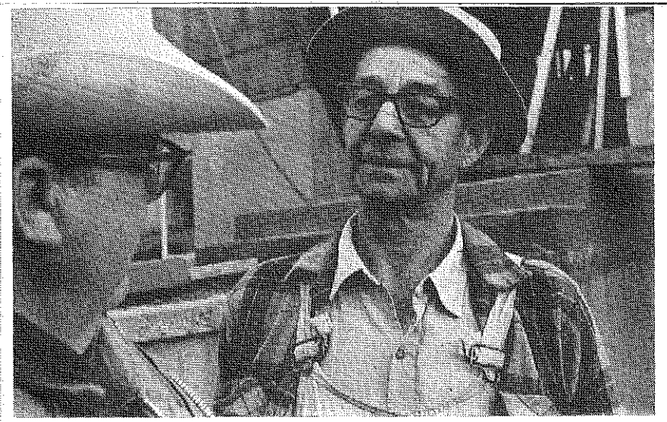
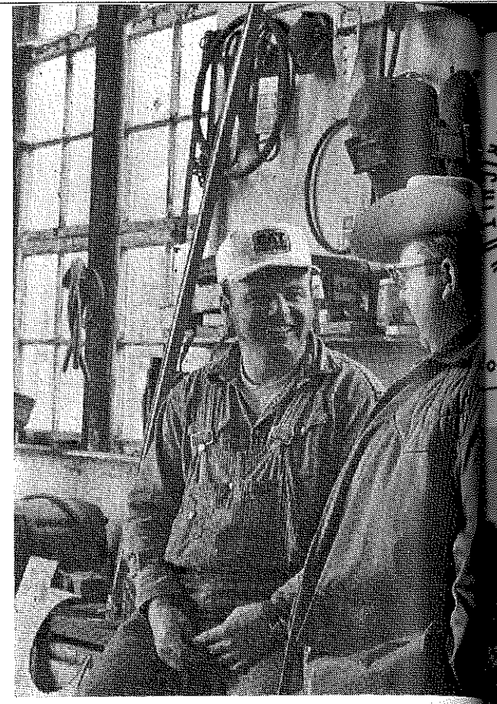
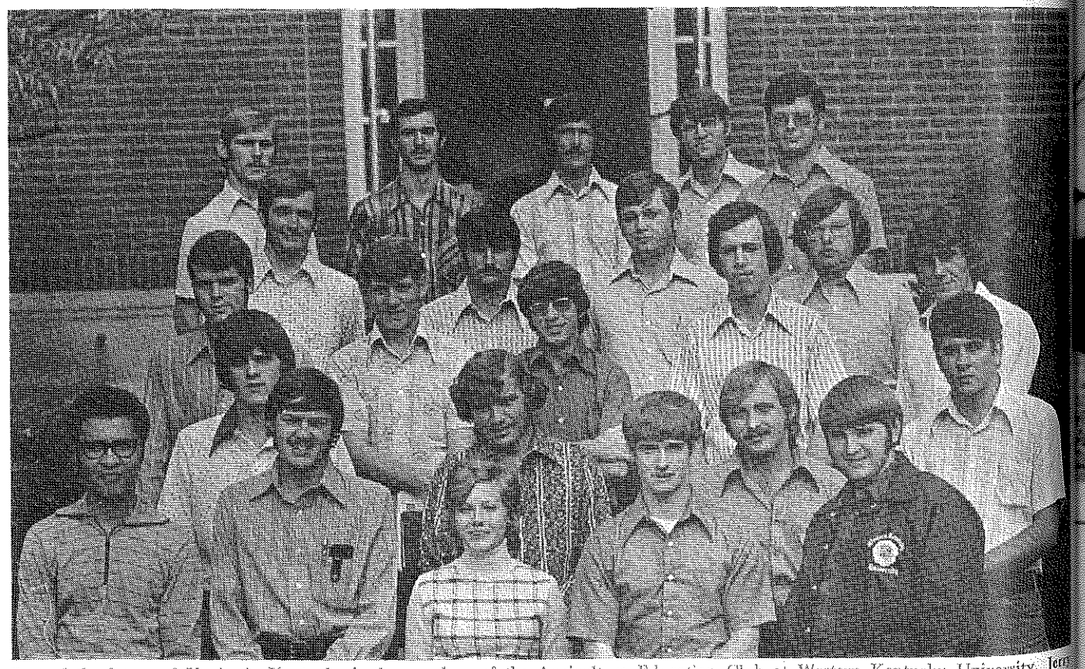




The future of vocational agriculture must include satisfied customers. The pace is set by many career vocational agriculture teachers. Marv Evers (foreground) instructor for 27 years at Dayton, Washington is an excellent example. Satisfied customer, (right) Jay Penner, class of '64, took first place in ag-mechanics in State competition. He now farms with his dad and brother. "We call on Marv all the time," says Jay, who takes care of all the machinery on the family wheat farm. (Photo from Alex Crewdson, Coordinating Council for Occupational Education, Olympia, Washington)

Stories in Pictures

by Richard Douglass



Part of the future of Vo-Ag in Kentucky is the members of the Agriculture Education Club at Western Kentucky University. Jerry McGill is President. This picture includes veterans, a brother of a Virginia teacher, son of an Ag teacher, the 1972 FFA Public Speaking winner and others. (Photo from James E. McGuire, Teacher Educator)

Agricultural Education

April, 1974 — Number 10

Volume 46

Theme—PRODUCTION AGRICULTURE: Still In Vogue

The
Agricultural Education
Magazine

EDPRESS Vol. 46 April, 1974 No. 10

TABLE OF CONTENTS

This publication is the monthly professional journal of agricultural education. The journal is published by THE AGRICULTURAL EDUCATION MAGAZINE, INC., and is printed at the Lawhead Press, Inc., 900 East State Street, Athens, Ohio 45701.

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COVER PHOTO:

Gene Foy, a vocational agriculture student at Mt. Hermon High School (La.), proudly displays the first off-spring from his herd of beef animals purchased through the FHA Youth Loan Program. Observing are (left to right) Hugh Russell Fortenberry, Vocational Agriculture teacher at Mt. Hermon High School; Robert Jones, FHA County Supervisory; Mack Hurst, Assistant FHA County Supervisor; and Anthony Triola Principal, Mt. Hermon High School. (Photo from J. C. Simmons, Area Supervisor, Louisiana)

Editorials

From Your Editor . . . IS THE YFA FOR OFF-FARM TOO?

Martin B. McMillion

When serious consideration is given to the question of desirability of a counterpart to the young farm association (YFA) in off-farm agriculture, will the deliberations and decisions be similar to those made concerning the FFA? In the case of the FFA, separate organizations did not emerge, the name was not changed, but the organization changed — is evolving — to better serve students with other-than-farming agricultural interests.

A Multi-clientele Organization. There are *factors* which *do* and *do not* support beliefs that the decisions made concerning FFA will be the same for the YFA. Factors which *do* support the likelihood of similar decisions for a multi-clientele organization are: 1) a large core of subject matter which is common to both groups, 2) low course enrollments can be increased by branching out, and 3) many young farmers are both farmers and off-farm agribusinessmen.

If both on-farm and off-farm agriculturalists can benefit from studying about crop varieties, pesticides, herbicides, feeds, business management, mechanical operations, etc.; they should be in the same course. If they are in the same course, they should be in the same organization — the YFA.

Part-time farmers are frequently employed in agricultural occupations off of the farm; thus the YFA serves two kinds of clientele in a single person. Your editor recently served as an ex-officio member of the Young Farmers of Virginia officer nominating committee on which two out of six members were both farmers and off-farm agribusinessmen. One was a feed dealer and the other was a machinery dealer.

A Single-clientele Organization. Factors which tend to support the likelihood that off-farm agribusinessmen would not be a part of the YFA (would differ from the FFA decisions) are: 1) Young farmers view the off-farm agricultural business primarily as a sponsor of contests, educational programs, and activities rather than potential fellow members, and 2) pressure "from the top" to mix the clientele is less. The pressure is less for the following reasons: a) the YFA is not dependent upon a national foundation as is the FFA for its awards, b) the YFA is not provided for or controlled by Federal legislation, c) the YFA is not a national organization. d) Young farmer associations are not organized in all of the states, and e) in states that have associations, some local clubs remain unaffiliated.

The organizational superstructure of the FFA, its long traditions, the FFA Foundation, and Public Law 740 made thoughts of a separate club for off-farm agriculture in high school senseless. Although the YFA will be less influenced than was the FFA, the outcome — a multi-clientele organization — should and will be the same.

In fact, a mixture of farm and off-farm agriculturalists, both self-employed and employees are already attending

(Concluded on next page)

Guest Editorial . . . OUR TEACHING—STILL IN VOGUE FOR PRODUCTION AGRICULTURE

Max L. Amberson, Head
Agricultural and Industrial Education
Montana State University, Bozeman

Max L. Amberson

Production agriculture is not only still in vogue, but continues to be a vital force not solely in the direct production of food for the American family but in its outreach in terms of its economic impetus, both nationally and internationally. It is a catalyst of major proportions.

It would perhaps be more accurate to say that agricultural production has a *new* vogue. This new vogue was aptly described in an address by Don Paarlberg, Director of Agricultural Economics, USDA. He remarked that the agricultural knowledge which an up-to-date farmer must master to run his business is much broader than the knowledge required of most businessmen with equal investment. The capital needed to operate a modern farm seems monumental to most farm-raised youth. It is becoming increasingly difficult to combine in one man the financial resources, the technical knowledge and the managerial ability needed to operate a modern farm. Nor do we generally find in one man or in one small producing unit the vision and the capability needed to meet the marketing opportunities provided by modern mass merchandising.

Managerial innovators have developed a far-reaching technique. Instead of simply accepting what the economists call "the factors of production" (land, labor, capital and management) as they happen to be combined in one man — the family farm operator — the new concept is to split up the factors of production and re-combine them in optimum form. There is nothing really new about this. Non-farm

(Continued on next page)

From the Editor . . .

young farmer classes and participating in local association activities in Virginia and other states. Young farmers like the arrangement because: 1) they think the businessman should be keeping current to better advise all farmers, 2) the farmers get a chance to talk about some things with the off-farm agribusinessmen during and after classes which they would otherwise have to do during the day at the business when time is limited for both, and 3) resource people from firms represented are more accessible.

The off-farm agribusinessmen like the arrangement because: 1) they can learn more about the problems of customers and of potential customers and be better able to help them. 2) they can gain technical information and skills which help them do their job more easily and efficiently, and 3) they can make contacts and accomplish some things informally which otherwise would have to be done during the busy workday.

Those of us who are committed to education for young farmers should also be committed to education of the off-farm counterparts. Both must be served. They will be served mostly in multi-clientele courses and therefore in a multi-clientele organization. That is primarily the way it will be and primarily the way it should be.

—MBM

Guest Editorial . . .

businessmen have been doing it for a long time. But its application to agriculture on a wide scale is relatively new. The economic efficiency latent in this organizational change is, in certain cases, very great indeed. Managerial ability can be recruited and trained and given responsibility not just for a small unit but for a large one. Capital can be brought in from the outside, not in conventionally sized chunks but in aggregations suited to the capability of the managerial concept. Farms can be consolidated or operated as associated units making maximum use of new mechanical equipment and managerial techniques. Production can be scheduled as to quanity, grade and time. Markets can be organized, developed and managed. Labor can be hired and given certain well specified tasks to perform as in factory labor. The organizational farm can be corporate, cooperative, partnerships or sole proprietorship.

The major factors that distinguish the new emerging farms in agriculture are:

1. Large scale instead of small scale operations.
2. The breakup of the old combination of land, labo capital and management as these were found in single individual and their optimum recombinatio with management in the key role.
3. The gradual elimination of the old distinctions be tween production, marketing, processing and distri bution.

The nature of the food problem per se, has also bee altered from several years ago when surpluses, storage prob lems and deferments constituted the concerns of the agr cultural industry. Presently, the nation's attention has bee focused on the rapid increases in food prices and the scarci of certain commodities. This subject has received much pres coverage. Thus, the necessity of production agriculture be comes apparent. It is said that half of the world cannot ha enough to eat. In this respect, Americans cannot only l philanthropists or humanists but production agriculture an its related and dependent industries are the best hop to bolster the U.S. dollar.

The Montana Agricultural Manpower Project under taken in 1971 by the Department of Agricultural and In dustrial Education (Montana State University, Bozeman Montana 59715) revealed interesting findings as the resu of contacting 4,000 Montana agricultural producers. Th study disclosed the need for less part-time or seasonal hel and the need for additional full-time, more highly skille employees. The reason given for both of these changes wa increased mechanization, requiring fewer seasonal helpe and demanding advanced skills for those whose employme was more permanent. Difficulties in hiring qualified per sonnel were the result of the inability of farm wages t compete with wages in other industries. The low salarie ranging from $100/month to the mode of $400 to $440 month was a definite deterrent to satisfactory hiring pra tices, permanence of personnel and a competitive positio in the labor market. It was however, determined that thre percent of the full-time agricultural employees receive $1000 or more per month. These and other findings can b projected to accurately assess the national situation.

It has been the traditional objective and role of voca tional education to prepare people for potential employ ment. With the changing agricultural trends, the nation mu keep pace with the demands for skilled and competent em ployees. Educators are often accused of impracticality an lack of realism in the design of their programs of agricu tural education especially at the high school level. The nee to provide realistic, job-oriented programs in agricultur

(Guest Editorial concluded next page)

Themes For Future Issues

May —	**Summer Accountability**	**September —**	**School Organization and Articulation**
June —	**Administration and Supervision — Local to National**	**October —**	**Instructional Technology**
July —	**Program Planning and Evaluation**	**November —**	**Improving the Profession — the Job and the Teacher**
August —	**Teacher Education**	**December —**	**Better Teaching and Learning**

STATE SUPERVISOR'S ROLE IN YOUNG FARMER ASSOCIATIONS

Richard L. Hummel
Area Supervisor and Executive Vice President and Treasurer
Ohio Young Farmers Association
Columbus

R. L. Hummel

Young farmers today are participating in one of the great movements of our time — the development of an expanding agriculture to serve the needs of a world at peace.

These are times heavy with the air of promise. These are times when the young in spirit must bypass those who say "it can't be done" and show the world that American ingenuity, American business skills and American determination to succeed are still a vital and determining force in world affairs. The young farmers I work with, I believe, are leaders in a generation destined to carry out this responsibility.

Local and state associations of young farmers should be an organization of young men who are engaged in the business of farming and who participate in the local Young Farmer continuing education program. These programs must be conducted as a part of the Agricultural Education program in the public schools, technical institutes and community colleges with the state departments of education providing the administrative structure, leadership, and some financial assistance. As an organization, the main purpose must be to improve the economic and social position of young families in each state through a sound educational program in agriculture. Other specific purposes I have acquired from supervisors and teachers in states with active local and state organizations include:

1. To assist young farmers to improve their farms, their homes and family life through an organized educational program.
2. To develop a greater appreciation of the opportunities in farming as a vocation.
3. To secure and utilize the resources and services available to farmers in improving their economic status and social and family relations.

(Guest Editorial concluded)

production at all levels provides an important challenge for agricultural educators. To meet the needs, programs must be innovative and properly planned. To be successful, programs must involve producers in the planning stages especially if employees are to enter the world of work and hold an advantage for entry and advancement over persons employed who do not possess training in agriculture.

The assessment of the agricultural manpower needs in our state attests to the fact that much remains to be accomplished. Public sentiment should make the work of agricultural educators easier in the years ahead as the country's attitude towards agricultural production has changed from one of indifference to one of keen interest. ◆◆◆

One or more state staff members should assume the role of serving as the executive secretary of the state association of young farmers.

4. To cooperate with other agricultural and civic agencies and organization to provide for a more unified agriculture economy.
5. To develop the leadership and citizenship abilities needed to participate in local and state activities.
6. To provide wholesome social and recreational activities.
7. To plan and render worthwhile community service.

The local Young Farmers Association must be involved in arranging for technical agriculture courses, programs, or seminars in farm business analysis or technical agriculture subjects.

If the young farmer educational program is to be a part of a dynamic total program of Agricultural Education at the local and state level, the state supervisory staff must assume the role of providing leadership to these programs by performing the following specific responsibilities:

1. Provide teacher education institutions assistance with the pre-service and in-service training program for teachers to develop the skills and competencies essential to providing and conducting young farmer programs in their communities. Student teacher experiences should be provided in a training center where an organized young farmer program is being conducted.
2. Provide the local school administration with information and guidelines for organizing this phase of the continuing education program. This would include teacher load, reimbursement patterns, length of programs, facilities and equipment necessary and other details of providing the instructional program.
3. Provide assistance to the local teachers of vocational agriculture or special instructors who conduct the program in the form of methods of teaching young farmer classes, technical helps, resource materials and other teaching aids that will help the local teacher provide a program that meets the needs of young farmers.
4. Coordinate the state association program and its activities so that its goals and objectives are accomplished. One or more state staff members should assume the role of serving as the executive secretary or treasurer of the state association. The duties of the

(Concluded on page 235)

Using A School Farm

James L. Hammer
Agriculture Education Teacher
Franklin, Kentucky

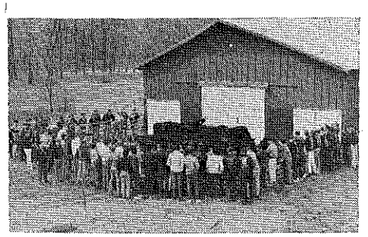
A move which changed the outlook of the FFA at Franklin-Simpson High School in Franklin, Kentucky was the purchase of a seventy acre farm by the board of education adjacent to the school in 1968. The local board stated that "it is for your use to strengthen your department." This was a new challenge. How should we use the farm to aid in our teaching program and to earn funds for the chapter treasurery was the question. The best way to do so was discussed sharply by the advisors and members.

The land area included two livestock barns, one tobacco barn, two ponds, and approximately five acres of native trees. The topography of the farm is very level and clearly visible from the school campus.

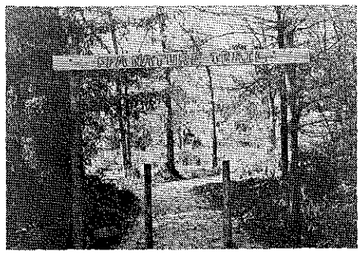
After we made our decision, the first move was a cooperative one with the Mammoth Cave Production Credit Association to experiment with some crossbreeding. Twenty crossed Angus and Holstein heifers were bred to a Charolais bull. All calves were sold at approximately 550-600 pounds. After a period of three years we have only lost one calf and the project has been a very successful one. Experiences gained by the students include: vaccination for disease prevention, parasite control, dehorning, insect control, castrations, and many other minor experiences in handling cattle.

Class members have also had experiences in renovating fifty acres of pasture land. The Senior Class wired the stock barn for electricity. The Sophomore Class installed plumbing in the livestock barn, made fence repairs, stocked one of the ponds with channel catfish; and each year for three years we have worked hard cutting, stacking, and storing hay for winter feed.

We have also had experiences in the production of 1,400 pounds of burley tobacco each year; four-tenths of an acre of dark, air-cured tobacco; and the seeding and harvesting of mustard and turnip greens. The greens were c by FFA members who were excuse from study halls, and they were sol on local produce counters.



FFA members at Franklin-Simpson H.S. and their Angus-Holstein heifers are pictured. The Senior Class wired the stock barn for electricity and the Sophomore Class installed plumbing.



The most recent project on the school farm has been the development of an FFA Nature Trail.

The Vocational Amendments of 19 provided funds for disadvantaged stu dents which were used to rent a ne seventy horsepower tractor for th operation of the farm and also to teac safety and proper use and maintenanc of a modern tractor. The chapter al owns a small Ferguson tractor. Th Cooperation Committee has worke closely with other organizations i school and has developed a footba practice field and a marching field f the school's one hundred piece band These two fields have been complete plowed, leveled, and seeded. Both fiel were originally a part of the cow pa ture.

The most recent project on the far has been the development of an FF Nature Trail. The trail was constructe through a dense area of shrubs an undergrowth which was so thick norm walking was prohibited before the tra was cut. Most of Kentucky's nativ birds, wildlife, and reptiles are foun in this section of the farm. Bird feeder and wildlife feeders are presently be ing erected to attract more wildlife t this area. The graveled trail is open t all high school students and to th public. It is approximately one hundre yards from the high school building Picnic tables and rest areas are alon the trail. All Future Farmers at Fran lin-Simpson are proud of the FF farm. It has attracted the attention o urban students who have not had chance to study and learn of th sciences of farming. It also has provid ed students who are economically di advantaged an opportunity to have productive enterprise program. Th farm has been especially good for th students who have a good program o their home farm. They play the role a model student and become more pro ficient in farming work at school. ◆◆◆

LET'S NOT FORGET THE VO-AG STUDENTS WHO WANT TO FARM

Marlin R. Berg
Vo-Ag Instructor
Pipestone, Minnesota

Marlin R. Berg

In recent years the trend in Vocational Agriculture has been to expand the agribusiness curriculum and to develop career exploration. One reason for this has been the declining number of farmers and farm laborers. Agribusiness occupations on the other hand have been increasing both in number and importance. Vocational agriculture has adjusted well to this by changing its curriculum to prepare students for these non-farm occupations.

While all the talk about agribusiness goes on, farming is by far the largest industry in most rural communities. The agribusiness industries are important, but they are very definitely secondary to farming. Most of the literature and the topics discussed at Vo-Ag conferences and meetings, center around the areas of agribusiness and not production agriculture. Is it any wonder then that recent graduates in agriculture education believe that agribusiness is the heart of the Vo-Ag curriculum and that production agriculture must be fitted in as time permits. There is a danger here if we design our Vo-Ag curriculum primarily for students who want to enter into agribusiness. Their skills will be useless if there are not enough farmers to patronize the agribusiness world. We must be careful not to put the cart before the horse.

If we are really concerned about career education, maybe we had better take a good look at the needs of our community. What are the opportunities in our community for vocational agriculture graduates? Let me share our experience in Pipestone, Minnesota. Pipestone is a town of approximately 5,000 people in the center of a large rural area. Pipestone has an industrial park with several non-agricultural industries. It also has a large trade area for agricultural goods and services. Farming is Pipestone's largest industry. A recent survey of graduates since 1965 shows us what job opportunities Pipestone Vo-Ag graduates are pursuing today. Where are they employed or located? Forty-five percent of them are presently farming or are working on farms. Sixteen percent are employed in agriculturally related occupations such as implement dealerships, grain elevators and Vo-Ag instructors. Twenty-two percent of the former students are enrolled in vocational schools or colleges pursuing an occupation in agriculture. Some of these students will farm, the rest will find a place in the world of agribusiness. Four percent are in the military, three percent are in colleges not majoring in agriculture, six percent are employed in non-agricultural occupations and four percent could not be located.

What about Career Education? Around what should our Vo-Ag curriculum be centered — production agriculture or agribusiness? The answer is easy, both; but the common denominator for both types of student is production agriculture. Surely production agriculture has to be and is the most important ingredient of our Vo-Ag curriculum. This is true not only because we are preparing 45 percent of our students for their chosen vocation, but also because basic production agriculture is a very important ingredient in the background of the 38 percent who will enter into agribusiness.

This means that the production agriculture curriculum will serve 83 percent of our Vo-Ag students. Our Vo-Ag curriculum must also include some specialized training in agribusiness. The primary part of the curriculum, however, has to be based on production agriculture: livestock production, crop production, farm management and records, and agricultural mechanics. These areas should be the heart of the Vo-Ag curriculum in rural areas and should be supplemented by courses such as Natural Resources, Forestry, Agriculture Occupations and Placement.

What better way could you help a student become a successful feed salesman than by teaching him the fundamentals of nutrition and the skill of balancing a ration? The knowledge obtained about chemical selection and rate of application is going to help the student who will later work in a fertilizer or chemical business as well as the student who farms. Livestock and crop evaluation will be important to the livestock or grain buyer as well as the farmer. Farm building selection and construction is going to be valuable to the lumberyard worker as well as a farmer. Production agriculture is a part of all agribusiness and the two cannot be completely separated.

Emphasis on production agriculture is not for all Vo-Ag departments just as agribusiness is not for all Vo-Ag departments. Production agricuture as taught in S.W. Minnesota would be meaningless in a large metropolitan area just as most of the agribusiness taught in the metropolitan area would have little value in S.W. Minnesota.

Let's remember then that production agriculture is a very important ingredient in our Vo-Ag curriculum and that in most rural communities it is the most important part of the curriculum. Let's not change our whole program because we think we need new ideas to save vocational agriculture. If the new ideas do not serve the needs of our community, they could be the very thing that destroys our Vo-Ag department.

Let's hear it for production agriculture! Our future depends on farmers! ◆◆◆

PRODUCTION GOALS PROCESS: Means And End

Gary W. Leske
Teacher Education
University of Minnesota

Gary Leske

To remain educationally accountable, agriculture instructors must use production enterprises whenever they are available.

"Tell me the kind of supervised farming programs pupils have and I will tell you the kind of teacher of vocational agriculture you have."[1] This principle was seldom questioned prior to 1963. Today, it appears to be in danger of extinction in certain areas. Part of the problem may be the negative FFAer's (Fear Farming Advocates), but a more defensible explanation may be the problem of priorities. How does a teacher use his available time most effectively in assisting his students. This raises the issue of which educational objectives are central.

I submit that a major objective, if not the primary one, for any educational program is to help students learn to THINK. You may prefer the terms "make decisions" or "manage."

Supervised Farming Programs are still a very viable occupational experience program. The production enterprise as a component of this program has a tremendous teaching potential, that is unequaled in facilitating the development of decision making ability.

To remain educationally accountable, vocational agribusiness instructors must use supervised farming programs, particularly production enterprises, whenever they are available.

Existance of the production enterprise and monetary profits alone should not allow an instructor to conclude total success. Interest in what students learn forces one to look beyond these to other purposes. The production goals process is one means of maximizing the teaching function of the production enterprises.

The first step in the production goals process occurs during the planning of the individual production enterprises. The student must identify efficiency factors and standards that are appropriate for his/her enterprise or enterprises. Indirectly, this is the first consideration of the variety of alternative management practices which will be supportive of a proficient production enterprise. To complete this step the student lists the efficiency factors which are appropriate for each of his/her production enterprises using an appropriate form. See Figure 1.

The second step is identifying state, area, and local efficiency standards for the various enterprises. Locally useful standards are best established during class study of the problems associated with each of the common enterprises and through the individual study of less common enterprises. Standards a sist individual students in determini their goals for selected efficiency fa tors.

The third step is to establish and re cord individual production goals. Th standards identified in step two a alternatives which assist students i determining their goals. In the four step, the student records planned ma agement practices. The fifth step student accumulation of the appropr ate data to determine achievement. I the enterprise record book does no provide the necessary information, th student and instructor should establi a procedure to secure the needed info mation. Student reports include tho management practices used.

The sixth step is to compare ind vidual production achievements to i dividual production goals. Student an student-teacher evaluation processes a crucial. They tie the process togethe

The ends and values of this mean which is the goal setting process, a numerous. The student develops h own objectives for his supervised o cupational experience program.

Students see value in the study an use of management practices. Goals a

FIGURE 1
PLANNING OF INDIVIDUAL PRODUCTION GOALS

Student_____ Enterprise_____

Date Started_____ Scope or Size_____

Efficiency Factors	Efficiency Standards			Student Goal	Student Achieveme
	Superior	Average	Local		

Factors considered in planning the above student goals. List proposed manage ment practices, special limitations and so on.

Conclusions. Evaluate practices and circumstances which influence the actu level of achievement.

(Concluded on next pag

1. Phipps, Lloyd J. and Cook, Glen Charles, *Handbook on Teaching Vocational Agriculture* (6th edition revised; Danville: The Interstate, 1956), p. 259.

PRODUCTION AGRICULTURE!-- *Bright Future Ahead*

Lloyd E. Barnett
Agriculture Teacher
Morland, Kansas

L. E. Barnett

One thing the American Farmer knows is "it takes a mile of effort to make an inch of progress."

The farmer of the past has known long hours of hard labor and the empty pocket feeling of small returns. Many times he has sold his product for what appeared to many people to be a good income; but when figured out on an hourly wage scale, the time spent in production proved to be meager indeed. Because of the small return on investment many have left the land to go into some other occupation.

In the years 1971 and 1972, this movement from the land began to slow down and became more stable. In 1973 according to USDA, this movement became completely stable with the same number of farms at the end of the year as we started with. Perhaps the pendulum is on its way back.

While farms were declining in numbers, we are all aware of the increase in the size of farms. With this increase in size, the responsibility of producing for the multitude rests on the shoulders of the fewer, yet larger and more efficient farms.

The average age of those remaining on the farm increased each year until recently when more and more young people have begun to establish themselves in a partnership or have taken a big plunge into the financial depths and are now "slugging it out" on the land.

At the same time when more young people are returning to the land and using larger more efficient means of producing, the world population is increasing at an even more rapid pace. This results in a need for more food, clothing and other commodities. A greater demand is made upon the farmer to produce more efficiently.

In 1973, the future of the farmer suddenly became shrouded in a new light appearing over the horizon. Prices on his commodities began to take an upswing. He found himself in an encouraging position. However, the light shortly began to dim as the prices of supplies and services required to produce the farmer's wares also turned upward.

This causes a stir among the consuming public as well. Housewives boycotted the meat market causing the slaughter houses cut back and shut down. A ceiling was placed on various slaughter animals and eventually the price paid for the live animal went down.

Grain prices also took an upswing reaching prices unheard of before. The large exports made by the United States lowered the level of commodity reserves. Though prices have dropped from those highs they still remain higher than before and serve as an encouragement to continue and even expand production.

Even with the fuel crisis which we now find ourselves, there is still hope. Though these shortages will undoubtedly cause a cutback, it will also cause evaluation of present farming conditions. Better management or our resources and more efficient production methods will need to be developed and implemented. In addition, many of the synthetics produced from petroleum products which science and technology have developed to replace the raw materials and fibers produced by agriculture will undoubtedly become in short supply. This slack will once again need to be picked up by the American farmer.

Though it appears on the surface that everything is working against the American farmer, I believe he has a bright future and that this can be a blessing in disguise. It will not be a bed of roses nor will it be a brier patch. He has never had anything easy. He has a history of making progress out of adversity. He has always come through and I believe he will again. ◆◆◆

(Leske—from page 224)

problems and management practices are the tools applied in solving these problems. Problem solving activities in class and individual study focus on how management practices affect results. The good supervised farming program demands the use of good management practices.

Analysis of each enterprise is given a purpose. Students want to see if their goals have been achieved. They see what their records reveal about their application of management practices. They see why records should be accurately kept.

Student evaluation criteria: goals, management practices, records, record analyses and self-evaluation reports are identified. These criteria establish a system of evaluation which samples the behavior within the production goals process.

The production goals process is a means to various educational ends, but more important, the process is a desirable end in itself. Students learn to set goals, check progress and evaluate —A Means and End. ◆◆◆

THE MS. FARMERS: An Adult Class For Farm Women

Brenda Oldfield

Brenda Oldfield
Student Teacher
University of Kentucky

and

Jack Wise
Vo-Ag Instructor
George Rogers Clark High School
Winchester, Kentucky

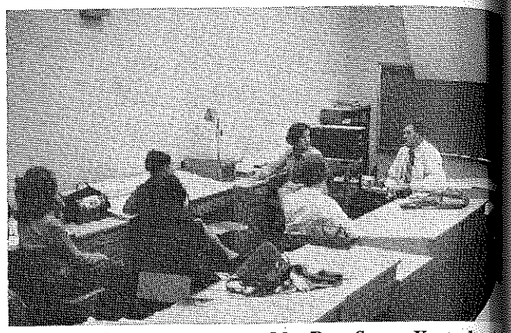
Jack Wise

Can an adult vocational agriculture program for farm ladies be successfully organized and conducted in a rural community? This question has been partially answered in Clark County, Kentucky, where a class was recently started for farm ladies. Some considerations which went into organizing the class were:

1. Farm women are often responsible for the home gardens, lawns, flowers, trees, and shrubbery; therefore, they might enjoy studying different phases of these areas.
2. Farm women may be interested in learning about outdoor cookery.
3. Farm women have a need to learn more about keeping farm records and how to keep and file these records for income taxes.
4. Farm women may also like to learn first aid that is needed for different types of farm and home accidents.
5. Farm women enjoy socializing with other farm women and having the chance to get away from the house occasionally.
6. Successful classes of this nature have been held in Illinois[1], and a class for farm women has been conducted for several years at Munfordville, Kentucky.

After considering all aspects, the following sequence was used in organizing the class in Winchester:

1. The authors conferred together and with the President of the local Young Farmer Association and teacher educators from the University of Kentucky on the best procedure to use.
2. An announcement of a planning meeting for a class for farm women was sent to all Young Farmer class members in the county.
3. Ten women attended the organizational meeting and helped to plan the objectives and course of study. (Total enrollment was fifteen.)
4. Meetings were announced via radio and the local newspaper.
5. Weekly meetings were set up in which the following topics were planned: farm record keeping, landscaping the farm home, flower growing and arranging, home gardening, first aid for farm and home, and buying and selecting meat (beef).



A typical class meeting shows Mr. Don Stone, Kentucky ... Fieldman, discussing beef registration.

Free baby-sitting service was provided by FFA member, V... Rose.

6. Babysitting service in the school was provided b... girl members of the Clark County FFA, and re... ments were provided by the ladies on a rotating ...

(Concluded on next p...

1. Kuhns, Gary L. "Career Education for Farm Wives." *Agricultural Education Magazine*, 46, No. 4 (October, 1973), p. 81.

FARM MANAGEMENT EDUCATION IN NORTH DAKOTA——

SEED TO SEEDLING

Don Priebe, Chairman
Agricultural Education
North Dakota State U., Fargo

Don Priebe

Sound educational programs, like healthy plants, develop and grow in a manner which at first is paritially unseen and seemingly slow. This period of proper nurturing and development is essential to the formation of a vigorous basis or root system from which further growth and development will flow.

A seed for an intensive Farm Management Education program through the school systems in North Dakota was sown in June, 1969. The Farm Business Management program as conducted in Minnesota and other states was introduced as part of a Department of Agricultural Education graduate summer-session course in Adult Education to stimulate interest in such a program. Beginning in the 1969-1970 academic year, a substantial and increasing segment of time in the undergraduate course in Adult Education in the Department of Agricultural Education has been devoted to Farm Management Education.

Most teachers who had graduated before this time had little contact or experience with this program. Consequently, with the cooperation and assistance of the Office of the State Supervisor for Vocational Agriculture and the North Dakota State Board for Vocational Education, a series of three intensive one-week workshops in Farm Management Education were offered at North Dakota State University. In August of 1970, seventeen men completed a session taught by Dr. Edgar Persons of the University of Minnesota. A follow-up session was completed by fourteen teachers in August of 1971 under the direction of Ralph Palan, Adult Farm Management Instructor at Faribault, Minnesota. A third workshop session was taught by Dr. Persons in August of 1972. Sixteen teachers participated in this intensive session.

Leonard Larshus, at that time Vocational Agriculture Instructor in Stanley, North Dakota, launched the pilot class during the 1971 calendar year. Seven couples who were enrolled in Farm Management I completed the course and had their accounts analyzed. The seedling of Farm Management Education in North Dakota was beginning to emerge.

At this point the need for a system of record analysis became apparent. On July 1, 1971, a two-year Farm Management Education Research and Development Project proposal by the Department of Agricultural Education was funded by the State Board for Vocational Education. Primary objectives of the project included the design of a record analysis and interpretation system as well as the provision of technical assistance to local teachers.

The analysis development was carried out in coordination with the Minnesota Farm Management Education Program with the record computer-work done by the Agricultural Records Cooperative at Madison, Wisconsin. The program needs in North Dakota, as well as in other participating states, brought about changes in the entire analysis procedure, especially in the crops analysis programs.

During the calendar year of 1972 Farm Management Education programs were in operation in six schools with another added later in the year. The 1972 analysis report, completed in May of 1973, included the completed analysis averages for thirty-nine farms.

The need for a position of Coordinator for Farm Management Education to manage a record analysis center on a permanent basis and to provide technical assistance to teachers became apparent during the second year of the project. This was established at Bismarck Junior College in the Agribusiness Department and on July 1, 1973, Leslie Gullickson, who was familiar with the Minnesota program and who started one of the first North Dakota programs, assumed the job of Coordinator. This provided a centrally located analysis and coordination center.

The Farm Management Education Research and Development Project is being completed in the fall of 1973. Several more schools have long range plans to add Farm Management Education to their school programs. This program has developed from the seed to a vigorous seedling in North Dakota.

(Oldfield—from previous page)

Although it is too early to fully evaluate the program, several indications of success have already become apparent:

1. The ladies all expressed appreciation for the useful information they received;
2. Class members asked that the program continue during the spring semester;
3. Class discussions frequently went beyond closing time;
4. Twenty ladies are enrolled for the second semester.

In short, the program has been so well received that it will be a continuing part of the Winchester Vo-Ag program. We believe this is a useful and needed program in the community. Other Vo-Ag teachers should consider initiating a class to serve the educational needs of ladies involved in farming and agribusiness. ◆◆◆

YOUTH LOANS: A WAY FOR AGRICULTURE STUDENTS TO STAY ON THE FARM

J. C. Simmons
Area Supervisor
Louisiana

J. C. Simmons

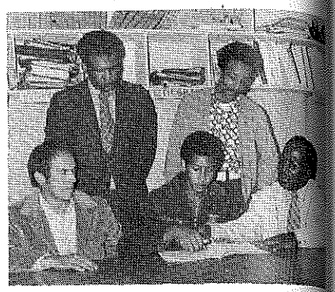
Agriculture's future is perhaps the brightest it has been in several years. The importance of the farmer who is producing food and fiber has been re-evaluated by not only government but also every-day citizens and big business. The shortage of many items has become the major topic of conversation and the subject of the media. Much thought and discussion has been given the food and fiber problem and all agree that one answer would be to encourage more of our well-trained youth to stay on the farm. However "keeping them down on the farm" over the past several years has not been the trend or life work of many of our students of vocational agriculture. The attraction of city life and the ability to find employment in these metropolitan areas have kept many from turning to the life of the farm. Now, with the incentive of possible better financial returns in the area of production farming, many of our young people are indicating a desire to remain on the farm.

Another deterrent faced by those who might otherwise enter production farming has been the prohibitive cost of becoming established in their own individual situations. In some parts of the nation, only those who inherited farming situations or those who had parents or other relatives to assist them in becoming established financially could hope to become successful farmers. Many who aspired to become established have been unable to receive adequate financial backing.

A new program through the Farmers Home Administration (FHA) now offers new hope and incentive for those young people who wish to enter the all important (and increasingly important) field of agriculture. Loans may be made to individual Vocational Agriculture students for the purpose of establishing and operating modest sized income producing farm or farm-related enterprises. The Vocational Agriculture teacher has the responsibility of seeing that the project of each student is part of a student's organized and supervised program of work. The teacher must play a very important part in indicating that the project will produce sufficient returns to provide repayment of the loan and that the vocational agriculture student is provided with practical business experience with the ultimate objective of the possible establishment of the youth in a farm business of his own. Vocational Agriculture teachers who have initiated the program for students in their departments have in general summarized the program in this manner: "Many vocational agriculture students indicate an interest in becoming established in farming, usually in the same type of farming operation conducted by their parents. Examples of this could be in dairy farming or beef farming. The animals, beef or dairy, can be purchased and placed in the family herd. Separate records of the performance of the student's animals are required. When the youth completes his high school career, he should have by then made the decision of remaining or not remaining in the business of farming. If he chooses the former, he would have accumulated enough animals to provide the basis for extending his operation, dairy or beef, into a larger and more extensive operation. The number of animals will have increased over this period of time to the extent that the student has enough collateral to approach any loan agency for their assistance in the further establishment of his own situation."

Requirements for securing an FHA loan are:

1. The individual must be a citizen of the United States.
2. Must be under 21 years old.
3. Must live in the open country or in a town of less than 10,000 population.
4. Must be unable to obtain a loan from other sources.
5. Must conduct an income-producing project in a supervised program of work.



Luther Wayne Martin, seated center, vocational agriculture student at Wesley [illegible] High School (Washington Parish — La.) discusses his beef cattle project records with Robert Jones, left, FHA County Supervisor, and Freddie Jefferson, his teacher of Vocational Agriculture. Observing are left, [illegible] Jackson, principal, and right, Mack Hurst, Assistant FHA County Supervisor. His project consists of nine beef breeding animals purchased through the Youth Loan Program of the FHA.

An important decision rests with the Vocational Agriculture teacher in determining the best qualified student applicants who should participate in the loan program. Factors to be considered should include good character, planning capability, management ability, and the ability of the individual student to follow the guidance and assistance of his teacher. The vocational agriculture teachers must agree that the project is suitable and make the recommendation that the loan be made.

Loans under the program may be made in almost any type of income producing operation. However, loans in crop production and livestock production are of top priority with the program as related to vocational agriculture. Loans for agri-related business projects are also important.

Loans may be used to purchase livestock and farm equipment, buy, or repair needed tools and equipment, pay operating expenses for running the project, and to buy supplies.

The size of the loan depends upon the kind of project, the project plans, the recommendations of the Vocational Agriculture teacher, and the approval of the FHA county supervisor. Loans are made to individuals only, not to organizations.

Interest rate for the loans is determined each July 1 for the following year on the basis of cost of money to the Government. When a loan is made, the interest rate for that specific loan will not change. However, if a future loan is made, the interest rate could be different.

In order for an FFA member to receive a youth loan, he must sign a promissory note making him or her personally and fully responsible for the debt. In some situations, the Farmers Home Administration county supervisor may conclude it necessary to have a co-signer. However, in most instances the student obtains the money on his own signature. Security on the loans includes the loans being secured by liens on products produced for sale and on chattel property, including livestock, equipment, and fixtures purchased with loan funds.

Repayment of the loan is worked out with the FHA county supervisor and payments are determined by the type of project for which the loan was made. For example, if the project is raising livestock or crops, the repayment can be made when the produce is sold. In the case of agri-related projects, the loan can be paid from the weekly or monthly earnings.

Calvin Simmons, center, a vocational agriculture student at Mt. Hermon High School (Washington Parish — La.) discusses his supervised farming project records with his Vocational Agriculture teacher, Hugh Fortenberry, left, Robert Jones, Farmers Home Administration County Supervisor, his principal, Anthony Triola, and Mack Hurst, Assistant FHA Supervisor. His Youth Loan was used to purchase beef cattle.

Washington Parish, located in southeast Louisiana, is primarily a farming parish with the greatest emphasis on livestock production, both dairy and beef, and also some vegetable production (truck crops). Forestry is also an important industry. To support the farming interests in the parish, many services, businesses, and occupations classified as agri-related are necessary. What is being done by the teachers in this system in relation to this new program reflects what could be accomplished by other teachers of vocational agriculture. Vocational Agriculture teachers in Washington Parish have for many years supplied training for their students in both the production farming and agri-related phases. However, as many other vocational agriculture teachers over the nation have experienced, they have realized that more of their graduates were entering work classified in the realm of agribusiness rather than returning to the farm. In the past, they have seen many of their students express their desire to become established in farming but were unable to do so because of the inability to receive the proper financial backing. These teachers feel that the Youth Loan Program initiated by the FHA will do much to enable their students to become financially solvent to the point of receiving this financial support. The local FHA County Supervisor and his two assistants, became very interested in the Youth Loan Program when the information came to them from their national office. These three men are progressive and very interested in the welfare of their clients and the progress of the agriculture industry of their parish.

The vocational agriculture teachers of Washington Parish have a strong and very active Washington Parish Vocational Agriculture Teacher's Association. The FHA Supervisors approached the problem of disseminating information relative to the program by meeting with these teachers at one of their scheduled meetings. As a result of this approach, several teachers arranged appointments whereby they could discuss the program with students they felt would qualify and were good prospects for participating in the loan program. This plan was put into effect and resulted in the initiation of, at this writing, a total of 17 loans and 5 more now being processed.

At present all of these loans are livestock projects — beef and dairy animals. Seven vocational agriculture students at one high school have already purchased a total of 55 beef animals. These loans were for a total of $19,000.00.

The Vocational Agriculture teacher in this school said, "this program offers an incentive for the students to remain in school for the purpose of receiving instruction to assist them in the successful operation of their project and, after graduation, further incentive to remain on the farm and become useful, successful and productive citizens in the community."

An FFA member at another school is extremely proud of his own herd of ten dairy animals obtained through his loan of $5,000.00. His father is a successful dairyman in the Pine community and has encouraged his son by cooperating in his efforts to establish his own herd. The student's animals are included in the family herd with individual records kept on a per cow basis. One of these dairy animals is an excellent show animal and will be exhibited by the FFA member at the various livestock shows. His advisor is enthused over the program. He is very hopeful of expanding the program among his students.

Seven vocational agriculture students at a third school have beef projects which were purchased through the program and has plans to expand to a great extent in the next few years. The teacher has promoted the program among those students he feels are worthy of this type of assistance. This is a very agriculturally oriented community and boasts of many successful farm families.

At present, FHA Youth Loans have been made for total of $53,100.00 in Washington Parish and, as previously stated, with excellent prospects for extending this amount.

Obviously, it is too early to quantify the end results of this project. However, as a result of a cooperative effort between personnel of the Farmers Home Administration, parents, and the local teacher of vocational agriculture, it is very hopeful that many of these young people will become well established in successful farm operations of their own and will contribute immensely to the solving of many of today's problems in agriculture. ◆◆◆

POST-SECONDARY PROGRAM IN PRODUCTION AGRICULTURE AT MICHIGAN STATE

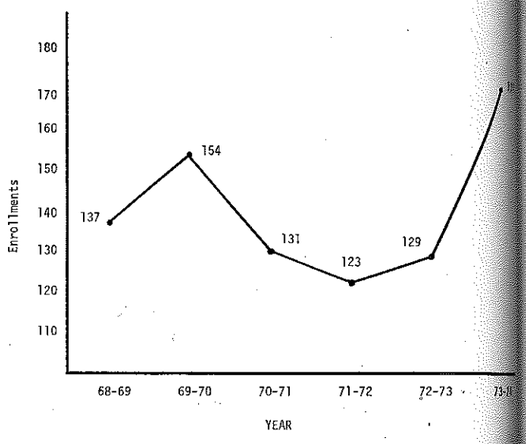
James L. Gibson
Wayne A. Knoblauch

General interest in farming occupations, up until the last couple of years, has been on a definite decline. The image of the farmer and his work have had relatively low status, even among farmers. Enrollment in the eighteen-month technical program for young farmers at Michigan State University has also been on a decline. However, recent upswings in farm prices combined with increased public interest in food production, in light of threatened food shortages have contributed to both a reversal in status of the farmer and in program enrollments. (See graph). In 1973-74 there was a twenty percent increase in student numbers over the preceding year. Applications for 1974-75 look even stronger.

Post-secondary technical education in production agriculture is not new in Michigan. The existing program at Michigan State University has grown from a "winter short course" in farm dairying, first offered in 1894, to a program with over one hundred-seventy students studying all phases of production agriculture, during the current year. Since 1894, over 20,000 students have received eight or more weeks of technical training in agriculture at MSU — more than half of these in agricultural production. In fact, until 1946, all technical programs at MSU were designed for young farmers and young farm homemakers. Today, programs are available in nine agricultural business and industry related fields. Approximately 30 percent of the five hundred-plus technical students enrolled at Michigan State University are studying for careers in production agriculture.

We think there are several significant indicators that agricultural production is still in vogue in Michigan. Public interest is one measure; enrollments in production agriculture programs is another; a third indicator is employment demand, and, of course, the actual opportunity for students to farm.

One measure of public interest found significant was the tremendous success of an information program called "Young Farmer's Day." This event was held late in February, 1973 on the Michigan State University campus. County agricultural extension agents selected up to three top high school juniors and seniors who planned to farm from each rural school in their respective counties. It was expected two hundred students (Interested Persons) and five hundred forty-two attended.



Enrollments: Agricultural Production Program, Michigan State University; Years 1968-1974.

A second measure of increased public interest in Michigan is the increased demand for vocational agriculture instructors. Career Education Planning District studies have revealed active local interest in agricultural instruction at the high school level.

On a national level, technical programs in production agriculture have been increasing in numbers as a result of increases in federal funding and local interest. A recent directory of post-secondary educational institutions offering

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(Gibson—from previous page)

technical programs in production and related agriculture indicated that in 1973 there were over one hundred institutions offering production agriculture programs. Eight or nine years ago there were only eighty-five schools offering formal education at the technician level in agriculture beyond high school.

Enrollments in the Agricultural Production Program at Michigan State University over time have reflected the relative distribution of farm types in the State. Agriculturally, Michigan is primarily a dairy state. Fruit, livestock, cash crops and vegetable production are also leading sources of farm income. Dairy students predominate enrollments. Forty to forty-five percent of the total numbers in the program have planned dairy farming careers; thirty percent have been oriented toward livestock production; fifteen percent fruit and/or vegetable production and ten to fifteen percent cash crop production.

The exciting story regarding enrollments is that during the 1973-74 school year the program witnessed a significant increase in size, reversing a ten year decline. The recent turnaround in farm prices may have been the motivation for the increased interest. We have found, in analyzing enrollment trends for the past forty-four years, a significant correlation has existed between enrollments and the Prices Received Index for Michigan agricultural commodities. However, we would like to think there are other factors which are also interacting to stimulate interest. For example:

1. The increased amount of agricultural production technology available.
2. Technical programs cost less than degree programs and offer exposure to approximately the same amount of instruction in agricultural production technology.
3. The educational level of all farmers is increasing.
4. Larger, more specialized farms today require better management.

The third indicator of the viability of production agriculture at Michigan State University is the employment demand for graduates. Each year for the past three years, there have been three to five times as many jobs as graduates who were available. Salaries offered to graduates to become herdsmen or assistant farm managers during this period ranged from $8,000 to $10,000 per year. Many openings have also included the opportunity for graduates to buy into existing farm businesses.

In Michigan, as in most other parts of the country, the number of separate farm businesses is declining. The numbers of economic Class I and Class II farms (farms with $40,000 and above and $20,000 and above gross sales, respectively), however, have been increasing. It is in these larger farm businesses that young farmers have the greatest opportunity for successful entry into full-time farming careers.

One of the challenges to those of us in technical agricultural education is to motivate young people who may not have an opportunity to farm in an existing family business, as well as those who do, to secure advanced technical training in agriculture. A recent census in Michigan showed that only approximately twelve percent of those farmers in the under-thirty-five age group had received any formal education beyond high school. Leaders in education and labor today are saying that three-fifths of all persons could benefit from less-than-baccalaureate degree education beyond high school. If this applies to farming careers as well, then probably in Michigan there is room for expanded enrollments in technical level educational programs for those planning careers in farming. Several times as many young farmers should be served as is currently the case. Agricultural Production is still in vogue!

BOOK REVIEWS

APPROVED PRACTICES IN SHEEP PRODUCTION, by E. M. Juergenson. Davis, California; The Interstate Printers and Publishers, Inc., Third Edition 1973; 406 pp. $6.25.

The author points out in this book that many farmers could add to their net income by raising sheep. He then proceeds to discuss the latest research and management practices. In his presentation of the material, the author cites many publications where further information can be obtained thus making this a valuable book for the novice as well as the experienced sheep farmer.

The author uses a format similar to that in previous editions. He discusses the opportunities in the sheep industry, selecting of animals, handling, feeding, marketing, records, producing for the home locker and others.

A feature that is desirable for high school students is an outline at the beginning of each chapter that facilitates study assignments. Dr. Juergenson provides specific practical instructions on how to perform the practices recommended and also advises on what not to do. A complete list of all the approved practices appears at the end of the book under the chapter headings. The reader can quickly review these and also easily locate the chapter for further details. In my opinion, the chapter on raising lambs is especially valuable to a young person starting with his first lambs.

This publication is well illustrated and written in language that high school students can understand. This book would be suitable as a text for high school students studying sheep production as well as for experienced sheep farmers wanting an excellent review of current practices.

Dr. Juergenson was a professor of Agricultural Education at the University of California at Davis for 22 years. He has retired and continues to operate a ranch.

Virgil Koppes
Buckeye Vo-Ag Department

STORIES OF THE OLD WEST, by Elmer J. Johnson, New York, New York: Carlton Press, Inc., 1973, 192 pp. $3.75.

The book is composed of a series of short stories. These short stories appear to be recollections from the boyhood of the author. They include the typical stories of events that could still be found as a part of the folklore of many American communities. The funny occurrences, frivolous events and factual happenings could be those that are a part of the repertory of stories predominating at that time in the community of the author. The stories are often mildly humorous, and would have been more so for those familiar with the characters. Readers from rural areas can identify with the stories the events that occurred in their localities.

Elmer J. Johnson has been a familiar name to Vocational Agriculture for a number of years. He has authored other subject matter text books commonly found on agricultural library shelves. He has taught Vocational Agriculture and farm mechanics at the high school and college level. He has served as a program specialist with the U.S. Office of Education and has been active in FFA programs.

The book is best suited for personal reading by those who can closely associate with events around the beginning of the century. Others may enjoy the authors thorough descriptions of the settings of the stories.

Larry E. Miller
Assistant Professor
College of Education
Virginia Polytechnic Institute and State University

EXPLORATORY AGRICULTURE IN VIRGINIA

Larry Miller and Dennis Hinkle
Teacher Education
VPI & SU

The advent of the career education concept has prompted vocational educators to take a long, hard look at the relationship of their program to their students. The career education concept involves elements that provide for familiarization with the world of work, career orientation, and career exploration before students become involved and enrolled in vocational education programs. Thus, many teachers in Vocational Education and Agricultural Education have stepped to the forefront in providing leadership for certain elements of the career education model. Such is true for the element of career exploration. Exploratory agricultural programs have evolved and are now becoming common featues in the middle, intermediate, or junior high schools.

Virginia currently (1973-74) has thirty-two teachers of Exploratory Agriculture teaching in twenty-seven schools with a total enrollment of 1425 students. It is projected that five additional schools will add Exploraory Agriculture to their curriculum during the 1974-75 school year.

The lack of clear-cut definitions of the elements of career education at the national level has resulted in considerable uncertainty and confusion at the state and local level. In many instances local school districts have instituted programs before definite guidelines have been provided. A study was conducted in Virginia[1] to determine the nature of existing instructional programs in Exploratory Agriculture and to survey the opinions of the teachers and the state staff relative to existing programs as well as projected programs. A 100-item questionnaire was used to survey the teachers and seven state staff members. Descriptive data were also collected from the twenty programs operating during 1972-73.

On the basis of the study, the following were some findings describing the programs in Virginia:

1. The average program has been in operation four years;
2. Programs are dispersed throughout the state geographically;
3. Sixty-three per cent of the programs are at the seventh grade level;
4. The majority of the students enrolled in the programs are boys, however, fifty-five per cent of the programs have girls enrolled;
5. A relatively small percentage of the class time was spent directly dealing with occupations;
6. Most teachers describe the nature of their progra as career orientation and occupational exploration;
7. Exploratory Home Economics was the other pr gram most frequently offered in the schools studied
8. The length of time that the students were enroll in the program varied considerably:
   a) 1 year—35%
   b) 1 semester—20%
   c) 12 weeks—5%
   d) 9 weeks—20%
   e) 6 weeks—20%
9. Teachers in the programs had the following av aged qualifications:
   a) collegiate professional certificate—63%
   b) postgraduate professional certificate—37%
   c) years teaching experience (total) 8.5
   d) years teaching experience (Ag. Ed.) 8.4
   e) years teaching experience (Exp. Ag.) 2.8

With regard to the opinions of the respondents regar ing curricular matters, it was determined that they believ that curriculum development should be the responsibili of the local school.

Questionnaire items were classified into items relat to curriculum, administration, supervision, guidance a professional. Regarding curriculum matters, teachers a supervisors agreed that the local school should develop t curriculum at the local level; both groups similarly agre that a textbook was not needed for Exploratory Agricultur Disagreement was found among the respondents concerni skill training being a major focus of the program a whether or not contests should be an integral part of t offering. They did agree that the areas studied should e compass more than just the field of agriculture.

Leadership training was slighted by both teachers a supervisors. They indicated that public speaking, how conduct a meeting, and parliamentary procedure should absent from the instructional program. All agreed that t teachers needed more curriculum materials to aid instru tion.

Under administrative items, the respondents indicat that all administrators and teachers should understand t importance and paradigms of Exploratory Agriculture. A agreed that, as programs expanded, additional funds would be needed.

The guidance items revealed that students should become acquainted with a wide representation of the wor of work, 2) be exposed to a variety of occupational possibi ties, 3) evaluate their own interests and abilities, and

(Concluded on page 2

1. Larry E. Miller and Dennis Hinkle, "A Study of the Exploratory Agriculture Programs in Virginia," (Blacksburg: Agricultural Education, Division of Vocational and Technical Education, College of Education, VPI & SU, 1973), 31 pp. (Mimeographed.)

Student Attitudes Toward Farm Employment

*LeRoy Rogers, Myron Wirth and Terry Francl**

Student attitudes toward farm employment became increasingly negative as grade in school advanced.

Colleges of Agriculture and high schools have long recognized that a declining percentage of their students will farm. This has been just one reason for developing programs to prepare an increasing percentage of students for employment in government, farm-related businesses, or other nonfarm jobs. Although farm youth have less opportunity to farm for themselves, there has been a stabilization in the number of nonmigrant year-round farm employees.

Farm operators say it is hard to hire and keep qualified year-round employees. Many farm youth continue their education in colleges of agriculture and acquire sophisticated managerial and technological skills, but few choose to use their education as farm employees. Many of these young people say they prefer farm type work and rural living, yet they have little interest in seeking farm employment as a vocation. Seemingly, there exists a paradox. We have coexisting an expressed need for qualified farm employees and at the same time there are farm youth who have the desired technical attributes and also a preference for farming and rural life.

Reconciliation of this seeming paradox likely requires more understanding of the position of both farm employers and agricultural students. A survey of agriculture students at Washington State University, three community colleges and eight high schools provided data on how students viewed full-time farm employment as an occupational alternative.

Students' attitudes toward farm employment were negative. Farm employment ranked a poor second to the students' first occupational choice in 5 of 10 categories of human wants or needs associated with the employment situation. Students ranked farm employment as distinctly inferior in the categories of income, work environment, acceptance by others, recognition, and achievement. Students viewed farm employment as positively fulfilling the need categories of independence and love and affection. They were relatively indifferent toward farm employment with respect to the categories of health, physical association and contact, and dominance.

The most negative attitudes toward farm employment concerned income and work environment. When farm employment was compared with other occupational alternatives with respect to salaries, length of work day, and number of work days per year, the problem became quite apparent. Farm employees work more days, longer hours, and receive less pay than is typical for nonfarm employment situations. Student attitudes toward farm employment became increasingly negative as grade in school advanced. Students with a farm background viewed farm employment more favorably than those with rural nonfarm backgrounds, who in turn viewed farm employment more favorably than those with an urban background.

The major consideration in choice of occupation was that it be interesting work. This was followed by a work situation that provides an opportunity to maintain contact with farming, to move to a better position, and to serve people. The fifth most important consideration was stability of employment, the only advantage that students associated with farm employment. The major disadvantage of farm employment was the limited opportunity to assume responsibility for decision-making.

Students indicated they would strongly consider farm employment if starting salaries were within at least $50 per month of that offered by competing industries. In addition, farm employers will likely find it a useful recruiting and employee retention strategy to move qualified workers quickly into positions of decision-making responsibility. This will make the job more interesting and also raise the image of farm employees as a group. In addition, there is a need to reduce the annual work requirement, recognizing the necessity for long hours during selected seasons of the year.

Worker recruitment should capitalize on the two characteristics of farm employment toward which student attitudes were favorable. Students expressed the attitude that farm employment provides for more independence on the job. Also, students viewed the rural farm setting as a desirable environment in which to reside and raise a family.

There is a clear message in these findings for high school agriculture departments. Instruction should emphasize development of decision-making ability as well as technical knowledge of agriculture. Students should develop these and other skills sufficiently to project an image of responsibility in decision-making. There is a need to develop among students an awareness of the evolving structure of agriculture which requires well-qualified farm employees. This in turn will help raise the image of farm employment so that it receives higher social acceptance.

Programs for agricultural students should provide instruction in personnel management to increase efficiency of existing employees and to aid in recruitment of qualified workers. Adult education programs in high schools, community colleges, and through the Cooperative Extension Service should consider these findings when working with employers to improve the farm employment situation for year-round workers. ◆◆◆

*LeRoy Rogers, Professor; Myron Wirth, Professor; and Terry Francl, former graduate student; Department of Agricultural Economics, Washington State University, Pullman, Washington 99163. A more detailed report of this study is available from the authors.

ASSISTANTSHIPS AND FELLOWSHIPS IN AGRICULTURAL EDUCATION, 1974-75

Paul Peterson
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The 1974-75 survey of the Publications Committee of the American Association of Teacher Educators in Agriculture reveals a continuing availability of assistantships.

Key to Listings:

Data provided are in the following order: Nature of assistantships (number available); number of months available during year; beginning month of employment; amount of work expected; monthly remuneration and other considerations such as remission of fees; whether aid is for master's, advanced graduate program, or doctoral students; source of funds; the 1974 deadline for application, and the person to be contacted. Slight variations in this pattern are due to the nature of the data provided by reporting institutions.

University of Arizona

Research assistantships (2); 9 or 12 mos.; June or September; one-half time, $360; out-of-state tuition waived; master's; department budget; March 1 or 6 mo. prior to enrollment; Dr. Floyd G. McCormick, Professor and Head, Dept. of Agricultural Education.

University of Arkansas

Research assistantships for 9 months at $1,125 per assistantship. One 12-month assistantship at $2,400. No deadline date for application listed. Apply to Edwin L. Love, Department of Vocational Education, Graduate Education Bldg., Fayetteville, Arkansas.

Auburn University

Doctoral assistantships leading to degree of vocational or adult education. One-half time; $4,800; 12 months; Apply to Dr. C. Cayce Scarborough. No deadline date for application listed.

Arkansas State University

Four graduate assistantships worth $1,800 each. GPA of 3.0 on last 60 hours of undergraduate work (4.0=A) or 2.75 average on all undergraduate work. Send applications to Dr. A. B. Rougeau, Professor Agricultural Education, State University, Arkansas 72467.

Clemson University

Research assistantship (1); 12 mos., August; 20 hours work; $260/mo.; reduction in fees; master's; university funds; April 1 application deadline; Earl T. Carpenter, Head, Department of Agricultural Education.

Cornell University

Graduate assistantships for the academic year 1974-75; Starting salaries approximately $3,000 or $3,700 for ten or twelve-month periods beginning July 1 or September 1 with one month of vacation; Payment of tuition and fees exempt. Assistants work 15 hours per week and are granted full-time graduate student status. Applications March 15 or at a later date. William E. Drake, Professor and Chairman, Agricultural and Occupational Education Division.

University of Florida

Research assistantship (2); 12 months; begin September; amount of work, one-third; $312/month; master's and doctoral; State funds; deadline April 1, 1974; contact: W. T. Lofton, Chairman, Agriculture and Extension Education.

Southern Illinois University

Three assistantships available; $290/month; 9 or 12 months, with special emphasis in agriculture education as mechanization; applications available; write to: Chairman, Agricultural Industries Department, Southern Illinois University, Carbondale, Illinois 62901; no deadline date listed.

University of Illinois at Urbana

Teaching assistantship (1); one-half time or 20 hrs. per week; $427.66; tuition and fees waived; Ed.D. or Ph.D.

Research assistantship (3-5); one-fourth or one-half time; $181-187 for one-fourth time (10 hrs./week); $360-372 for one-half time (20 hrs per week); tuition and fees waived; master's or doctoral level; contact Paul E. Hemp, Chairman, Division of Agricultural Education; no deadline date listed.

Iowa State University

Research assistantship (2); 9 mo.; September-May; one-half time; $290; reduced fees; master's or doctoral program in Agricultural Education; Agricultural Experiment Station; March 15; Harold R. Crawford, Head, Department of Agricultural Education.

Kansas State University

Teaching assistantship (1); 9 mo. June or September; one-half time; master's or doctoral; $300; reduced tuition; apply by March 1. Research assistantship (1); 9 mo. June or September; one-half time; master's or doctoral; $300; reduced tuition; apply by March 1; James Albracht, Coordinator, Agricultural Education.

University of Missouri

Research assistantships (2); 9-12 months; July 1 or September 1; one-half time; $33[illegible] month; 18 hrs. per week; out-of-state fees remitted; master's, specialist, doctoral; department instructional materials laboratory; March 1. Teaching assistantships (2); 9-12 months; July 1 or September 1; one-half time; $33[illegible] mo.; out-of-state fees remitted; master's, specialist, doctoral; State Department of Education; Gene M. Love, Professor and Coordinator, 435 General Classroom Bldg., Columbia, Missouri.

Montana State University

One graduate teaching assistantship; 9 months; $1,600/9 mo.; teaching one class (2 quarter credit hours) and advise sophomore agricultural education students. One graduate research assistant; 9 or 12 mos. $350/mo.; collect data and work in a support research position to staff. Apply any time to Dr. Max L. Amberson, Head, Agricultural and Industrial Education.

North Carolina Agricultural and Technical State University

A limited number of one-half time graduate assistantships for qualified master's degree candidates; minimum of two hundred ($200) per month; contact A. P. Bell, Head, Department of Agricultural Education.

New Mexico State University

Teaching assistantships (2); 20 hrs./week; $2,500 for 9 months; apply to Dr. Leon A. Wagley, Professor and Head, Department of Agricultural and Extension Education, Box 3501, Las Cruces, New Mexico 88003.

Ohio State University

Research Assistantships* (3-6); 9-12 months; July 1 or later; one-third to one-half time; $300-$450/ month; master's and doctoral with preference for doctoral; apply by April 1; Ralph E. Bender, Chairman, Department of Agricultural Education.

Other assistantships are available through the Center for Vocational and Technical Education. Contact Dr. Robert E. Taylor, Director.

*Some of these assistantships provide experience in the development of curriculum materials with Dr. Harlan E. Ridenour.

The Pennsylvania State University

Eight one-half time graduate assistantships for master or doctoral candidates starting July 1. Approximately $4,000 for four, 10-week terms plus cancellation of all university fees. Apply before June 1 to Dr. David R. McClay, Head, Department of Agricultural Education, 102 Armsby Bldg., University Park, Penn. 16802.

Purdue University

Teaching instructorship; 12 months starting January 1975; one-half time; $300-366/ month for 20 hrs. per week; fees remitted except for $60; master's or doctoral candidates applications accepted. Send to William H. Hamilton, Acting Chairman, Agricultural Education Section, South Campus Courts G-10.

Texas A & M University

Three graduate teaching assistantships—monthly stipends range to a maximum of $400, depending on qualifications. One graduate non-teaching assistantship—monthly stipends range to a maximum of $400, depending on qualifications. One graduate research assistantship—monthly stipends range to a maximum of $400, depending on qualifications. Send applications to Earl S. Webb, Professor, Agricultural Education.

Utah State University

One-half time teaching assistantship in agricultural mechanics; $3,000 for 3 quarters of work beginning fall quarter 1974; apply by April 1 to Dr. Gilbert Long, Head, Agricultural Education, Utah State University, Logan, Utah 84321.

University of Vermont

Research fellow (1); 12 month; July or September; 20 hrs./week; master's; $3,100 plus tuition remittance; apply by June 1 to Dr. Gerald R. Fuller, Department of Vocational Education and Technology.

Virginia Polytechnic Institute & SU

One-half time instructors (2); 12 month; July preferred; doctors; $6,000; apply by April 15 to Dr. James P. Clouse, Agricultural Education.

University of Wisconsin

Approximately 5 graduate assistantships available for candidates for masters; $2,400/ 9 months, 12-15 hrs./week. Contact Dr. Marvin D. Thompson, Chairman, Department of Agricultural Education, University of Wisconsin, River Falls, Wisconsin: no deadline for application listed. ◆◆◆

This list of assistantships and fellowships in Agricultural Education is prepared annually by the Publications Committee of the American Association of Teacher Educators in Agriculture. Paul Peterson is Coordinator of Agricultural Education at California State Polytechnic University, Pomona.

Paul Peterson

(Hummel—from page 221)

state executive secretary or treasurer would include:

—Publishing newsletters, magazine and brochures, public relation materials for use by members and teachers of local associations.

—Coordinating the young farmer officers or council members activities of the state association and the homemakers or wives organization if there is an organized ladies organization.

—Collecting dues and monies at the state level.

—Working closely with agribusiness firms who will want to provide financial help and leadership to the state association. This is becoming a key group of people in helping to promote young farmer education in nearly every state.

—Coordinating the awards program of the state association by providing leadership in development of application forms including the selecting and honoring young farmers who deserve this recognition.

—Coordinating state educational conferences including the social and recreational activities of the state young farmer association.

Other state supervisory staff members should assist in accomplishing the goals and objectives of the planned statewide program by assuming definite responsibilities to the total program.

A dedicated and competent state supervisory staff can be a real asset to local and state young farmer associations. As a result of this dedicated, dynamic state supervisory staff leadership, I am sure that young farmers in every state will continue to improve the systems of production and management on the farm in the finest tradition of American agriculture. The rest of America and all of the world will benefit from their efforts. ◆◆◆

BOOK REVIEW

NO-TILLAGE FARMING, by S. H. Phillips and H. M. Young, Jr. Reiman Associates, Milwaukee, Wisconsin. 1973. 224 pages. $10.00.

As stated by the authors in the introduction, "The plow is as American as the 4th of July," but the plow in some sections of the country is no more. The no-tillage development is a high-yield, low-cost, soil-saving, new cropping technology.

One author is an Extension Agronomy Specialist, and the other is a farmer who began experimenting with no-tillage techniques in 1962. Since 1962 there have been more than 10,000 visitors who have viewed the no-tillage crops. These two men probably have more experience in no-tillage farming than any other two people.

The authors have done an outstanding job in writing this book. They have excellent pictures, both black and white, and color. They have done research, both in the field and from former data. The chapters are written so as to trace farming from the invention of the plow to the present day no-till farming.

Mr. Phillips and Mr. Young give the complete picture in this book, as to the good and bad of no-tillage farming. They give the pollution aspect of this type farming. The book gives the data on different crops and crop rotation.

Machinery requirements, such as planters, types of coulters and tractor horsepower are discussed. The fertilization of crops is covered very well, with supporting data.

The control of sod and weeds is covered. A table showing type of weeds along with suggested control in no-tillage grain production systems, is one of the most complete.

As we know, we must control insects, weeds and disease. This will have to be done by chemicals. The authors have tables which explain how to calculate, and calibrate seed and chemicals to be used on no-tillage crops.

This book is written on the level of most secondary students, as well as college students and adults. This would be one of the best reference books a farmer or agriculturalist could have in his library.

Wallace Wortham,
Vocational Agriculture Instructor
DeWitt High School
DeWitt, Arkansas

CONTENT PRIORITIES FOR FARM MECHANICS

C. Don Knotts

C. Don Knotts
Associate Professor
Teacher Education
Prairie View A&M University

and

Earl S. Webb
Professor
Teacher Education
Texas A&M University

Earl S. Webb

What should be taught in courses that will be of the most value to my students? This question has perplexed teachers for many years and is growing in magnitude as the phrase "relevance in education" is being shouted louder and louder with more and more frequency. To answer this question about agricultural mechanics, a research project was developed in the Department of Agricultural Education at Texas A&M University which utilized the age-old procedure of asking people in the occupation what they need to know and be able to do to be successful. It was believed that if successful farmers would evaluate skills in terms of their importance then teachers would be able to establish relevant course content. Once the most important skills were identified, teachers could make certain that these were taught and learned before teaching content of lesser importance.

The purpose of the research, therefore, was to determine the knowledge and skills that should be included in courses designed for students enrolled in production vocational agriculture and to establish priorities (levels of importance) for teaching course content. To accomplish this purpose, responses were requested from 50 young farmers throughout Texas who had been recognized by the State Association of Young Farmers of Texas for outstanding farming programs during one of the five years, 1964 through 1969.

Forty-six of the 50 responded to a questionnaire which consisted of 65 items describing skills, and included questions pertaining to age, education, size of business, and type of farming or ranching enterprise. Skills were identified within the five mechanical areas of farm power and machinery, farm shop, farm electricity, buildings and conveniences, and soil and water management. Young farmers were asked to indicate on a scale of from 1 through 6 the level of importance they believed each skill to be. The mean for each skill was determined. Skills which received a mean rating of 4.50 or above were placed in Priority Level I (most important). Those that received a rating of 2.50 to 4.49 were placed in Priority Level II. Skills receiving a rating of 2.49 or below were placed in Priority Level III (least important). Only two of the 65 skills listed on the questionnaire were rated 2.49 or below.

Summary

1. The average age of the respondents was 33.6 years with a range from 24 to 40 years.
2. The mean number of years of education completed
respondents was 12.5.
3. The sample consisted of 15 crop, 15 dairy, 11 general,
5 livestock farmers.
4. The mean of annual gross sales of respondents was
000. A low of less than $10,000 and a high of more t
$150,000 were in the sample.
5. The following skills were assigned Priority Level I ra
by respondents. Mechanical areas are listed from mos
least important according to the ratings assigned. L
wise, skills within areas are listed from most to least
portant.

Farm Power and Machinery

Be able to operate the farm tractor and equipment safely
Be able to service machinery and equipment according to
erator's service manual
Be able to determine cause of trouble of machinery and eq
ment
Be able to select the size and type of machinery and eq
ment appropriate for farming operations
Be able to adjust farm implements under field conditions
Be able to keep records of maintenance and repair on
chinery and equipment

Buildings and Conveniences

Be able to construct farm fences
Be able to repair farm buildings
Be able to maintain farm water systems
Be able to maintain plumbing fixtures (repair leaky va
and faucets, and the like)
Be able to construct farm buildings
Be able to install farm water systems

Farm Electricity

Be able to install general purpose circuits (common 110
wall outlets, switches, receptacles, and the like)
Be able to select the proper size and type of motors
Be able to maintain electric motors (clean and oil and
like)

Farm Shop

Be able to use power tools (drills, power saws, and the
Be able to use hand tools (hammers, saws, measuring de
planes, chisels, and the like)
Be able to weld with arc welder
Be able to cut with oxyacetylene torch

It is evident that for a vast majority of farmers, it is far more important to be able to service machinery and equipment according to the operator's service manual than to be able to overhaul an engine.

6. The following skills were assigned a Priority Level II rating.

Farm Power and Machinery

Be able to prepare machinery and equipment for storage
Be able to assemble farm implements
Be able to perform electrical wiring jobs on farm machinery and implements
Be able to overhaul farm engines

Buildings and Conveniences

Be able to construct portable building (fences and other easily movable buildings)
Be able to maintain farm sewage disposal systems
Be able to install plumbing fixtures
Be able to maintain farm gas systems
Be able to install sewage disposal systems
Be able to perform concrete masonry jobs
Be able to make working drawings (free hand or sketch building and equipment plans)
Be able to install farm gas systems
Be able to read a blueprint

Farm Electricity

Be able to select the proper size and type of electric wire
Be able to inspect electric wiring systems to determine the cause of trouble
Be able to wire the farmstead
Be able to install electric equipment (automatic feeders, conveyers, livestock poultry brooders, and the like)
Be able to plan wiring system for farmstead
Be able to install circuits for major appliances and equipment (central air, stoves, welders, and the like)
Be able to figure cost of electricity

Farm Shop

Be able to plan a farm shop (select building, tools, equipment, and supplies)
Be able to do blacksmithing
Be able to use spray painting equipment
Be able to do cold metal work (drill, bend, rivet, thread, file and saw metal, and the like)
Be able to weld with oxyacetylene gas
Be able to use hand painting equipment
Be able to recondition hand tools (chisels, auger bits, twist drills, saws, shovels, and the like)
Be able to use wood preservatives (other than paint)
Be able to select metals
Be able to solder
Be able to do rope work

Soil and Water Management

Be able to maintain drainage system
Be able to maintain terraces and contours
Be able to maintain farm ponds and waterways
Be able to survey land to determine acreage
Be able to interpret land use maps
Be able to construct terraces and contours
Be able to operate farm level (transit)
Be able to level and grade land
Be able to maintain irrigation system for particular farming operations
Be able to construct farm ponds and waterways
Be able to estimate cost of draining and/or irrigation system
Be able to install irrigation system for particular farming operation
Be able to make soil profile map

7. The following skills were assigned a Priority III rating. (least important)

Be able to glaze (cut and/or fix glass. Example: Replace and/or repair window panes)
Be able to repair electric motors

Recommendations

1. Teachers should examine courses of study in agricultural mechanics to see if suitable content is included and if appropriate priorities are assigned to subject matter content. Findings show that the most important area is farm power and machinery. It is evident that for a vast majority of farmers, it is far more important to be able to service machinery and equipment according to the operator's service manual than to be able to overhaul an engine. Likewise, it is much more important for them to be able to maintain electric motors than to repair them. It may be observed that farmers place more importance on fence construction than on the construction of buildings.
2. Teachers should determine the knowledge and skills needed by farmers in their school communities and develop instructional content to meet these needs.
3. In diversified farming areas, consideration should be given to individualized instruction in agricultural mechanics in accordance with the type of farming a student plans to enter or the type of farming in which he is engaged.
4. Teacher education programs should be designed to enable present and prospective teachers to develop the skills they will be required to teach. It is doubtful if many farmers are concerned about how to make a nail box. ◆

(Miller—from page 232)

should be encouraged to continue their education. Congruence was observed between teachers and supervisors on a basic tenet of vocational education, i.e., preparation for earning a living. They supported the hypothesis that this was not the purpose of Exploratory Agriculture. Both groups believed that guidance counselors are supportive of the Exploratory Agriculture programs, but they also indicated that there was a need for constant re-orientation of the counselors.

The descriptive data analysis can be generalized into some broad recommendations: 1) There is a need for substantial curriculum development efforts in Exploratory Agriculture; 2) Exploratory Agriculture should maintain a career exploration focus; 3) Exploratory Agriculture needs the full support of administrative and guidance services; 4) Additional funding will be needed in the continuation and development of Exploratory Agriculture programs; and 5) Emphasis needs to be placed on in-service and pre-service teacher training by the appropriate institutions.

The teaching of Exploratory Agriculture has revealed many new challenges that must be met by those in Agricultural Education. The program, as a part of the career education concept, will enable prospective students to more thoroughly consider and deliberate their vocational opportunities. Agricultural educators at all levels must move to meet this challenge by providing worthwhile courses of study. ◆◆◆

BOOK REVIEWS

FARM MANAGEMENT: PRINCIPLES, BUDGETS, PLANS, by Herbst, J. H., Champaign, Illinois: Stipes Publishing Co. 1968, revised 1970, 294 pp., $8.20.

This book contains fourteen chapters and begins at the beginning—with the decision-making process and economic principles applied to farm management. It includes information about land classification and its value in farm planning. One chapter is devoted to budgeting. There are chapters dealing with the planning of labor, crops to produce, livestock, and power and machinery. This book also covers planning the farmstead and economic justification of buildings. The final part of the book is spent with completing records and results, using credit and additional financial information.

The author, J. H. Herbst, is an associate professor of Farm Management at the University of Illinois and is well-versed in the area of farm management. In this book he has outlined the complete Farm Management program from the initial decision making to the completed record books.

The teacher of Vocational Agriculture will find this a comprehensive reference book, particularly helpful for supplying learning activities for the high school student. However, there are some disadvantages to the book. It is an oversized book, measuring 8"x11" and has a paper binding. Most important, the lack of an index is a great inconvenience.

Lee Freeman
East Prairie High School
East Prairie, Missouri

ENGINEERING APPLICATIONS IN AGRICULTURE, by Wendell Bowers, Benjamin A. Jones Jr., and Elwood F. Oliver. Champaign, Illinois: Stipes Publishing Co., 1973, Fourth Edition, 271 pp., $6.20.

This book is a very good reference and could be used effectively for vocational students in secondary schools and colleges.

There are five broad areas covered: (1) The Slide Rule, (2) Farm Structures, (3) Farm Surveying, (4) Farm Electrification, and (5) Farm Power and Machinery. Each of the areas are covered in great detail. The area on Farm Electrification has very good information on ground fault circuit protection which is needed for residential occupancies for all 120 volt, single phase, 15 and 20 ampere receptacle outlets installed outdoors. Each area includes excellent laboratory exercises for practice.

The authors of this book are professors of Agricultural Engineering at Oklahoma State University and the University of Illinois at Urbana-Champaign and are well qualified to write this book.

Chester Booth
Vo-Ag Teacher
Whitney High School

TRACTOR AND SMALL ENGINE MAINTENANCE, by Arlen D. Brown, Purdue University, Danville, Illinois: The Interstate Printers & Publishers, Inc., 1973 copyright, fourth edition, 309 pages plus reference list and index. $5.75 Clothbound.

Prior editions of this book were entitled FARM TRACTOR MAINTENANCE, but the addition of a chapter on small engine maintenance accounts for the title change.

The book is broken into four parts, the first of which is an introduction. This contains two chapters dealing with the basic concepts of gasoline and diesel engines used in tractors. A description of tractor fuels, oils, and grease adds the final touch to part one.

Part two, Preventive Maintenance, contains eleven chapters that are well illustrated with pictures and diagrams that are easily understood. These chapters cover the maintenance of the lubrication, cooling, fuel, ignition, electrical, hydraulic and power transmission systems, plus other pertinent information.

Operation, Repair and Storage, is part three of the book. A main part of this section is the listing of procedures on tractor operation with safety cartoons; this method is very effective. Engine repair with labeled illustrations and a procedure list for tractor storage and service after storage are other kinds of information in this section. An excellent chapter in part three is a trouble-shooting guide which contains major breakdowns of engine trouble and possible causes.

Part four, Small Engines, is the reason for the change of the book title. This section, a brief description of the small engine cooling system, engine lubrication, and a trouble-shooting guide, is a major addition to the revision.

The book can be easily understood by anyone, whether knowledgeable of the subject or not. Each chapter is concluded with pertinent questions on information contained within it. The book is not bulky and is very easy to handle.

The author, Arlen Brown, has done a fine job on illustrating the contents of this book. It is evident that his background with engines in the Navy and his success in teaching tractor maintenance and minor engines in the Agricultural Engineering Department at Purdue University has carried over into this edition of TRACTOR AND SMALL ENGINE MAINTENANCE.

Arthur W. Green
Todd County Central High School
Elkton, Kentucky

FORAGES, by Heath, Metcalfe, Barnes, Ames, Iowa: The Iowa State University Press, 1973, Third Edition, 755 pages, $12.95.

The third edition of this standard treatise on "Forages — The Science of Grassland Agriculture" (755 pages) is another useful contribution to the field. In addition to the three senior editors, 93 other recognized scientists and leaders in the field of grassland agriculture have contributed to this edition. An added feature is the inclusion of a metric conversion table; this in recognition of the current direction toward the me system which is used throughout the tex

The text is divided into four major pa as follows: Part I, Forages and a Pro tive Agriculture; Part II, Forage Gra and Legumes; Part III, Forage Produc Practice; Part IV, Forage Utilization. Th are 65 chapters in the complete text.

The format of the book is such tha teacher will find it a very useful teach tool. Each chapter is a complete "essay" its own right, and each concludes with series of questions and suggested learn activities. This provides built-in flexibili

Well illustrated and providing numero additional references, this book should placed on the recommended list. It co well be used as a reference text in any p duction agriculture course and should be personal reading book for instructors in p duction agriculture, agribusiness, and natu resources.

Milo J. Peterson, Profes
Agricultural Education
University of Minnesota
St. Paul, Minnesota

COMMERCIAL CATFISH FARMING by Jasper S. Lee. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1973, 263 pp. $6.95.

Chapter titles provide a good indicati of the content of this comprehensive well-written book: Catfish Farming Tod Possibilities of Catfish Farming; Establish a Catfish Farm; Elementary Catfish Biolo Constructing Water Facilities; Securing a Managing Water; Feeding Catfish; Co trolling Diseases and Parasites of Catfi Controlling Predators, Trash Fish and Oth Pests; Selecting and Managing Broodfi Producing Fry, Fingerlings, and Stocker Growing Food Fish; Harvesting, Holdi Grading, and Hauling Catfish; Marketi Catfish; Operating Recreational Marketi Facilities; Processing Catfish. Pictures a drawings add interest and clarity. A selec ed bibliography with over 50 entries shou be helpful to anyone wishing even mor detailed information than provided by t book.

Dr. Jasper S. Lee was an Associate Pr fessor of Agricultural Education from Mi sissippi State University when he author the book. In non-technical language, he t presented management principles, technic details of catfish culture, and analy significant problems in this new agricu tural industry. The material appears to ha been carefully checked by appropriate sp cialists. It should be of value to high scho students, community college students, un versity students, and professional educato with a need for such information. Althou designed for the novice, the established fa farmer might read the book to his advan tage. While most useful to those living in entire tier of southern states from the Atla tic to the Pacific Oceans, there is quite a b of information which potential and act catfish farmers in other locations shou find helpful.

The book would be appropriate as a te reference, or for personal reading. Anyo who reads it should gain valuable insig about a significant and growing industry.

Dr. Benton K. Bristol
Associate Professor
Department of Agricultu
Illinois State University
Normal, Illinois

BOOK REVIEWS

GREENHOUSE MANAGEMENT FOR FLOWER AND PLANT PRODUCTION, by Kennard S. Nelson. Danville, Illinois: The Interstate Printers & Publishers, 1973, 246 pp. $7.25.

This book is an excellent operating manual and reference on the management of greenhouses for the production of flowers and other plants. It deals in a practical manner with one of the most perplexing problems in the management of the greenhouse that of crop rotations and scheduling plants for various seasons and times of the year.

The cultural aspects of greenhouse management and operation are also dealt with. The approach is made from two broad fronts — the soil environment and the air environment. The content of the book is presented in seven chapters: What is a Manager? Management of Business Procedures, Management of the Physical Facilities, Crop Rotations and Scheduling, Management of the Greenhouse Air Environment, and Management of Marketing.

Dr. Nelson's broad experience in the floriculture industry and in education amply equips him for writing a book of this nature. His work in floriculture has included such experience as greenhouse grower's helper; grower of miscellaneous crops; production manager of a large cut flower and pot plant range; and vice-president in a sales firm specializing in supplying plants, supplies, and technical information to greenhouse flower and plant producers. His educational experiences range from high school science instructor to professor of Floriculture at the North Dakota School of Forestry and the Ohio State University. He is also author of FLOWER AND PLANT PRODUCTION IN THE GREENHOUSE.

High School teachers of vocational agriculture, having the responsibility of managing and operating a department or school greenhouse, will find this book most helpful. It should prove most beneficial, also, as a text and reference book for advanced high school students of ornamental horticulture, as well as college students in this area.

Boyce Miller, Teacher
Ornamental Horticulture
Capitol High School
Baton Rouge, La.

AGRICULTURAL EDUCATION IN A TECHNICAL SOCIETY: AN ANNOTATED BIBLIOGRAPHY OF RESOURCES, by Mary Ruth Brown, Eugenie Lair Moss, and Karin Drudge Bright. Chicago: American Library Association, 1973. 228 pp. $10.00

The authors of this bibliography deserve the highest possible praise. They have produced a guide-book which should be of great value to librarians, administrators, and teaching faculty who are concerned with agricultural literature, particularly those working in two-year post-secondary education. Well developed secondary school programs will also find it useful as an overview of the type of literature in the field of agriculture and as a source of books to be read by highly motivated students. University educators will be interested in it as a guide to what is being emphasized in the new two-year programs as reflected in the literature developed, and as an aid for checking to see how well their libraries reflect the needs of students at the beginning levels of higher agricultural education.

Careful reading of the introduction to each section (a useful exercise in itself) and a fairly quick overview of the items listed, lead to a few minor criticisms. First of all the title is misleading; we must read the subtitle before we know that we have a bibliography. Also a good number of the items included are too advanced for the level at which the publication is aimed. Then, it would have been a good idea to list specific titles of the more important A-V materials, some of which may be more important in the future than many of the books listed. Finally, it is too bad that all of the items listed are now more than three years old. Perhaps some agency could undertake to keep this publication up-to-date, with materials carefully selected so that what is included is definitely aimed at the level indicated by the term "post-secondary technical education." In spite of these few shortcomings, any person interested in developing a library for technical education in agriculture will want to have this book.

Robert J. Myers, Head
Agriculture Library
Ohio State University, Columbus

INSECTS AS PETS by Paul Villard. Garden City, New York: Doubleday and Company, Inc., Copyright date 1973, First Edition, 160 pages, $4.95 per copy.

Insects As Pets is a book that adequately describes various insects and their usefulness to man in the total environment.

The book points out the past errors of man in the total destruction attempts of all insects by chemical means by man in the past and the realization that many insects are useful and may even be kept as interesting pets.

I thoroughly enjoyed reading the methods of propagating, studying visually, capturing, keeping and mounting of the various insects described.

The units on making insect collections were of particular interest and the units were adequately reinforced with good visual photographs and descriptive terminology that could be understood and carried out in a general science course consisting of grades nine through grades eleven and twelve.

I thought the descriptions of the social and life habits of each insect described were excellent and were presented in such a form as to be of interest to high school students in general. The book should also be of interest to anyone, including adult level, who is interested in basic entomology and the environment.

The author seems well informed and certainly knows how to present material acceptable to general student use and for adults with average abilities and intelligence.

Joseph J. Miller and
Joseph A. Manda II
Teachers of Ornamental Horticulture
Bergen County Vo-Tech High School

Phil Teske
A Remembrance, A Tribute

Public education, vocation education and, in particular, agricultural education suffered a grievous loss when Dr. Philip R. Teske passed away on January 2, 1974. Certainly Phil will be sorely missed, not only by those who knew and worked with him, but also by the thousands of students who were touched by his work.

Dr. Teske was born and raised on a farm near Rochester, Minnesota. His background was typical of many farm boys of his time. Helping on the home farm, attending "country schools," moving on to the Rochester secondary schools where he was enrolled in vocational agriculture, and then to the University of Minnesota where he majored in agricultural education.

There is, however, a chapter in his life that adds support to the concept of Phil Teske as a citizen, professional educator and truly all-American type. That is his military record. This record speaks eloquently of Dr. Teske's ability as an all-weather fighter pilot during W.W. II, the Korean conflict and, additionally, as chief of Training Analysis and Development Section of the Aircraft Controllers School.

Let it be said that Phil Teske never measured success by monetary or the other obvious types of reward and aggrandizement. He measured his worth according to the service he could provie his fellow-man, especially the man on the land. In this respect he measured up fully to the philosophy he inherited from his training and education. No better tribute can be made to this man. He held fast to his ideals; he lived by his beliefs.

Some people have marble monuments, some have bronze statues. Phil Teske will have monuments no one will see, but they will be viable living testaments to the service of this man, Phil Teske, who dedicated his life to the achievement of his philosophy as a vocational agriculture student, teacher and leader.

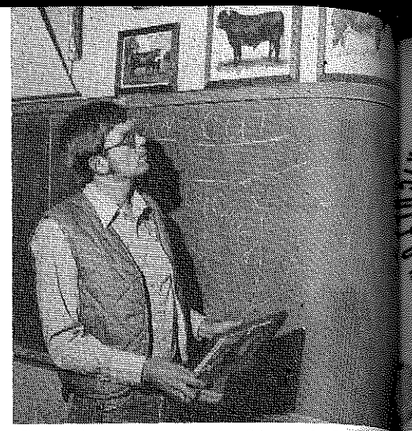
Milo J. Peterson,
Agricultural Education
University of Minnesota

A successful crop of soybeans is measured by FFA Cowden-Herrick, Illinois chapter members (from left) Stan Collins, Tim Summers and Jim Shaffer, chapter advisor. The crop was planted using an Allis-Chalmers series 300 NO-TIL planter. Finding meaningful summer employment for young people has become a traditional problem in many areas. The Cowden-Herrick FFA chapter recognized the problem. They decided to gain experience by custom planting minimum tillage crops as a money making venture for the chapter. They reasoned that if farmers were running late, they would want to get into the fields quickly when good weather came. For this reason, farmers might be willing to try minimum tillage farming and double cropping without actually investing in a planter. By season's end, the chapter custom planted 1,218 acres. The result was so successful that the group plans an expanded operaton for 1974. (Photos from Dick Stark, Allis Chalmers)

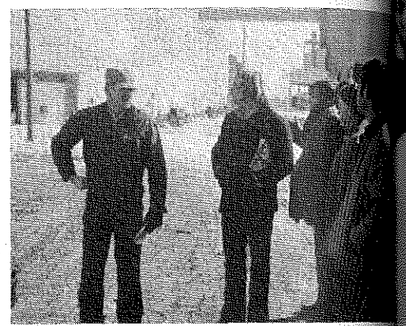
Stories in Pictures

by Richard Douglass

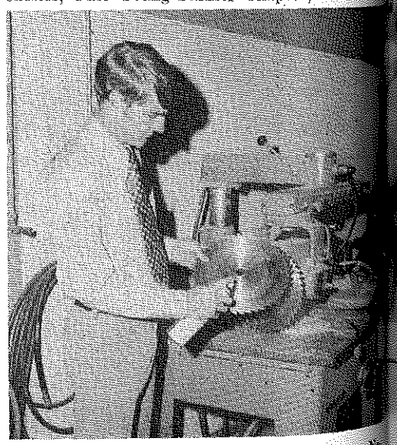
Vo-Ag, Connecticut style, includes production horticulture. Shown above are (L to R) Gregg LeBlanc, Denis Ricard, Lynn Bristol and Instructor James Dick. The E. O. Smith Regional High School is a laboratory school for the University of Connecticut. (Photo by Paul Rohacik and submitted by Dr. Al Mannebach, University of Connecticut)



Generating an interest in Livestock Productio was one of this new teacher's goals. Mr. Rona Engelke, one of Aurora's (Nebraska) Vo-Ag I structors, used pictures from various breed a sociations. The "original" frames were construct by a cooperating industrial arts class. (Photo Richard Douglass)



Members of the Canal Winchester (Ohio) Youn Farmers Association participate in tours and fiel trips to supplement the classroom education pro gram. Such events are many times one of th year's highlights. (Photo from the Canal Win chester, Ohio Young Farmer Chapter)



SHOP TIP—Mr. Dennis Kahl, Wood River, N braska, recommends household oven cleaner t remove the gum and burned-on particles from saw blades. He also recommends getting the saw sharpened before additional use. (Photo by Rich ard Douglass)

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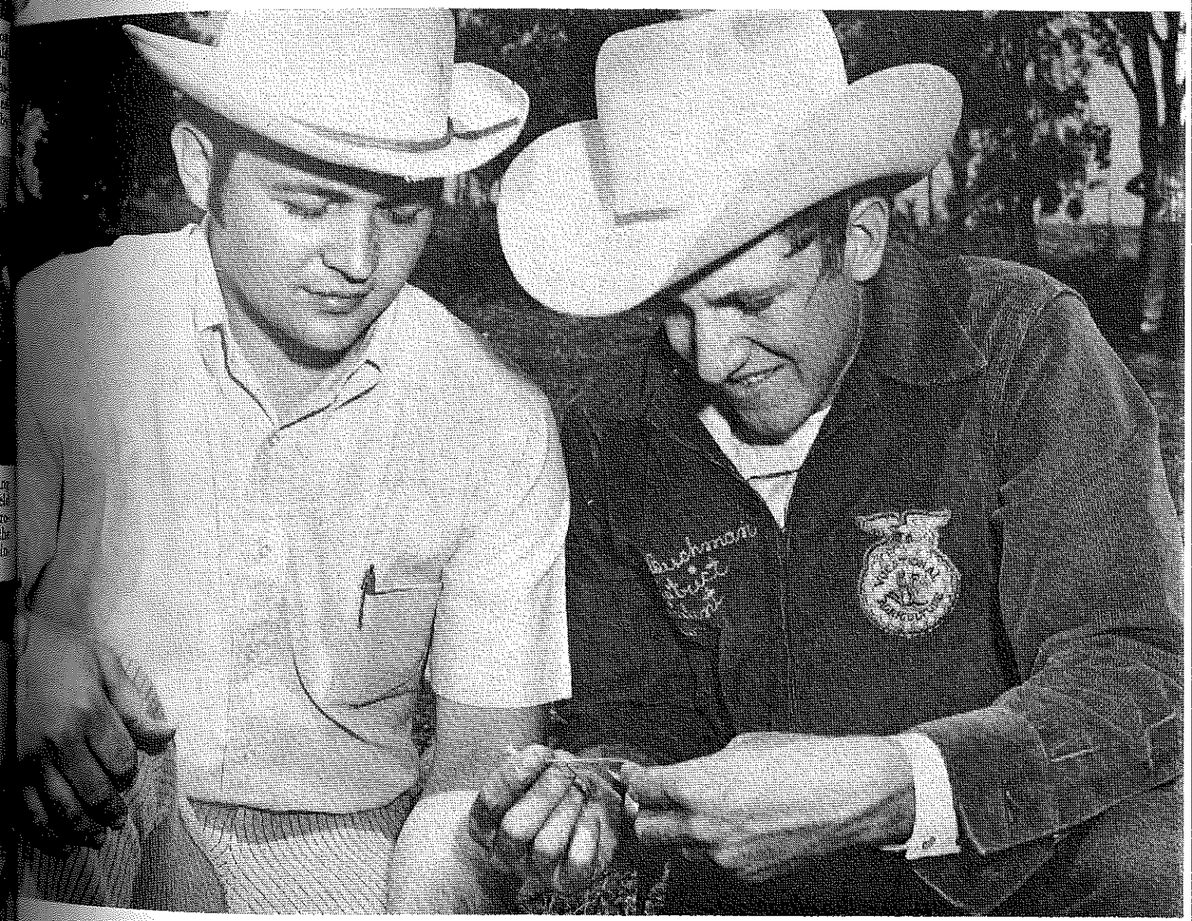

Theme—SUMMER ACCOUNTABILITY