline operator. Few of these "firsts" were reported in agricultural related occupations, which is a strange phenomenon since both groups have played a major role in the agricultural production history of the United States.

Since the abolition of slavery in the United States, many black Americans have harbored unpleasant memories of agriculture passed down from generation to generation, and have not wished to identify with any phase of agriculture. As a result of this sentiment, black parents or guardians in many instances have not encouraged their children to seek a career in the agricultural industry.

And while the traditional roles associated with agriculture have always been predominantly masculine, many females sensed that agricultural occupations were not for them. In view of the social and cultural transitions of the past decades, many young people are questioning values and breaking traditions of their predecessors.

Debra Stamps is the first female agriculture major at Prairie View A&M University and possibly the first black female agricultural education major in the United States.

Though Debra had only one year of high school agriculture, which was the only free elective available during her senior year, the variety of occupational opportunities available to agricultural education majors inspired her career decision. Those persons influencing her most in selecting agriculture were peers and an uncle who majored in agriculture education.

Debra's major in agriculture is not the only first for her as she is the first child in the family to attend college. Studies of demographic characteristics involving female achievers and innovators indicate them often to be first children, only children, scholastic achievers, and have highly-educated parents; but Debra is an exception to three aspects of this stereotype as she is the third of five children, and neither parent went farther than high school.

High school organizations in which Debra participated were National Honor Society, FFA, FHA, Science Club, Spanish Club, and the annual staff, but the Agricultural Show was the highlight of her senior year. The Reserve Champion Lamb was shown by Debra, and she assisted a younger brother with a pen of chickens.

One of the greatest problems Debra initially perceived about going into agriculture was the apprehension felt personally and lack of encouragement from some of her peers. "No way!" was the first reaction to the suggestion that she major in agriculture. That suggestion kept recurring in her mind, however, until the idea no longer seemed so alien. She did not have a clear image of what agriculture really included, and thinks that many people — both male and female — do not. Her impression at present is that she made the right decision, and others have indicated also that her independence in expressing her wishes in a non-traditional orientation was the correct thing to do.

Credibility is one of the problems Debra expects to face if she decides to teach high school agriculture. High school students may feel that female agriculture teachers do not know as much as male agriculture teachers, but she does not consider it a problem that could not be overcome with an adequate knowledge of the agricultural subject matters and a professional rapport with the students.

In recruitment of females into agriculture, Debra thinks that psychological attitudes of females and parents would have to be altered and a re-education of what agriculture has to offer before females will be attracted in significant numbers. She suspects other females may wish to do as she has done, but have a psychological inhibition about the idea of an agriculture major and reluctant to violate the traditional pattern standardized for agriculture majors.

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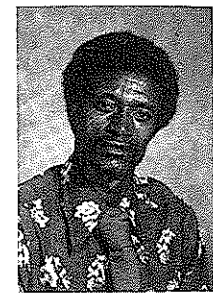
SUPERVISED OCCUPATIONAL EXPERIENCE

David L. Williams
Teacher Education
Iowa State University

Willie Rawls
Research Assistant
Iowa State University


Willie Rawls

Ninety three percent of the responding students had some type of supervised occupational experience during their enrollment in vocational agriculture.

Many teachers recognize the supervised occupational experience (SOE) of their students as the foundation of their vocational agriculture program. They describe their classroom and laboratory instruction and FFA activities as outgrowths of their students' SOE. SOE provides a means for students to participate in the performance of required tasks and the acceptance of related responsibilities in agricultural occupations.

Since the objectives for vocational agriculture were expanded, the types of SOE have also expanded. Peterson and McCreight[1] identified five types of SOE that would provide alternatives for students enrolled in vocational agriculture during the 1970's: (1) farming program—provides an opportunity for ownership, self-employment, and management experiences associated with productive farm enterprises; (2) cooperative farm placement—designed to develop competencies in production agriculture through employment on a farm; (3) supervised laboratory experience—provides planned agricultural experience using the school's farm, greenhouse, shop or other resources in addition to normal class activities; (4) cooperative agribusiness placement—provides planned experiences and responsibilities in selected businesses; and (5) supervised exploratory experience—allows students to interview and observe employers and employees in agricultural firms.

Procedures

Identification of the types of SOE obtained by Iowa vocational agriculture students was part of a research project conducted at Iowa State University.[2]

A random sample of 300 students, representing all Iowa high school students enrolled in vocational agriculture who were classified as seniors during the 1975-76 school year, were asked to complete a mailed survey on their supervised occupational experience. Sixty-five percent (196) of the students completed and returned the survey. The survey provided information about the types of planned occupational experiences which students had in vocational agriculture. Personal information that may influence students choice of a SOE was also gathered.

Findings

Ninety-three percent of the responding students had some type of SOE during their enrollment in vocational agriculture. The remaining seven percent indicated that they did not have occupational experience in vocational agriculture.

Types of Student SOE

Table 1 shows the number and percentage of students who participated in different types of SOE and their final SOE. Many of the students participated in more than one type of SOE while enrolled in vocational agriculture. Eight out of every ten students who had occupational experience participated in a farming program while enrolled in vocational agriculture. However, only 23 percent of the respondents had farming programs as their last SOE. One-half of the students received occupational experience through farm placement and almost one-third participated in cooperative agribusiness placement. Thirty-seven percent of the students had one of these two types of cooperative programs as their final SOE in vocational agriculture. School laboratories were used by almost 38 percent of the students to obtain occupational experience at some time in their vocational agriculture education. Almost one-fourth (22 percent) of the students used school laboratories to obtain their final SOE. Sixteen percent of the respondents reported participation in supervised exploratory experience programs as part of their vocational agriculture education. Eleven percent reported that this type of experience was their final SOE.

Table 1. Types of SOE students participated in and their final SOE in vocational agriculture

	Participation in SOE		Final SOE	
Types of SOE	No.	%	No.	%
Farming Program	157	80	45	23
Cooperative Farm Placement	99	50	43	22
Cooperative Agribusiness Placement	62	32	30	15
Supervised Laboratory Experience	74	38	44	22
Supervised Exploratory Experience	31	16	21	11

Personal Characteristics of the Students

Table 2 summarizes additional information about the research participants which should be considered in a study of students' SOE. All but 15 percent of the participants in the study who had SOE during vocational agriculture lived on a farm. Over three-fourths of them completed four years of vocational agriculture and 91 percent participated in FFA.

Almost two-thirds of the students planned to enter an agricultural occupation. Forty-eight percent reported that farming was their occupational choice. Almost 4 out of 10 of the respondents were undecided or planned to enter a non-agricultural occupation.

CONTINUED SUPERVISED . . .

A majority of the students (56 percent) reported that they planned to become self-employed or employed after high school and not pursue additional formal education. Of the seniors who planned to obtain additional education, 25 percent reported plans to attend an area school or community college compared to 19 percent who planned to attend a four-year college.

Table 2. Personal characteristics of students

Characteristics	Number	Percent
Home location:		
Farm	156	85
Not on farm	27	15
Years enrolled in Vo-Ag:		
Less than four years	41	22
Four years	142	78
FFA Participation	178	91
Occupational plans:		
Farming	84	48
Off-farm agribusiness	23	13
Non-agriculture or undecided	68	39
Plans after high school:		
Attend area school or community college	46	25
Attend four-year college	34	19
Self-employment or employment	103	56

Conclusions and Implications

1. Almost one-half of the participants planned to become self-employed or employed in farming. Eighty-five percent of them lived on a farm and 45 percent had either farming programs or cooperative farm placement as their last type of SOE. These findings are perhaps indicators of students' desires to enter farming, and the occupational opportunities that exist in farming. In situations of this nature, production agriculture should be emphasized in the vocational agriculture curriculum.
2. Almost two-thirds of the research participants planned to enter an agriculture occupation. Over one-half of the students did not plan to obtain formal education beyond high school. Therefore, it is imperative that SOE and other components of the vocational agriculture program be utilized to prepare students with such occupational and educational plans for entering employment at the high school level.
3. A majority of the students had SOE as part of their vocational agriculture program. Many of them participated in more than one type of SOE. Perhaps this indicates the need for different types of SOE to meet the diverse interest of students and the opportunities available to students enrolling in vocational agriculture in the 1970's.
4. Sixteen percent of the students participated in supervised exploratory experience during vocational agriculture. Eleven percent had this type of experience as their final SOE. Thirty-nine percent of the students were undecided about their occupational plans or planned to enter a non-agricultural occupation. Situations of this nature suggest a need for vocational agriculture teachers to provide students with supervised exploratory SOE in agriculture and/or an opportunity to work with other departments in the school to help students set occupational goals and develop educational plans to reach their goals.
5. Over one-third of the participants had supervised laboratory experience during their vocational agriculture education and almost one-fourth of them reported supervised laboratory experience as their last type of SOE. These findings suggest a need for teachers to activate non-school community resources for students' SOE or that resources needed to accommodate students' interest are not readily available in the community and must be provided by the school.
6. One-half of the students participated in cooperative farm placement and almost one-third participated in cooperative agribusiness. Over one-third had one of these cooperative programs as their final SOE. These data indicate that cooperative occupational education is being used to provide SOE for students in vocational agriculture. These findings confirm the need for teachers to possess competencies in planning and conducting cooperative education programs.

Students may enroll in vocational agriculture to prepare for a variety of agricultural occupations. Students should have an opportunity to gain supervised experience in performing tasks and accepting responsibilities in the occupation they desire to enter. This means that alternative types of SOE must be provided for the students. SOE should be utilized as a means to help students reach their occupational goals. Students entering and progressing in agricultural occupations are indicators that vocational agriculture is accomplishing its objectives. Phipps[3] used the following words to describe the importance of SOE: "Tell me the kind of supervised occupational experience programs pupils have, and I will tell you the kind of teacher of agriculture you are." ◆◆◆

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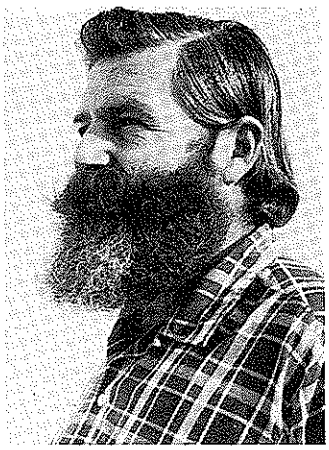
2. Williams, David L., *Supervised Occupational Experience in Vocational Agriculture*, Ames, Iowa: Agricultural Education Department, Iowa State University, 1976.
3. Phipps, Lloyd L., *Handbook on Agricultural Education in Public Schools*, Danville, Illinois: The Interstate Printers and Publishers, Inc., 1972, p. 198.

CONTINUED PROFILE OF A DOUBLE MINORITY

What does the future hold for Debra Stamps? Her present ambitions are to finish a Bachelors degree at Prairie View and perhaps earn a Masters degree also. After completion of higher education, she prefers either to teach agriculture or manage a farm. Her love of working with young people may surpass the farm management desire, so present inclinations are more toward an education career.

Debra may not be the first black female agriculture education graduate, but her personal background combined with her selection of career orientation definitely sets her apart from the majority. ◆◆◆



Roger Hall

DAIRY GOATS AND AG TEACHERS CAN BLEND

Roger Hall
Vo-Ag Teacher
Redlands Unified School District
Redlands, California

I entered agriculture teaching 17 years ago supporting a solid prejudice against dairy goats. I had never been exposed to a dairy goat, but my father, who grew up on a homestead which offered goat meat and milk with no refrigeration and little thought for sanitation, abhorred them.

In addition, I figured that certainly creatures such as rabbits and goats which did not rate any instruction in colleges and universities must be pretty worthless.

In short, I thought of goats as being useless, odorous brush and tree killers that could only be kept as petstock, and could certainly never be important financially.

My first three years of teaching were in an area where urban sprawl had taken over. FFA members often had only a back yard to keep a project in. As the youngest teacher in a three-man department, I was exposed to dairy goats because the other teachers allowed them as projects.

FFA members brought their dairy goats to our little campus fair, and I was impressed with the productivity of the little animals. One 150 pound doe stood there and was relieved of a gallon of milk for her morning milking. The goats created a lot of interest at the fair. Face it. I was captivated by their distinct personalities.

My wife and I started "going goating," and I bought her some registered Nubians after we visited many dairy goat breeders and dairymen throughout California. Our state boasts the largest goat dairy in the United States.

The dairymen produce fluid milk, as well as milk for canning and dehydrating. It sells especially well to certain invalids and people with allergies, and for babies because, as I learned, it digests in one third the time as cow milk. Besides having a smaller, softer curd, goat milk contains extra chloride salts, which also aid digestion. Outside of that, the two types of milk are very similar nutritionally.

From the practical, personal standpoint, the goats had me sold. When ours came into production, we started using the fluid milk and making ice cream, whipped cream, cottage cheese and butter. The quality of the products was comparable to the cow products. We sold our Guernseys and registered Jersey to use strictly goat milk because the goats were easier to handle, easier to milk, produced more milk on free browse, and produced a more reasonable amount of milk for a small family.

I became aware of the great demand for dairy goats. The United States exports huge numbers of them to Mexico and South America, and the prices of breeding stock keep going up. The governments of many of these southern countries have set up national dairies to supply milkers to poverty-stricken families. They return to this country to replenish their supply every few years.

After learning these things about dairy goats, I stopped discouraging my interested students from trying them as an FFA project. In fact, I often helped students select good project animals. My first such venture convinced me of the worth of a dairy goat FFA project.

Mark lived right in the middle of town in the garden house of an old estate. His yard was surrounded by a six foot rock wall. The family kept a variety of animals in their secluded yard, but nothing would do for Mark but a dairy goat. I helped him find a registered purebred Saanen yearling for a reasonable price.

Mark's first step was to breed the doe to a registered purebread Saanen buck. She kidded with a buck and a doe kid. Partly through the ingenuity of Mark's father, he was able to sell both kids registered. In doing so, he brought in enough capital to pay for his original investment in the doe, all the feed to the time of kidding, and the breeding fee.

Mark's little Saanen doe was an outstanding producer for a first freshener. She hit a six-quart peak, and she averaged nearly a gallon a day for her ten month lactation. Mark's parents purchased part of the milk his doe produced for family use, and he had some left to sell to a neighbor. With one producing dairy goat, Mark made a profit on his small enterprise that exceeded other students in his chapter who had greater numbers of larger types of livestock.

Since this successful start ten years ago, dairy goats as FFA projects have grown in popularity in San Bernardino County and throughout Southern California. Dairy goats have been recognized for FFA classes to be shown in county

and district fairs. This affords another livestock area for showmanship, round robin, and classes for premiums. An advantage of showing dairy goats is that older animals can be shown so breeding stock can be exhibited by a student through his entire term of FFA membership.

With this increase in the number of dairy goat FFA projects, I've learned a lot about them that might be helpful to other teachers of vocational agriculture. Information on dairy goats is almost impossible to find in some areas of the country. Like the rabbits, dairy goat registries and breed clubs have limited funds available to furnish elaborate materials for teachers or for class use.

There are two registry associations for dairy goats in the United States. The American Dairy Goat Association, P.O. Box 186, Spindale, N.C., has a system of upbreeding grade goats to American Breeds, and they have worked with the development of the earless La Mancha dairy goat. When buying animals registered with ADGA, it is important to inspect the papers to see that they are actually purebred. Certificates issued on grades and experimental animals do not make that animal eligible to enter in fairs that allow purebreds only.

The other registry, American Goat Society, Inc., 1606 Colorado St., Manhattan, Kan., of which I am a life member, and for which I am an official judge, registers purebred dairy goats only and maintains closed herd books. AGS is instituting closed herd book registry for La Mancha dairy goats now, too.

There are five major breeds of dairy goats in the United States. The La Mancha, mentioned above, originated in Spain. It is characterized especially by its earlessness. The ears usually consist of small, gentle folds of skin around the auditory orifice. La Manchas may be any color. They tend to be a little shorter and stockier than other breeds.

The Nubian, which originated in Africa and the Orient, is the other extreme, with a strongly arched nose and long, drooping ears. It is the most popular breed, appealing to hobbyists because of their varied colors and unique temperament. The Nubian tends to carry more weight than any of the other breeds, and often its hind legs tend to be longer giving it a strange gait.

The other breed which may be any color at all is the French Alpine, which originated in the French Alps. The Alpine has alertly carried ears and is often a more refined animal than the other breeds.

The Saanen, my favorite breed, which originated in Switzerland, is pure white. Dark freckles are allowed on the skin, but not in the hair. A cream color instead of white is allowed, but it is not preferred. The Saanen also has erect ears, and it is the largest breed.

The Toggenburg also originated in Switzerland. It is the smallest breed with short, erect ears and a concave nose. The Toggenburg must be brown with white facial stripes and ear trim, white lower legs and white triangles at the base of the tail.

If you know dairy cattle, you can work with dairy goats. Management is similar. Goat kids are disbudded, often with an electric dehorning iron when the horns start

I entered agriculture teaching 17 years ago supporting a solid prejudice against dairy goats.

peeping through the hair. It is an easier job with a kid than with a calf, though, because one person can easily restrain the kid and do the job. Or a small holding box can be built for dehorning kids. The musk gland may be burned out of the poll area of buck kids at the same time to reduce odor in the mature buck.

Kids are also tattooed in the ears (tail webs for La Manchas) for positive identification. Routine hoof trimming is important, and so are grooming, leading and handling if the animal is to be shown. Dairy goats must be taught how to respond in the show ring, both in walking and in maintaining a show stance. There are differences between showing dairy goats and dairy cattle. The dairy goat showman always walks forward on the side away from the judge, and he positions his animal by placing each foot by hand. Legs nearest the judge are placed first.

Dairy goats are judged by a score card that is almost identical with the dairy cattle score card. The biggest differences will be found in the udder, which holds only two teats instead of four, and in the rump, which will have a lot more slope from hips to pins than the rump of the cow. Dairy goats can also be officially production tested through the National DHIA program, as can dairy cattle.

Dairy goats may be fed much like dairy cattle, although they generally do not need quite the sophisticated roughages cattle need to survive. Producing does do better with better roughage, of course. A producing doe should have about five pounds of hay a day and two pounds of concentrate.

One difference between goats and cows that is a problem for goat breeders to contend with, is that goats are seasonal breeders. Generally, the breeding season runs from September to February, with Nubians willing to breed a little earlier and later. Gestation period is five months, and twins and triplets are common, with 2.6 kids per litter being the average.

If this article has whetted your appetite, good, but sources of information on dairy goats are limited.

Two periodicals are available. Countryside Magazine, Rt. 1, Box 239, Waterloo, Wisconsin, and Dairy Goat Journal, P.O. Box 1908, Scottsdale, Arizona.

Pennsylvania State University at University Park, PA offers a correspondence course on dairy goats for $5.00, and a slide set with cassette on selecting dairy goats, compiled by California State Dairy Goat Council, is available from University of California Extension at Berkley for $15.50.

A few books are in print. *Dairy Goats: Breeding, Feeding and Management* by University of Massachusetts can be purchased from ADGA, Spindale, N.C. for $1. *Aids to Goatkeeping* by Leach and *Illustrated Standard of the Goat* by Owens can be obtained from Dairy Goat Journal. AGS has educational yearbooks for sale for $2 each. AGS is in Manhattan, Kansas. *Dairy Goats: Selecting, Fitting and Showing* can be purchased from Hall Press, P.O. Box 5375a, San Bernardino, Calif. for $3.50. ◆◆◆

POPULATION, FOOD PRODUCTION AND THE AGRICULTURAL EDUCATOR

You've heard or read the figures before. What then, are the implications for agricultural educators?

Alfred J. Mannebach
Teacher Education
University of Connecticut

The United States population is currently estimated to be 215 million people. It is increasing at approximately .6% or 1.3 million persons per year.

The world population passed the four billion mark sometime during 1975. World population is increasing by approximately 80 million persons per year. That's more than one and one-half million new mouths to feed per week! Each year, at the current rate, world population grows by about two percent.

It is obvious that the time required for the population to double is decreasing. At the current rate, demographers predict that the doubling rate is now down to 35 years. At that rate, the world population would reach eight billion by 2010.

Realistically, however, this kind of growth cannot continue over a long period of time. Ecological limits exist. The rapid population growth must be slowed, either by universal birth control or by war, famine and disease epidemics.

One thing is certain. The population will continue to grow tremendously for a period of years before zero growth will be achieved. High birth rates in the recent past bring us to a stage now where large numbers of couples in many countries are entering their reproductive years. It is estimated that even if the population growth persists at the present level, the United States will not reach zero growth for fifty to sixty years. By that time its population will be approximately 40% larger than it is today.

So several things are clear. The population is greater than ever before, it is increasing at a rapid rate, and it creates great demands for food, shelter and clothing. Never before has the productive capacity of modern agriculture been challenged to meet such fast growing needs. Population growth alone requires an annual increase of three percent in world food output.

So much for the demand side of the picture. Now let's look at the supply side.

Only a few years ago, agriculture was written off as a fading sector of the nation's economy; but today it is recognized as a major growth industry. It is in fact America's largest industry. When its supply and processing industries are included, agriculture accounts for about one-sixth of the gross national product, about one-fifth of total employment, and about one-quarter of export earnings. Output per man-hour has grown much more rapidly in agriculture than it has in manufacturing, and this increase is likely to continue. Food supplies in the United States have grown far more rapidly than the growth in domestic demand has required and will probably continue to do so.

The growth, abundance, and progress of American agriculture was made possible by a complex system of foreign policy, domestic and world-wide food policy, technology, research, education and many other factors. To date, biological limits for productivity have not yet been realized or delineated. Average yields of major commodities are well below the records in productivity. For example, the 1974 average bushel per acre for corn, wheat and soybeans was 72, 28 and 24 respectively, while the record for corn is 307, for wheat 216 and for soybeans 110 bushels per acre. Similar examples exist in the dairy and livestock industry, with record production far exceeding the average. Record production on a wide scale is not possible because of limited resources and unfavorable climate conditions in many parts of the world.

Technology, based upon research, development and education, has played an important part in the development of a productive system of agriculture in the United States. For example, bio-environmental control may consist of breeding resistance to pests and disease, using predators, parasites and pathogens, genetic manipulation and sexual sterility, using attractants and repellents, environmental manipulation, plant spacing, species diversity, timing, crop rotation, use of plant hormones, water management, soil preparation, sanitation and destruction of inoculum in soil, physical environmental factors such as sound, light and electromagnetic energy, integrated pest control, and use of fertilizers. And bioenvironmental control is only one of a myriad of factors contributing to the complicated task of food production. The example is provided here to illustrate the complexity of technical agriculture.

Production depends upon resources. The resource base for food production consists essentially of land, water, energy, fertilizer, pesticides, capital, credit, machinery and technology. Climate and weather are also determining factors. Optimum conditions are required to realize current biological limits.

Resource management is of utmost importance. The emphasis should be on the development of renewable resources (food, feed, fiber, fish, timber and wildlife) while we minimize the nonrenewable resource inputs (land, water, energy, fertilizer, pesticides, time) and maximize the outputs. A massive program of research and development in agricultural science and technology is called for. Improved technology is the only hope of substantially increasing food production.

With agriculture being highly dependent on available resources, education regarding the wise and efficient use of those resources is of utmost importance if the United States is to continue to produce at current or higher levels.

Conservation of resources is not the only problem confronting American agriculture. Farmers are a minority in this country. They currently number about 3.5 million persons, or only 4 percent

(Continued on next page)

of the total labor force. Migration from farms to metropolitan areas during the past half century is drawing to a close.

Those who remain to produce the food and fiber are faced not only with adapting to the vast technological changes that have taken place, but also with maintaining and improving the economic and social aspects of rural life. Not only must we save the farms, we must also save the farmer, by being certain that as a minority, the farmer can compete economically and have the amenities and services which contribute to quality rural life. These and many other problems confront the farmer as he strives to earn a living and live a quality life while producing the food needed to feed a hungry world.

In economist's terms, the farmer is locked into atomistic competition in which the individual producer has no influence on the price of what he sells. In addition he lacks adequate knowledge to adjust his production plans, and hence he has remained at the mercy of the market as well as of the weather.

The objectives of U.S. farm policy must be to encourage maximum food production and achieve relative price stability while providing a decent return on the farmer's investment. To day, the problem with U.S. agriculture is, not continuing surpluses, but intermittent scarcities; not bulging grain elevators, but rebuilding depleted food reserves; not finding markets for U.S. crops abroad, but avoiding the rise of export controls that would stabilize the U.S. food market at the cost of losing friends and customers elsewhere in the world.

What then, are the implications for agricultural educators? What role must they play? What are they to do with their knowledge of the strengths and problems of American agriculture while at the same time realizing that a billion people suffered from hunger and malnutrition last year, that 10 million children the world over are so seriously malnourished that their lives are at risk, that 400 million people live on the edge of starvation, that 12,000 people die of hunger each day and that in India alone one million children die each year from malnutrition.

First, production agriculture must remain the core of our vocational agriculture programs. We must continually help our students learn and adopt approved practices of production. We must keep up with technology. As technology increases, infinitely more combinations and linkages are created. Thus, more change and innovation. We as educators must keep abreast of the changes in technology, economics, and politics as it affects the production aspect of agriculture.

Second, we must maintain and expand our instruction in non-farm agriculture occupations. Current U.S. Office of Education data show that secondary enrollment in production agriculture slightly exceeds enrollment in the seven areas of agribusiness. This situation may exist because we are not actively recruiting students and teachers from the agribusiness sector to expand our programs in these areas.

The non-farm sector of agriculturalists must be aware of the vital role they are playing. They must also have broad understanding of the problems confronting the farmer as well as a basic knowledge of world food distribution problems.

Third, there must be a better understanding among all involved in vocational agriculture of the total food cycle. Teachers of vocational agriculture are well aware of the food production cycle. However, we probably have little awareness or first hand experience of the total social, political and economic implications of agriculture.

What do we know about the problems faced by suppliers of farm machinery and supplies, equipment, building materials, feed, seed, fertilizer, hardware, etc. And once the product leaves the farm, what do we know about the marketing, transportation, legal restrictions, storage, warehousing, processing, packaging, distribution, foreign trade and eventual delivery of agricultural products? Do any of our students with a strong agricultural background get involved in these aspects of the agribusiness sector? What preparation have they had?

Fourth, we must initiate a general information program to inform the public of the tremendous job being done by the American farmer. Over the last two decades, food production has outpaced population growth; 2.8% annually for food, 2% for people. Much of the food deficit comes from spoilage and wastage. What impact and influence can we have on these areas? How can we help the public to understand their proper role in the food cycle? The technology for food preservation is present, what is lacking is education and management, two areas in which agricultural educators can play a vital role.

Fifth, we must expand the base of manpower to get educated involvement in all aspects of the food production cycle. Fewer and fewer of our students in vocational agriculture have farm backgrounds. The base of our source of teachers who have had intense agricultural experience is shrinking. We must continue our recruitment efforts and help our students enter agricultural occupations with a basic knowledge of the total agricultural economy.

Sixth, we must expand our involvement in teaching young and adult farmers and agribusinessmen. Continuing education is essential. We must continue to expand on recent efforts to increase emphasis on adult and continuing education for farmers and agribusinessmen, as well as the public in general.

Seventh, we must help the American public to realize the true meaning of ecology. As we all know, ecology is defined as the branch of biology that deals with the relation between organisms and their environment. Ecology is a time bound science. It deals with things that happen over a period of time. Ecologists know that what does good in the short run may very well do harm in the long run. Whenever confronted with a proposal to diminish suffering, or to initiate action, an ecologist will always ask: And then what? What happens afterwards? What are the alternatives? What are the possible consequences?

The role of the agricultural educator in helping others to understand the tenets of ecology is basic.

In summary, these and many other suggestions regarding our role in educating for a productive agriculture become evident as we analyze population

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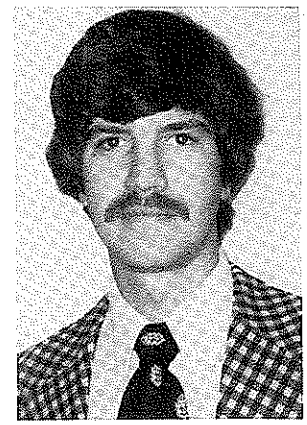
Feeding The World— More Than Increasing Production

Richard D. Jones
Graduate Student
Cornell University


Richard D. Jones

Many scientists and authors, mixing *small* amounts of *insight* with *large* doses of *pessimism,* paint a grim picture of a future world overrun with people suffering from widespread starvation. It is difficult for well-fed Americans to associate this ugly prediction with any sense of reality. Unfortunately, this image of a starving world is an undistorted amplification of what already exists in many parts of the world. Conservative estimates by the World Food Conference in 1974 placed the number of malnourished in the world over 500 million persons. None of us can accurately predict how many additional millions will slide into the ranks of the hungry. Factors like weather and birth rates make predictions difficult. Those with an optimistic nature, which I describe myself as having, predict that man, using his many talents, will eventually conquer the challenge of feeding the world.

Regardless of your point of view, there is little disagreement that food will become a more important commodity. In the future, diplomatic relations and world conferences will center on food. How to produce it? How to improve it? How to pay for it? How to get it to the people who need it? Government leaders from every nation will be directing questions like these towards the agricultural community. American Agriculture, most productive in the world, will be expected to answer more than their share of these questions and develop solutions. This is not a new role for American Agriculture. Americans have contributed millions of dollars and thousands of research and extension workers to improve agriculture in foreign countries. This effort has been significant and has undoubtedly improved food production in many corners of the world. However, it has not been enough and continued and more intensive efforts must be made to decrease world hunger.

We in agricultural education must prepare our students as leaders that can recognize the problems and challenges of a future world where food will be the key to survival.

It is difficult for anyone to really comprehend how large the world population is and how great their demand for food. Just counting 4 billion people would take a person over 1000 years. Feeding this number of people will take much more than exporting a few tons of wheat or opening up worldwide franchises of McDonald's. Even the significant breakthrough of new hybrid grains, described as the "green revolution" has only dented the food deficit of the undernourished countries. Feeding the world must become the primary goal of all people of the world, including Americans.

Education's Role

An undertaking of this proportion must involve agricultural education. The role of agricultural education should be one of leadership and education. Educators often expound that we are training agricultural leaders. However, it is not enough to simply produce leaders. They must be leaders with the right kinds of values and perspectives. We in agricultural education must prepare our students as leaders that can recognize the problems and challenges of a future world where food will be the key to survival.

The opportunity for training agricultural leaders becomes even more critical when we look at the number of people in this country that have an understanding of food production. Many of our current leaders do have a farm background or are only one generation from a farm. This basic understanding of farming helps them make decisions regarding food production. Today, less than 5% of our population is growing up on a farm. Students now must learn about agriculture from educational institutions. Thus while the number of farmers is decreasing the number of individuals needing an agricultural education is increasing.

Production Misleading

Teachers and students in agricultural production are directly concerned with farming and food production. These students of agricultural production will be the future leaders seeking solutions to the world food problem. However, I feel the term production is misleading in describing the needs of these students interested in farming. Neither a viable American Agriculture nor a well fed world can be achieved by production alone. Historically educators have placed a great deal of emphasis, perhaps too much, on producing more. We explore new varieties, uses of fertilizer, chemical sprays, and mechanical harvesting, but too often we shortchange the marketing of the products they produce and the most efficient use of our resources. We need agriculturalists with a greater knowledge than just how to grow 200 bushels of corn or raise 1000 pound steers.

Students in our classrooms will bear the responsibility of averting world hunger. They must have tools that involve much, much more than production. Feeding the world cannot be achieved by overproduction of this country. Sterling Wortman, Vice President of the Rockefeller Foundation stated, ". . . one nonsolution to the food and hunger problem . . . . . is larger harvest in the few remaining surplus countries like the U.S." *We must help introduce production technology to the rest of the world in order to help them feed themselves.*

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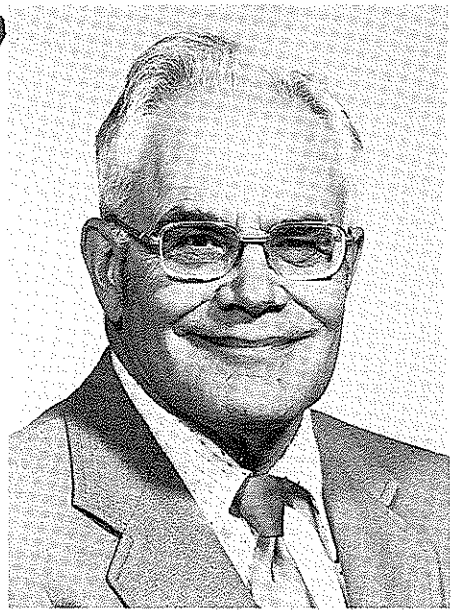
Leader in Agricultural Education:



DWIGHT L. KINDSCHY

*by John A. Lawrence**

Inauspicious beginnings have often led to exceptional and rewarding educational careers. Such is the case with Dr. Dwight L. Kindschy who will retire in June of 1977 as Head of the Department of Agricultural Education at the University of Idaho. At retirement he will have completed thirty years of service to Idaho and its Land Grant Institution, serving the last nine of these years as department head. During this tenure, 349 agricultural education majors have been influenced by his classes, and of this group 128 are presently teaching vocational agriculture or are employed in a related field of education. Dr. Kindschy's influence as a teacher educator has been far-reaching, as graduates of Idaho's agricultural teacher training program have successfully taught in many states.

Dr. Kindschy's educational career began in 1934 when, after having completed two years of junior college, he accepted an elementary teaching position in a small one-room country school located in Rudyard, Montana. His first teaching responsibilities included thirteen students spanning seven grades. The school provided a one-room teacher parsonage, the coal needed to keep it warm during the long Montana winters, and sixty dollars a month.

In 1937 Dr. Kindschy left Rudyard to attend Montana State University, where in June of 1939 he completed a Bachelor's degree with a major in agricultural education. He then taught agriculture for six years at a multiple teacher department in Lewistown, Montana. While he was at Lewistown, the FFA chapter and department were considered among the best in the state, winning several state awards. During World War II he set up and operated the community cannery, supervised a continuous adult farm machinery course and conducted a skill-training program preparing urban students to do farm work.

A teaching aid, a simulated udder, developed by Dr. Kindschy worked so well that it received national recognition which, according to Dr. Kindschy, resulted in his being offered the position of assistant state supervisor for Iowa and an opportunity to take limited class work at Iowa State University. Two years later, in 1947, having earned a Master's degree from Iowa State University, Dr. Kindschy returned to the west to accept an agricultural teacher educator position with the University of Idaho. He received his Ed.D. degree from Washington State University in 1960.

Throughout his association with agricultural education, Dr. Kindschy's support of regional and national activities has been continuous. He has presented a number of papers and conducted several panels at the annual Pacific Regional Conference, and twice has helped host the conference in Idaho. He was instrumental in organizing the Northwest Research Council in Agricultural Education which met annually for fifteen years. In 1965 Dr. Kindschy served as President of The American Association of Teacher Educators in Agriculture. He served for several years on the AVA Agricultural Division Committee on Programs and Policies, including one year as chairman. He has been active in national conventions. In 1972, at the AVA convention, he presented a paper entitled "Do's and Don'ts When Training Agricultural Teachers with a Video Tape Camera and Recorder." During the 1973 AVA convention in Atlanta, Dr. Kindschy served as a division session chairman. From 1966 until 1976 he served as a special editor for *THE AGRICULTURAL EDUCATION MAGAZINE,* and he is currently serving on the AAVIM Board of Directors. Several of his articles have been published in *THE AGRICULTURAL EDUCATION MAGAZINE* and the *Journal of the American Association of Teacher Educators in Agriculture.*

Dr. Kindschy has received a number of honors in recognition of his achievement. These awards include: The Luther Gulick Camp Fire Girls Outstanding Service Award, the Honorary State Farmer Degree in Idaho and Iowa, the Idaho Twenty-Five Year Service Award in 1963, the Honorary American Farmer Degree in 1975, and the NVATA Citation Award in 1975. Dr. Kindschy was recognized in May, 1976, by the University of Idaho College of Agriculture as recipient of the R. M. Wade "Excellence in Teaching" award.

Dr. Kindschy has also maintained continuous membership in and support of a number of professional organiza-

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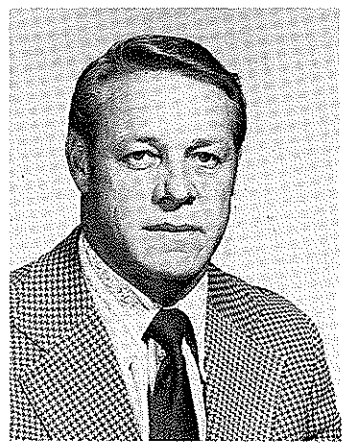

John Lawrence

*Dr. John A. Lawrence, Teacher Education, University of Idaho, Moscow.

CONTINUED LEADER IN AG ED . . .

tions which include: the American Vocational Association, the Idaho Vocational Association, the National Vocational Agriculture Teachers' Association, the Idaho Vocational Agriculture Teacher's Association, the American Association of Teacher Educators in Agriculture, Phi Delta Kappa, the Idaho State Employees' Association, the Idaho Chapter of Gamma Sigma Delta (charter member), FFA Alumni Association, the State Agricultural Education Advisory Council, and the Idaho FFA Executive Committee.

A man's personal life is also a measure of his success, and in this category Dr. Kindschy is no exception. In 1943, while teaching in Montana, he put an abrupt halt to the teaching career of a very capable home economics teacher when he married Mary Jane Roberts. She later returned to the field of education in elementary guidance. Dr. and Mrs. Kindschy have three daughters: Jan, Donna, and Marigail. Each of these daughters, now married, graduated from the University of Idaho with a degree in education. Dr. and Mrs. Kindschy are well-known throughout the community for their religious, social, and civic interests and activies.

Throughout his career as a teacher educator in agriculture, Dr. Kindschy has worked unceasingly for the improvement of agricultural education throughout the state and nation. His lifetime of devotion, to a cause in which he sincerely believes, exemplifies the kind of leadership which has made agricultural education so dynamic in our day. He has done his work well. ◆◆◆

CONTINUED FEEDING THE WORLD . . .

Increasing food production in foreign countries is also not the total solution. W. David Hopper, President of the International Development Research Centre, points out, "It's important to recognize the world food problem does not arise from any physical limitation on production . . . . . but is limited by the social and political structure of nations." You may question how agriculture can make a contribution to these problems. Farmers and others in this country understand how farming can be made productive to meet consumer demands. Individuals with an understanding of farming can provide suggestions and solutions to an eager and hungry world. Agriculturalists who choose to make a contribution to improving world food production must not only know food production techniques but more importantly how to communicate this technology and work within the social structure of other countries. American agriculturalists can fill these challenging roles if they understand the importance of food, marketing, communication skills and possess the ability to work effectively with others.

Many teachers do provide their students with insight into the view of "agriculture, more than production." However, all teachers should rethink their courses of study to insure that the skills and knowledge we are teaching will be useful in tomorrow's agriculture.

Local Community Resource

A second role of agricultural education is as a resource for local communities. Agriculture is destined to be a minority group but all are concerned with its products. In regards to the challenge of feeding the world, people in local communities will look to those who know and understand agriculture for information to make decisions. Local agriculture departments can relate the real world of food needs as part of the continual agriculture story they are telling. I have seen too many vocal liberals expound that farmers should produce more and export surpluses as the solution to world hunger. Unfortunately, these individuals lack real world economic education.

Agriculture has a responsibility to inform people of how agriculture works and what can or cannot be accomplished.

Agricultural education can contribute to the effort of feeding the world. If we look beyond increasing production and teach our students marketing, a sense of the importance of food in the world, how to most efficiently utilize land and how to work with others, we will see that future agriculturalists will have the tools to contribute to the solution of the world food problem. Will your students be ready to accept the challenge? ◆◆◆

CONTINUED POPULATION, FOOD PRODUCTION . . .

trends, world food needs and the capacity of agriculture to meet the needs. The fact that our own American agriculture is the most productive in the world offers evidence that we have done an excellent job in the past. But we cannot rest on our laurels. Expanded and informed involvement in research, development, teaching, planning, policy making, evaluation and feedback is needed if we are to influence, provide direction and offer leadership to the changing agricultural industry of the future. ◆◆◆

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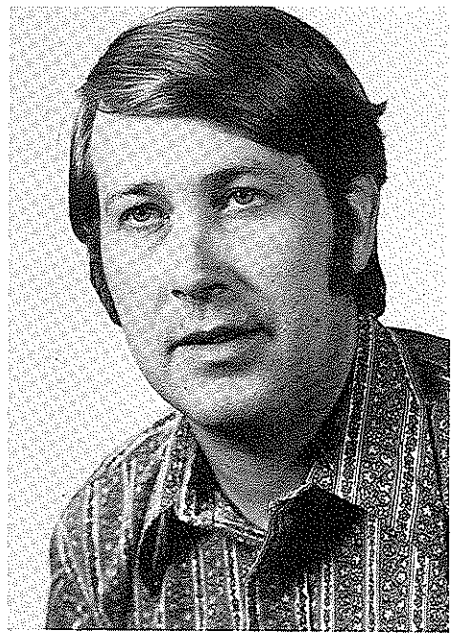
WHY STUDENTS DROP VO-AG

Layle Lawrence
Teacher Education
West Virginia University

Thomas Bean
Extension Specialist, Agricultural Safety
West Virginia University



Thomas Bean

A greater number of students might be retained in the program if teachers were to encourage first-year students to establish challenging and profitable experience programs, and stress involvement and participation in Future Farmers of America activities.

A sizable number of students who enroll in the first year of vocational agriculture do not return for the second year of study. Aside from those who drop out of school or move from the community, little is known with regard to factors which contribute to student retention or discontinuance. A study was recently completed at West Virginia University to determine the degree to which selected variables influence student withdrawal after the first year of vo-ag. Among variables studied were counseling, pre-enrollment visits, supervisory visits, supervised occupational experience programs, FFA participation, grades, absenteeism, involvement in sports, home location, and fathers' occupation. The number of girls involved was too small for sex to be considered as a factor.

Schools in five counties were selected for study and permission was obtained from teachers and administrators to proceed. Subsequently, 69 students who had completed the first year of vocational agriculture in 1974-75 and remained in school, but who did not enroll for the second year, were interviewed. The 184 students who had not withdrawn from vo-ag after the first year were also surveyed. Thus, of the total sample of 253 students, 27 percent had dropped out of vo-ag after the first year of study.

It was found that while counseling was available in all schools, only 27 per cent of the students had discussed occupational interests with a guidance counselor prior to enrollment in vo-ag. However, this activity had no apparent bearing on the withdrawal rate. Obviously, counseling did not greatly influence educational decisions of this sample of students as only 13 percent of those who dropped out of vo-ag after the first year had discussed discontinuance with their guidance counselors.

TABLE. 1. INFLUENCE OF SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS ON SECOND-YEAR STUDENT STATUS

Student Status	SOEP		No SOEP	
	No.	%	No.	%
In Vo-Ag	182	78	2	10
Dropped Vo-Ag	51	22	18	90
Total	233	100	20	100

Chi Square value significant at .01

TABLE 2. INFLUENCE OF INCOME EARNED FROM SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS ON SECOND-YEAR STUDENT STATUS

Student Status	No Income		$1-$100		$101-$200		$201 or More	
	No.	%	No.	%	No.	%	No.	%
In Vo-Ag	19	36	70	73	48	94	47	87
Dropped Vo-Ag	34	64	26	27	3	6	7	13
Total	53	100	96	100	51	100	54	100

Chi Square value significant at .01

Pre-enrollment visits with prospective students and their parents are considered to be an important part of a vo-ag teacher's job. It was disturbing to note that only 21 percent of the students had been visited prior to enrollment. Surprisingly, there was no indication that students who had been visited were more likely to remain in the program. Also of little effect on student retention were absenses and participation in athletics. A greater proportion of students receiving grades of C, D, or F in vocational agriculture dropped out after the first year. In fact, nearly two-thirds of the dropouts earned grades of C or below.

Development of a supervised occupational experience program, either on-farm or off-farm, has long been emphasized as an essential ingredient of a successful vo-ag program. Data in Table 1 indicate that the experience program is a significant factor in retention of students in the program. Of the 233 students who developed some type of experience program, 78 percent remained in vocational agriculture while only two of the 20 students who did not have an experience program did so.

Evidence of the importance of a challenging experience program is presented in Table 2. As income from the supervised occupational experience program increased, the tendency to remain in vo-ag also increased. The low level of earnings, however, suggests that more teachers need to impress upon their students the value of scope in occupational experience programs.

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CONTINUED

WHY STUDENTS DROP VO-AG

Data in Table 3 underscores the necessity of experience program supervision. As the number of supervisory visits increased, the percentage of withdrawals decreased. Data presented in Table 3 also reveal a serious program weakness — 97 of the total sample of 253 students did not receive supervisory visits during their first year in vocational agriculture.

Student participation in Future Farmers of America activities motivates students to remain in vo-ag, as can be observed in Table 4. A far greater percentage of those who did not join FFA dropped out of vo-ag after the first year compared to those who became members.

Students who lived on farms or in rural areas were more likely to remain in vocational agriculture than were their urban counterparts. Likewise, students whose fathers were farmers or held a job related to agriculture were more likely to re-enroll than those whose fathers held jobs not related to agriculture or were retired, unemployed or deceased.

It is recognized that dropping out of vo-ag is not necessarily a "wrong step" for an individual to take. Legitimate changes in educational and occupational objectives do occur. However, data from this study tend to indicate that a greater number of students might be retained in the program if teachers were to encourage first-year students to establish challenging and profitable experience programs, supervise those programs closely, and stress involvement and participation in Future Farmers of America activities. ◆

TABLE 3. INFLUENCE OF SUPERVISORY VISITS ON SECOND-YEAR STUDENT STATUS

Student Status	No Visit		1		2		3 or More		Total	
	No.	%	No.	%	No.	%	No.	%		
In Vo-Ag	59	32	50	27	27	15	48	26	184	100
Dropped Vo-Ag	38	55	17	24	8	12	6	9	69	100

Chi Square value significant at .01

TABLE 4. INFLUENCE OF JOINING FFA ON SECOND-YEAR STUDENT STATUS

Student Status	Joined		Did Not Join		Total	
	No.	%	No.	%	No.	%
In Vo-Ag	168	91	16	9	184	100
Dropped Vo-Ag	48	70	21	30	69	100

Chi Square value significant at .01

From the Book Review Editor's Desk . . .

BOOKS TO BE REVIEWED

TIME OF FAMINES; By William & Paul Paddock, Little, Brown & Co. (1975)

TROPICAL PULSES, 2nd Ed; By J. Smartt, Longman Inc.,

TEA; T. Eden, Longman, Inc. (1976)

ENCYCLOPEDIA OF AMERICAN AGRICULTURAL HISTORY; By E. L. Schapsmeier & F. H. Schapsmeier, Greenwood Press (1976)

CROP PRODUCTION; By Chapman & Carter, W. H. Freeman & Co. (1976)

FARM PLANNING & CONTROL; By C. S. Barnard & J. S. Nix, Cambridge Univ. Press. (1976)

EVALUATION OF CROP PLANTS; By N. W. Simmons, Longman Inc., (1976)

CORN; By R. W. Jugenheimer, John Wiley & Sons (1976)

FAT CONTENT AND COMPOSITION OF ANIMAL PRODUCTS; By L. J. Filer, Jr., Printing & Publishing Office (1976)

VOCATIONAL AND CAREER EDU.; By Calhoun & Finch, Wadsworth Publishing Co., Inc. (1976)

CONCRETE MASONRY HANDBOOK; By F. A. Randall, Jr. & W. C. Panarese, The Interstate (1976)

FEED FORMULATION MANUAL; By T. B. Keith & J. P. Baker, The Interstate (1976)

FOOD & FIBER FOR A CHANGING WORLD; By Thomas, Curt, Bennett, The Interstate (1976)

CHANGING ENERGY PICTURE; By Durward J. Tucker, United States of America (1976)

PUBLIC GRAZING LANDS; By William Voight, Jr., Rutgers University Press, (1976)

RAISING SMALL MEAT ANIMALS; By Giammattei, The Interstate (1976)

WORLD SOYBEAN RESEARCH; By Hill, The Interstate (1976)

FOREST & FORESTRY; By Anderson & Smith, The Interstate (1976)

ELECTRIC ENERGY; By Parady & Turner, American Association for Voc. Instructional Materials (1976)

APPLYING PESTICIDES; By Colvin & Turner, American Association for Voc. Instructional Materials (1976)

AAACE COMMUNICATIONS HANDBOOK; By AAACE, The Interstate

If you feel qualified to review one of these books and desire to do so, write the Book Review Editor and he will send the book for review. Once reviewed, the book becomes the property of the reviewer.—John Hillison, Book Review Editor, Ag. Educ. Program, Virginia Polytechnic Institute and S. U., Blacksburg, Virginia 24061.

C. W. Altman

VOCATIONAL AGRICULTURE IN OUR SCHOOL AND COMMUNITY

C. W. Altman
Vocational Agriculture Instructor
Agua Dulce, Texas

Vocational agriculture should be required of all high school students, whether they will be in the production of food, or in the many fields of agri-business and management.

Certainly the need and usefulness of Vocational Agriculture and the Future Farmers of America activities can be measured in many ways, depending upon the individuals you talk to and their interests.

In my community, Agua Dulce, Texas, (approximately one hundred and twenty students in the high school) most of the students take Vocational Agriculture. The community is concerned primarily with farming and ranching, bordering on the famed King Ranch on the north side. I feel that the curriculum must fit into the needs of these students. Also most of the people in the district are permanent residents, thus permitting the parent, student, and Vocational Agriculture Teacher to know each other very well personally. This situation adds to understanding the subject and its objectives very well, as far as the Vocational Agriculture Program is concerned.

Whenever a student enters high school, enrolls in Vocational Agriculture and becomes a member of the FFA, he likes to know what the Future Farmers of America is and what it has to offer. In most cases, the student is familiar with the program, but occasionally, a new student comes into our community and asks, "Why should I take Vocational Agriculture"? Also the student may ask, "I do not have the chance to become a farmer or rancher, why should I take Voc. Agr. and how can it benefit me?"

In cases like this, my response is that it is a study of natural sciences including animals, soils, plants, basic mechanics, various skills, and a supervised project program. Other things that it touches on are the various contests in FFA beginning at the local chapter level up to the national level.

I feel that the leadership program that FFA members are exposed to is tremendous. It is very important to any student, and is useful throughout life in business and other organizations.

I have been in the business of educating students in the field of Vocational Agriculture for some twenty-seven years. I am as strong on its importance and needs as ever. I therefore have asked other people who are related to its activities for their remarks, which I would like to share with the general public.

"I strongly believe that Agriculture Education is broad enough in its scope to include giving students the tools they will need to make their way in life while becoming a responsible and successful citizen in this country of ours," says Bobby Younts former Agriculture Instructor for adults (Veterans Program) and *Superintendent of Schools* at Agua Dulce Ind. School Dist.

He continues his philosophy on Agriculture Education by adding that it consists of many agriculture related contests, pertaining to the Vocational Agriculture curriculum. "Students learn team work and the ability to communicate with each other if each is to do his best as a team member. The members share feelings of well-being, satisfaction, pleasure, and possibly failure while gaining more experience to cope with life. Goals in Agriculture Education are clear and well accepted. They are achievable and needed in our community, and throughout our country of America."

Vocational Agriculture Education does not end at high school graduation. A very important part of Agriculture Education is just coming into being at this point — the Young Farmers Organization. This group is formed exclusively for educational purposes with particular reference to the field of production agriculture along with the many related fields, commonly called agribusiness. The *Young Farmer Chapter* in our community has four types of activities including *educational, community service, leadership* and *recreational programs* in their monthly programs. The Young Farmer Chapter is of benefit to our community since it relates to things that the people are interested in and includes the entire family at times.

Tommy Ermis, *an ex FFA member and Vocational Agriculture Student* at Agua Dulce High School, who received the coveted American Farmer Degree in 1962; has this to say about the Agriculture Education program. "The Vocational Agriculture class gives a person a chance to use his own mind in making decisions. These decisions will fit into your own values for later life. The education received in class and shop has helped me very much in my occupation of farming some 2800 acres of crops, and in maintaining or repairing the tractors and equipment necessary for farming."

Tommy Ermis is an active member of our Young Farmer Chapter, having been the President of it last year, he said it has a definite place in our community. . .

It can be said that Vocational Agriculture, the FFA Chapter, and the Young Farmer Chapter have always been an important phase of education.

I think it is becoming increasingly evident that agriculture is becoming more and more important in this country, and gives the United States strength in coping with problems of this world. ◆◆◆

Teaching And Leadership Influence Use Of Time

Roy D. Dillon
Professor, Agricultural Education
University of Nebraska-Lincoln

In a recent study of use of teacher time, forty Nebraska vocational agriculture teachers recorded the use of their time for one year. The time was recorded in twenty-seven duty categories. Comparisons were made to determine whether selected factors made a difference in how agriculture teachers used their time.

Did years of teaching experience make a difference?

Table 1 shows the distribution of the forty teachers in the study into five different groups, based on years of teaching experience. The comparison test showed no significant differences among the five groups in average hours worked per month. However, there were significant differences found in three of the twenty-seven duty categories studied. Teachers in groups 2 and 5 had a significantly higher average hours per month in advising and supervising FFA activities compared to those in the other groups. Second, teachers in groups 1 and 2 devoted significantly higher average hours per month to budgeting, requisitioning and inventorying. Third, teachers in group 5 recorded a significantly higher average hours per month to community activities and responsibilities compared to all other groups.

Did holding an office in a state, regional, or national professional association make a difference?

Table 2 shows that ten of the forty teachers were officers in state, regional, or national professional organizations. The comparison test showed that teachers who were officers in professional associations worked a significantly greater number of hours per month compared to teachers who were not officers. In addition, teachers who were professional association officers devoted a significantly higher average hours per month to (1) teaching day agriculture classes, (2) conducting student conferences, and (3) participating in state and national professional organizations.

TABLE 1

AVERAGE HOURS WORKED PER MONTH BY FORTY NEBRASKA VOCATIONAL AGRICULTURE TEACHERS BY YEARS OF TEACHING EXPERIENCE

Group	Years of Experience	Number of Teachers	Average Hours Per Month
1	1-5	26	220
2	6-10	7	254
3	11-15	2	228
4	21-25	2	209
5	26 or more	3	280
	TOTAL	40	

Did teaching in a multi-teacher department make a difference?

Shown in Table 3 is the distribution of the forty teachers in the study into single or two-teacher departments. The comparison test showed no significant difference in average hours worked per month between the two groups. The comparison tests did show, however, that teachers in two-teacher departments spent a significantly higher average hours per month teaching non-agriculture day classes. Second, teachers in single teacher departments devoted a significantly higher average hours per month to advising and supervising FFA activities.

Did it make a difference if an agriculture teacher held a part-time job?

Table 4 shows that ten of the forty teachers indicated they held a part-time job during the school year or during the summer in 1975-76. The comparison test showed there was a significant difference between the two groups, with the thirty teachers who did not hold part-time jobs having a higher average hours worked per month. In addition, there were significant differences shown in four of the twenty-seven

TABLE 2

AVERAGE HOURS WORKED PER MONTH BY FORTY NEBRASKA VOCATIONAL AGRICULTURE TEACHERS BASED ON OFFICERSHIP IN STATE, REGIONAL OR NATIONAL PROFESSIONAL ASSOCIATION

Officer in Professional Association	Number of Teachers	Average Hours Per Month
yes	10	252[a]
no	30	210
TOTAL	40	

a. Significant at .05 level.

TABLE 3

AVERAGE HOURS WORKED PER MONTH BY FORTY NEBRASKA VOCATIONAL AGRICULTURE TEACHERS IN SINGLE AND TWO-TEACHER DEPARTMENTS

Type of Department	Number of Teachers	Mean Hours Worked Per Month
Single-Teacher	28	227
Two-Teacher	12	205
TOTAL	40	

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CONTINUED

TABLE 4

A COMPARISON OF MEAN HOURS WORKED PER MONTH BY FORTY NEBRASKA VOCATIONAL AGRICULTURE TEACHERS BASED ON WHETHER PART-TIME JOB WAS HELD

Hold Part-Time Job	Number of Teachers	Mean Hours Worked Per Month
Yes	10	178
No	30	235[a]
TOTAL	40	

a. Significant at .05 level

duty categories. Teachers who did not hold part-time jobs devoted significantly higher average hours per month toward (1) advising and supervising FFA activities, (2) supervising occupational experience programs, (3) scheduling and upkeep of facilities, and (4) completing award applications.

Did the per cent vocational agriculture time make a difference?

Teachers were categorized into five study groups by per cent reimbursable vocational agriculture time in the program, based on State Department of Education records. This distribution is shown in Table 5.

TABLE 5

AVERAGE HOURS WORKED PER MONTH BY FORTY NEBRASKA VOCATIONAL AGRICULTURE TEACHERS BASED ON PER CENT VOCATIONAL AGRICULTURE TIME

Group	Per Cent Vo-Ag Time	Number of Teachers	Mean Hours Per Month
1	50-70	10	205
2	71-80	3	194
3	81-90	10	211
4	91-99	3	239
5	100	14	228

There were no significant differences among the five groups in average hours worked per month. However, in three of the twenty-seven duty category tests, differences were shown. Teachers in groups 4 and 5 had a significantly greater number of hours per month in teaching day agriculture classes than all other groups. Second, teachers in groups 4 and 5 devoted a significantly greater number of hours per month to planning and conducting young farmer classes than all other groups. Third, teachers in groups 1, 2, and 3 spent a significantly greater number of hours per month supervising study halls than teachers in groups 4 and 5

Summary

Years of teaching experience showed a significant influence on use of vocational agriculture teacher time in three specific duty categories; (1) teachers with 6-10 and 26 or more years teaching experience devoted significantly greater hours per month to advising and supervising FFA activities, (2) teachers with 1-10 years of teaching experience devoted significantly greater hours per month to budgeting, requisitioning and inventorying, and (3) teachers with 26 or more years teaching experience had significantly greater hours per month in community activities and responsibilities.

Teachers who were officers in professional associations worked significantly greater number of total hours per month compared to those who were not officers. In addition, those who were professional association officers devoted a significantly greater number of hours per month to (1) teaching day agriculture classes, (2) conducting student conferences, and (3) participating in state and national professional organizations.

Teaching in a two teacher department showed no advantage in average hours worked per month, compared to teaching in a single teacher department. However, teachers in two teacher departments spent a significantly greater number of hours per month teaching non-agriculture day classes, while teachers in single teacher departments spent a significantly greater number of hours per month advising and supervising FFA activities.

Teachers who did not hold a part-time job worked a significantly greater number of hours per month compared to teachers who held part-time jobs. In addition, teachers who did not hold part-time jobs devoted significantly greater hours per month to advising and supervising FFA activities, supervising occupational experience programs, scheduling and upkeep of facilities, and in completing award applications.

Teachers who had 91 per cent or higher vocational agriculture time had a significantly greater number of hours per month teaching day agriculture classes, and to planning and conducting young farmer classes, compared to teachers with a lesser per cent vocational agriculture time. Teachers with less than 91 per cent vocational agriculture time spent a significantly greater number of hours per month supervising study halls compared to teachers with 91 per cent or higher vocational agriculture time. ◆◆◆

*Published as Paper No. 5196, Journal Series, Nebraska Agricultural Experiment Station. See related article in November, 1976 issue.

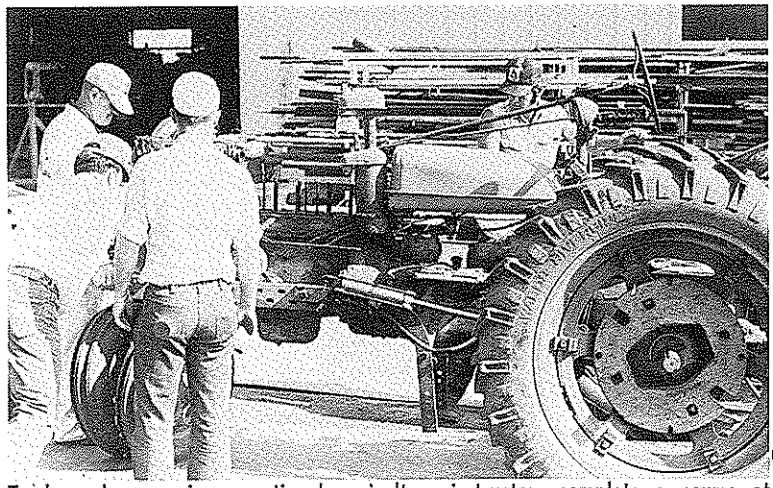
STORIES IN PICTURES

by Paul W. Newlin

Winner of the Oklahoma Plant Food Educational Society crop, soils and fertilizer contest is Phil Berkenbile, center, vocational agriculture teacher and FFA advisor at Morrison, Okla. Berkenbile won a $150 award at the state meeting in Oklahoma City. Left to right are: Lisa Downey, sophomore at Morrison; Herman Frank, owner of the Morrison test plot; Berkenbile; David Nulle, president of the Morrison FFA chapter; and David Hildebrandt, Morrison fertilizer dealer and member of the Morrison Young Farmers. (Photo by Paul W. Newlin)

GEORGE WALKER IS HONORED — Professor George M. Walker (left) of the Department of Agricultural and Extension Education at Mississippi State University was honored with a special cake for 20 years of service as a teacher educator in agricultural mechanics. Making the presentation for the faculty is John W. Oren (right), Department Head. Professor Walker is well known throughout the country for his work in agricultural mechanics education. (Photo by Jasper S. Lee)

Veteran vocational agriculture instructor Paul Evans, Perkins Future Farmers of America advisor, works with a meats judging team prior to the national FFA judging contest in Kansas City. Evans has had seven, state-winning teams to the national finals in the past 16 years. Members of the team are: Winfrey Kinzie, Cindy Chesney, Tammy Lore and Jeff Brown. (Photo by Don Hardin)



To keep 'em running vocational agriculture instructors complete a course at Oklahoma State University on tractor overhaul. Prof. George Cook taught the course with the help of graduate assistants. Members of the course rebuilt two tractors from three. (Photo by Paul W. Newlin)