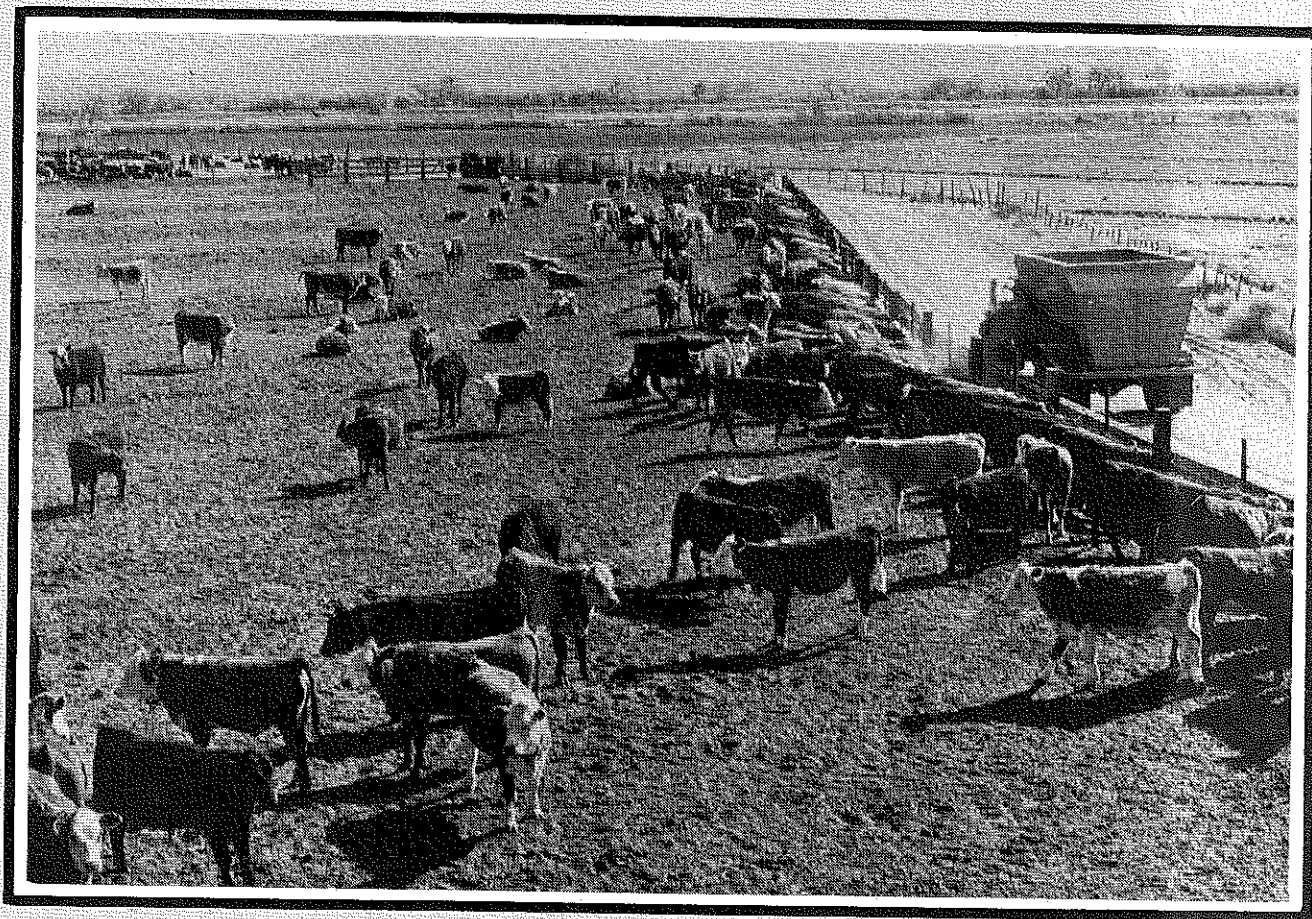


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THEME: Programs in Animal Agriculture

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Programs in Animal Agriculture



JASPER S. LEE, EDITOR
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and Head, Department of Agricultural
and Extension Education, Mississippi
State University.)

tive events but often require them to be away from school. How many competencies do students develop at livestock shows that enable them to enter and succeed in gainful occupations?

October, 1980

This issue of the MAGAZINE focuses on programs in animal agriculture. Dr. Don Herring of Texas A & M University has obtained several articles on the theme.

What's Going On In Washington?

The Editor recently visited in Washington with various individuals in the U.S. Departments of Agriculture and Education, congressional staff, and the 4-H and FFA Centers. The purpose was to get brought up to date on the trends and directions at the national level. It was a meaningful experience — one which made me proud of our profession, yet concerned about where we are headed in the future.

Department of Education

In the new Department of Education, the organizational structure is not fully developed and operating. Individuals in the higher levels of the Department appear to be placing more emphasis on politics and less emphasis on professionalism and providing quality educational programs in the United States. You get the feeling that there is more emphasis on complying with regulations than on whether or not the students in the schools of this nation learn anything!

Unfortunately, the trend away from providing leadership for substantive, program-oriented education has begun to permeate state- and local-level educational administration. Some school officials are more concerned about special groups and meeting court orders and Office of Civil Rights quotas than about student learning. Their jobs are easier when they categorize students (using such

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Animal agriculture is concerned with all of the activities in producing domestic animals. It includes the care and management provided on farms and ranches as well as supplies and services from off the farm. Today's educational programs in animal agriculture must be broad enough to include preparation for the off-farm occupations. Further, these educational programs have been expanded beyond the traditional farm animals to include pets, laboratory animals, and service animals, such as guard dogs.

The Supportive Network

The producers of cattle, hogs, poultry, and other animals do not operate in isolation. They depend upon a network of agribusinesses to provide the needed supplies and services. Animal agriculture supplies include feed, health care products, and equipment. Animal agriculture services include a wide range of activities such as health care, breeding, inspection, and marketing. Without the off-farm supportive network, the production of animals would be much as it was 200 years ago in the United States.

Vocational agriculture/agribusiness programs must be responsive to the total of animal agriculture. Individuals employed in off-farm animal agriculture need specific preparation for their jobs just as do individuals employed on farms. This has been verified through research, especially job competency research. Examples include feed mill employees, farm supply store employees, dairy supply employees, animal health workers, veterinary aides, laboratory animal workers, breeding service workers, and marketing service workers. Each area of animal agriculture has specific needs. Sheep shearers, dairy technicians, chicken sexers, egg graders, artificial inseminators, and pet groomers are a few examples.

The Role of Vo-Ag

The role of vo-ag is to prepare individuals with the competencies needed for gainful employment in animal agriculture as well as other areas of agricultural industry. The key to our instruction must be "needed competencies." What to teach is determined by what employees and entrepreneurs need to know. It is time to assess our program content for relevancy.

Some of the activities in animal agriculture carried out in vocational agriculture/agribusiness need to be assessed. Areas of high participation may actually produce low returns in terms of competencies needed for employment. A good example is the livestock show. These events have strong traditions in some states and regions. They are good public relations activities with certain groups of people. They allow students and teachers to participate in competi-

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What's Going On In Washington?

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things as achievement test scores) and put them into educational tracks. When this occurs, the students are far from being placed in the least restrictive environment. In fact, they are placed in a dangerously restrictive environment.

Daryl Hobbs, a sociologist at the University of Missouri, briefly mentioned the trend of declining middle class support for public education during his speech at the National Seminar on Agricultural Education in July, 1980. Dr. Hobbs did not elaborate on the trend. This movement has been underway for several years. Speculation is that it is due to excessive regimentation of public education with regulations largely imposed by "educational leaders" and others in Washington, D.C.

Vocational Education

In vocational education, a major concern is the reauthorization of the Vocational Education Act. An action plan has been developed for drafting a legislative proposal which has a reasonable chance of finding acceptance with Congress. The procedure is to be completed by March, 1981, with the submission of the legislative proposal to Congress.

Where do we stand on general vocational education versus specific program areas (one being vocational agriculture/agribusiness)? The movement toward general vocational education still has strong support. A message that we need to send to Washington — to the Department of Education and Congress — is that specific program areas in vocational education must be identified. People must be prepared for specific occupations — not just general vocational education! One of the problems in the Department of Education is that there are many compliance-oriented generalists and few individuals with substantive program

orientation. (We are fortunate that there are individuals with program orientation in vocational agriculture/agribusiness.) The "generalist" individuals lack competence in specific program areas. About the only thing the "generalists" can do is check statistical information and open the mail. Tough talk — right? My point is this: If vocational education is to prepare individuals for gainful employment, it must focus on specific occupational needs, and this requires competent leadership that has a program orientation.

All program areas in vocational education need to cooperatively seek legislation which is mutually beneficial to each area. However, a united effort does not necessarily mean success. If specific program identity and provisions for the unique features of the program are not included, should we support a united effort? United efforts which result in the loss of program substance are detrimental. Good examples can be seen in teacher education institutions which have embraced the generalist concept. Emphasis on the needs of agricultural education has diminished.

Washington is a good place to visit to study education. Those individuals who are brave enough to work there need our support. And we need to thank those who are providing program leadership for vocational agriculture/agribusiness. Byron Rawls, thank you!

The Cover

Farming and ranching have changed from a way of life to complex business ventures. Animal agriculture is much a part of this change. The cover photograph shows a commercial feedlot operation — one of the high risk ventures in animal agriculture. (Photograph courtesy of L.S. Pope, New Mexico State University.)

THEME

Programs In Animal Agriculture

Several key notions regarding animal agriculture are advanced by the authors of articles in this issue. One of those is "change." Dr. Pope, in his article on "The Future of Animal Agriculture," provides some very insightful views not only of historical developments that have shaped today's animal agriculture, but also of both the tremendous changes now taking place in the industry and those that we can expect in the future. He has done an excellent job of "crystal ball gazing." The article by Mr. Johnson presents an intriguing example of a non-traditional animal agriculture program designed to meet the needs of urban students for practical experiences with animals.

Another key notion is that of "challenge." Dr. Stockton's article presents a challenge to teacher educators and state staff personnel to provide educational opportunities which will assure that teachers are prepared adequately for their role in animal agriculture. The model being us-

BY DON R. HERRING, THEME EDITOR

Editor's Note: Dr. Herring is an Associate Professor in the Department of Agricultural Education at Texas A & M University.

ed in Texas is discussed in hopes of generating ideas that other states might consider. The articles by Mr. Taliaferro and Mr. Casada on "Using Animals to Teach and Develop Young People" and by Mr. Meeks on "Developing Competencies in Animal Agriculture Through the Instructional Program and the FFA" offer a challenge to teachers to use experiences in animal agriculture for the maximum benefit of students.

One other notion that comes through loud and clear is that there are tremendous opportunities provided by animal agriculture to motivate students in vocational agriculture programs. The care and nurture of animals is a very

strong, natural attraction for youngsters. Pride in ownership and the challenge of competition are other natural interests that can be utilized in motivating students. Animal agriculture is a strong motivational force for teachers as well, as it offers many avenues for recognition as students perform well in livestock shows and judging contests, win proficiency awards, and have other successes with their animal projects. These activities are highly visible and provide good publicity for the teacher and the program. Also, teachers are provided with intrinsic rewards as they see the results of their teaching as students experience success in the animal agriculture program.

Some Concerns

With all due consideration of the benefits of an effective animal agriculture program, perhaps it would be appropriate to voice some personal concerns.

It concerns me to see too many teachers performing livestock skills for students such as selecting animals, castrating, dehorning, vaccinating, and grooming, rather than teaching the students how to do these things.

It concerns me that many teachers are spending so much time with the animal science component of the curriculum that the other areas are severely slighted. Certainly teachers are expected to specialize in areas of the program in which they have the greatest expertise and interest, but such specialization must not be so extensive that it forces a teacher to omit or teach poorly other parts of the curriculum.

It concerns me that some teachers appear to be more interested in the personal recognition they receive from the success of their students than they are for the youngsters involved. Certainly there is nothing wrong with receiving — recognition in fact we all need it — but it is important to realize that the program is for the students. Our primary concern must be for the students and their success rather than our own personal recognition.

It concerns me to realize that there are teachers in our profession who apparently condone, if not encourage, or perhaps even teach, practices which clearly are unethical. The policing required at major livestock shows to curb unethical practices is an indictment on our profession. Can we be a profession if we permit such practices? What positive steps are we taking to correct this problem? Certainly, teacher educators, state staff personnel, livestock show personnel, and parents all have a part to play. In the final analysis it is up to teachers to take remedial action within the rank and file of our profession.

Some Questions

The ideas generated by the authors and my own personal concerns give rise to a number of questions, namely:

- What is the relationship between experiences with animals by vocational agriculture students and their subsequent career choices?
- Is the opportunity to work with animals a factor in the choice of vo-ag teachers to select vo-ag teaching as a career?
- Is the opportunity to work with animals a factor in the retention of vo-ag teachers in the teaching profession?
- How much time is being devoted by vo-ag teachers to

animal science as compared to other areas of the curriculum?

- Are programs in animal agriculture being developed to provide students in urban areas with opportunities for experience with animals?

- Does the animal science curriculum component being taught in vocational agriculture reflect the contemporary animal agriculture industry? Are we utilizing persons engaged in the animal agriculture industry to assist with curriculum development and revision?

- Are preservice and inservice teacher education programs preparing teachers adequately for their role in contemporary animal agriculture?

It is hoped that this issue of THE MAGAZINE will prove challenging and thought-provoking, and that the result will be improved programs in animal agriculture which will be of benefit to every student enrolled in vocational agriculture.

THEME

The Future Of Animal Agriculture

By L.S. POPE

Editor's Note: Dr. Pope is Dean and Director of the College of Agriculture at New Mexico State University.



Domestic animals are truly "dollar earners" in U.S. agriculture, returning \$37 billion in 1979 to farmers and ranchers. Millions of acres of crops and forage, plus vast areas of range land must be utilized by livestock to return a profit. All signs point to an even greater role for livestock, particularly ruminants, as humans around the world compete for grain. Today, the animal side of agriculture is undergoing more change than ever before.

Agriculture must meet the daily needs of about 230 million Americans. The requirements are staggering. Over 150 million pounds of meat products must be delivered to the table each day, requiring a cattle inventory of nearly 110 million head. It takes 15 billion pounds of pork yearly and 122 billion pounds of milk in all forms, yet the supply of quality meat products is so certain that we take them for granted. We even entertain such silly arguments as to whether or not meat is a luxury in our modern world, or whether we should shift to vegetarian diets.

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The Future of Animal Agriculture

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The Past

Looking back, animal agriculture in the U.S. has advanced along a rocky road, often beset by rapid ups and downs. The greatest change has occurred during the past century. Cortez first introduced domestic livestock to Mexico and Coronado provided North America with large flocks of cattle and sheep in his futile search for the mythical seven cities of gold. Settlers on the east coast brought livestock on some of the first sailing ships to provide meat, milk, hides, clothing, and a source of transportation and power.

A few events of the past century that shaped our future are worth remembering. Barbed wire, born in Illinois shortly after the Civil War, helped fence in the vast plains, and lonely windmills, pumping endlessly, opened the great southwest to cattle and sheep. Refrigerated rail cars for transporting a perishable product and the birth of large packing plants at the river markets were milestone events. Federal meat inspection and grading acts in the 1920's greatly increased public acceptance of meat products. The stage was set in the 1940's for supermarkets and large commercial feedlots. These dual events were to reshape livestock history, wedding together the production of specification products, with uniform quality, to year-around distribution.

The 1950-1970 period was a period of rapid change in U.S. animal agriculture. Dairy production was altered by mechanization, artificial insemination, improved feeding, and management. Today, dairymen get more total milk from about one-half the number of cows milked in 1950. Emphasis changed radically toward "meat type" hogs and steers, in line with consumer demands. The advent of hormone additives and antibiotics stimulated greater production, improved efficiency, and allowed feeders to concentrate greater numbers in confinement. New methods of feed processing, and the radical development by Iowa Beef Packers of breaking down the carcass at the packing plant, had enormous impacts on the industry.

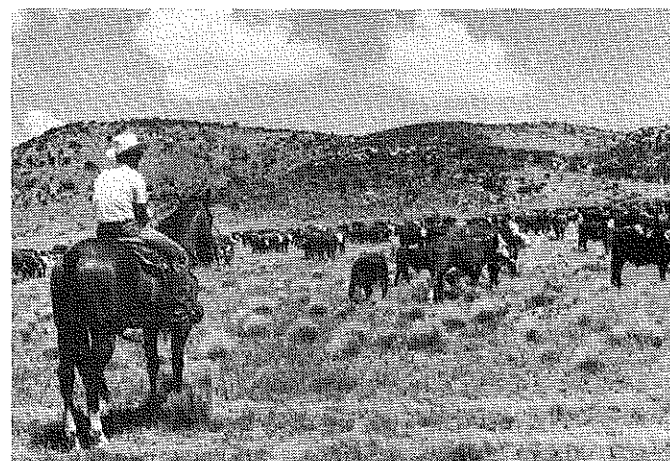
But perhaps the most fundamental change occurred outside the producer level, from changes in consumer patterns and the growth of "fast food" chains. No question, these have made tremendous impacts on the industry. A shift toward the "hamburger" society, where nearly one-half of all the beef consumed is outside the home, is one of the most remarkable events of the past quarter-century. And American consumers were changing with over one-third between 25-44 years of age! Ours is a mobile generation, with 51% of the above ages changing their address each year.

The Future

So we observe history and learn from it — but the big question is: What's ahead? *The answer is change — and more of it.* This will come from within the industry as we develop better and more efficient livestock operations to meet changing consumer demands. It also will be forced on us from without — as consumer demands influence the kind of livestock we produce, and how we merchandize

our meat products. The sheep industry is only one-fourth of World War II levels, for example.

One thing seems certain — animal agriculture in the 1980's will move into the hands of specialists. Professionals will call more of the shots and livestock production will lose some of the time-honored "art" so evident throughout history, and shift more toward science and business. Herein lies one of the greatest opportunities for gifted young stockmen. They can prepare for careers as "decision makers" and managerial roles.



Dramatic change could be forced on the U.S. livestock industry due to outside forces. To cite an example: New processing technology with beef, now rather fully backed by research, shows that we can prepare and merchandize the entire steer carcass — either as quality steaks and roasts for the higher priced trade or as "flaked and formed" cuts. The latter product, resembling steak, is ideal for the restaurant and fast food trade. Thus, one might envision an "all steak" steer carcass. Its impact on our present feeding, management, and selection process could be significant.

If the crystal ball is right, much will depend on the health of the general economy. Today's meat industry is largely oriented toward the needs of busy housewives and convenience, plus the fast food trade and eating-out habits of Americans. Should the economic recession we are now experiencing prove to be longer or more severe than predicted, a shift back to "do it yourself" items may be in the cards. Economists are already concerned about what appears to be a softening of demand for beef against strong competition from pork and poultry in the meat counter. The impact of this can spill over into commercial feedlots, which are highly capitalized and prone to high risk. Also, the recent Russian grain embargo injects uncertainty into future production costs and signals that we are to use food and grain as weapons in economic war. These are sobering times, especially for young producers, heavily in debt and operating on borrowed money.

Another outside influence of great importance is government regulation, already evident in bans on certain hormones and antibiotics and on the nitrates in curing pork. This is only part of the picture. Other regulations affecting the use of chemicals for crop production, predator control, and weed and brush management all ultimately impact on

costs of production and efficiency at the farm and ranch level. The more we regulate, the more uncertainty enters the picture.

But let's look at the positive side. Opportunities still abound for the resourceful stockman. Emphasis in all species will be on improved genetic capability and reproductive rate. Cattlemen, in particular, will seize every opportunity to improve reproduction, speed and rate of gain, and increase muscle mass in the carcass.

The increasing use of artificial insemination in beef herds will be reinforced by new techniques in heat detection and synchronization. Multiple births, sexing semen, and frozen embryo banks, together with the more traditional performance testing and crossbreeding, will gain more attention. Using these techniques, some of the impact of a depressed market might be offset by great animal performance and genetic gain.

More attention will surely be given to marketing, or rather merchandizing, in both meat and the live animal. For too long, producers have been excelling in production, but performing poorly at the market place. Essentially, we are no more than "price takers." Through various contractual arrangements, or by forming bargaining associations, stockmen will seek to build up more "market muscle." The big challenges: to form the right kind of organization, one that works for and through producers, and to surrender some of their time-honored independence in decision-making. Bankers and lending agencies may force more use of contracts. Paramount to all this is the need for better market information, and a better understanding of costs and probably returns. Computerized systems for analyzing the operation will grow.

The dairy industry in the 1980's will continue to concentrate in the hands of larger operators, more dependent than ever on the decisions from federal milk market orders. Pressure will continue for higher quality products, with a lessening of emphasis on butterfat and strong inroads from milk substitutes. Witness the impact of the fast food chains on demand for dairy products — sharply decreasing fluid milk, yet spurring sales of cheese and other dairy items.

Sheep producers firmly believe that they have "turned a corner." There is greater demand today for breeding ewes than at any time during the past two decades. In terms of numbers, sheep have shrunk to a very narrow base, losing many vital processing plants and market outlets. Lamb now represents only a slim portion of the consumer's diet (2.5 lb. per capita yearly). All of this could change. Sheep are our most efficient ruminants in terms of feed conversion and reproductive rate. Wool, one of the natural fibers, has many advantages over synthetics, but sheepmen must not be blind to dramatic changes underway in the spinning industry and the possibilities for blending fibers, both natural and man-made. Frozen lamb, available in supermarket counters year-long, might just change things. In rough times, sheep can turn a profit on much lower initial investment than other livestock.

For the swine industry, growth of confinement units and specialization will continue. The strides made in genetics and feeding will continue, but the industry is especially vulnerable to outside market forces and consumer demand. The past year's performance of hog markets suggests considerable volatility, slim margins, and high uncer-

tainty. Again, genetics will play a big role, with specific lines of swine developed to produce hybrids, although type may swing back to a more moderate base. Continued pressure on antibiotics and nitrates can be expected. Marketing organizations could well develop, under the scan of the computer.

For the beef industry, the biggest change of all may be upon us. Of profound importance may be a shift in consumer demand, after two decades of high priority for beef. Pork and poultry products appear favorable to many budget-conscious housewives. Yet opportunities abound for cattlemen who study the lessons of the past. We have realized only a fraction of the maximum gain possible from use of crossbreeding. Many larger operations will develop integrated programs from "range to rail" through contractual arrangements with feedlots. By doing this, they can expand returns, improve overall efficiency, and capture more of the genetic potential bred into their cattle. The needs of specific markets or outlets for the product will be watched closely. Holding down the industry are staggering interest rates and long-term financial commitments.

Exotics may fade somewhat in importance, yet crossbreeds with more scale, size, and stretch will predominate. Right around the corner are shifts toward more short-fed cattle from feedlots, young bulls, and a relaxing of grading standards, perhaps even to a "time-on-feed" basis.

Opportunities

For young stock producers about to enter the arena of animal agriculture, the opportunities of the 1980's and beyond will be exciting. One must become a specialist — skilled in business — a real "pro" in both production and marketing. Knowledge of finance and business takes on added importance.

The opportunities are there for resourceful and energetic persons. Preparation through the college level will be a major avenue toward success. Many colleges are now offering profession-oriented graduate degrees to better prepare the "decision makers" of the future. Bob Zuppke, long-time football coach at Illinois, used to say: "When the going gets tough — the tough get going." Such will be the need in the U.S. livestock industry in the years ahead.

Themes For 1981 Agricultural Education Magazine

Time Management	January
Community-Based Programs	February
Keeping Up To Date	March
Programs in Agricultural Supplies and Services	April
Energy Education	May
Adult/Young Adult Education	June
Professionalism	July
The Beginning Teacher	August
Student Management	September
Teacher/Professional Liability	October
Using Research	November
Relationships with Agricultural/ Educational Agencies	December

Preparing Teachers in Animal Agriculture

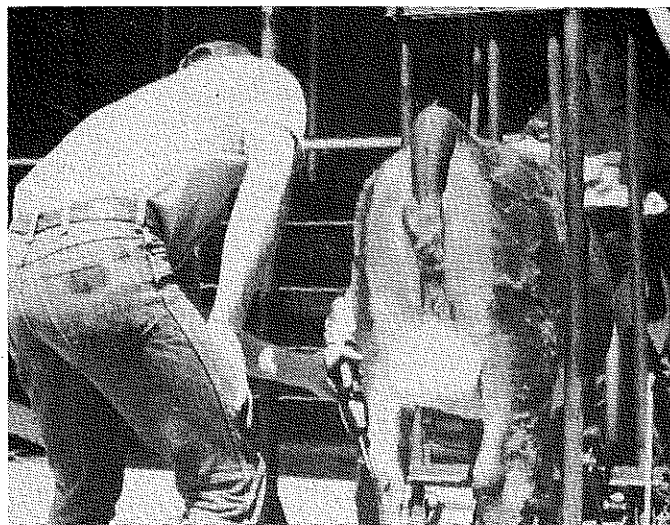
Since the beginning of vocational agriculture in the public schools, animal agriculture has played a significant role. In each state, different interpretations are applied as teacher educators develop varying plans to prepare vocational agriculture teachers for their role in animal agriculture. The result is that all teacher education institutions plan strategies at both the preservice and inservice levels to meet the needs of teachers.

The nine universities certifying vocational agriculture teachers in Texas are actively involved in inservice as well as preservice activities. Texas has always emphasized animal agriculture, reflecting the vast animal industry in the state.

Agricultural education majors who have had vocational agriculture in Texas high schools usually have strong backgrounds in animal agriculture. The SOE programs are primarily animal oriented with an emphasis on livestock shows. There are local, county, regional, and state livestock shows and judging contests available to FFA chapter members choosing to participate. Parents of many FFA members are either farmers or ranchers and their incomes are derived in part from involvement in animal agriculture. As these students enter teacher education programs, they generally have an intense desire for more knowledge about animals, and tend to select animal science courses as electives. This is also true to a large extent for students who have not had high school vocational agriculture.

Preservice Education

Each university curriculum must meet the state minimum requirements for certification with at least nine semester hours in animal science. Universities may, however, require additional hours to meet individual university standards beyond the state minimum. While there is



University students learn fitting skills their high school students will need.



By JERRY STOCKTON

Editor's Note: Dr. Stockton is Chairperson of the Department of Agricultural Education at Texas Tech University.

significant variation in the elective course content in the various universities, the required nine semester hours of animal science have strong commonalities. In most cases, students are required to take an introductory general animal science course, a nutrition course, and a livestock production course. The introductory course includes selection and reproduction, as well as management and marketing of beef cattle, swine, sheep, goats, and horses. A laboratory is required in the beginning course. The nutrition course requires students to concentrate on plant and animal composition, feed consumption, digestion, absorption, storage, utilization, and excretion. Either a general livestock production course may be offered or specific production courses in swine, sheep and goats, beef cattle, and horses.

Additional preservice courses often selected by the students include animal breeding, livestock judging, meat selection, evaluation and grading, reproduction, and livestock marketing as well as dairy science and poultry science. Some universities offer a course in livestock management skills and in selecting, feeding, fitting, and showing beef cattle, swine, sheep, and horses. Many students will complete their preservice course requirements with eighteen semester hours or more of animal science courses. With their animal science background and their preservice training, they have sufficient competency in animal agriculture to begin teaching.

Inservice Education

As young teachers assume teaching roles, they quickly realize that many skills accrue only with experience and additional training. Animal agriculture changes rapidly. Interested teachers seek every opportunity to accumulate knowledge and skills which will help them increase competence. Competition is brisk and vocational agriculture teachers take great pride in their students who win livestock shows and judging contests.

Inservice education in animal agriculture is offered primarily during the summer months. Each university includes needed inservice training programs. Most teachers attending the one- and two-day workshops are employed in schools located within reasonable driving distance. For the teachers to be eligible for travel and per diem reim-

bursement, the workshops must be approved by the Texas Education Agency. The accumulated listing of all approved inservice workshops is then mailed to all vocational agriculture teachers and their respective school superintendents. The teachers must have the approval of their superintendents before they can receive reimbursement for expenses. Each teacher is eligible to attend a maximum of one week of inservice training. In the summer of 1980, one-third of the workshops were oriented to animal agriculture. This might seem unusually high, but the workshops are designed with input from the teachers themselves.

The workshops in animal agriculture cover many areas. Teachers request judging and showing workshops more often than other specific areas of animal agriculture. In the summer of 1980, for example, workshops were offered in judging livestock, dairy cattle, poultry, meats, milk quality and dairy foods, range and pasture, and land. In many cases teachers who have a reputation of training winning teams will either teach or assist in teaching the workshops. Successful teachers are usually willing to share their knowledge with others.

Each summer, the state inservice workshop for teachers of vocational agriculture is held in one of the major cities in Texas. The five-day conference allows adequate time not only for necessary meetings but for workshops of one to three hours in length. The workshops are structured by vocational agriculture teachers and are quite successful. Several are offered at the same time to allow teachers to select the workshops they wish to attend. Animal agriculture is probably the most popular subject. Fitting, feeding, showing, school farm laboratories, judging, selection, and pre-employment laboratory training courses regarding animal agriculture are in demand.

Inservice education is available during the school year and the summer months for adult education programs in animal agriculture. The agricultural education adult specialists who teach the non-credit, 12-hour shortcourses are employed full time and travel the State teaching the courses on four consecutive evenings. Two specialists in beef cattle and one in swine are available. The shortcourses are popular with the adults in the community, and they serve as inservice programs for vocational agriculture teachers. Some teachers establish their own shortcourses utilizing local resource personnel or available university personnel in their area of the State.

Three-week, non-credit, summer shortcourses are offered in pre-employment laboratory training for those teachers employed to teach a specific program but who did not certify in that area as an undergraduate student. There are eight pre-employment laboratory programs taught at the high school level in Texas, two of which are animal agriculture courses in meats processing and feedlot employment. These courses are taught two consecutive 55-minute periods each day to junior- or senior-level high school students. Teachers need additional knowledge and skills beyond the production agriculture level to teach these courses. If they do not have the specific university background, they can attend a summer short-course. The courses are taught eight hours each day for three weeks. They are funded and coordinated through the Texas Education Agency and taught in different universities according to need, location, expertise, and facilities. The inten-

sive training is apparently of great benefit to the individuals who complete the shortcourses.

Summary

Animal agriculture is a significant industry in Texas. Many of the vocational agriculture teachers have animal agriculture backgrounds. Preservice courses are available at the university level. Inservice training is available for many teachers. The competition involved in animal agriculture keeps them motivated and active.

Teacher preparation in animal agriculture will continue to be a challenging, changing priority. Today's methods will become tomorrow's history. As economic, technological and scientific changes, governmental action, and other factors continue to impact animal agriculture, teacher educators and state staff personnel must listen with an open mind in order to prepare teachers effectively for their role in animal agriculture.

How Animal Programs Develop Young People



By WYLIE C. TALIAFERRO AND CHARLES W. CASADA

Editor's Note: The authors are vocational agriculture instructors at Scurry-Rosser High School in Scurry, Texas.



A changing set of values and circumstances constantly affects the teacher of vocational agriculture. We have been faced by fund problems, parental attitudes, turnover among teachers, state and federal government regulations, and new programs. One force that has remained steady has been the use of livestock as a motivational tool. Students need more motivation now than ever before. Many times students need only a small boost to start them on the road to success. The use of livestock in teaching can serve this and many other purposes.

Students who work hard at training, feeding, cleaning, and using T.L.C. (tender, loving care) on their show animals will have a carry-over value in other phases of their school and home life. For many, an animal may be the very first thing that is really theirs to possess. They must see to all of its needs. It is easier to accept challenges and responsibilities in life if they have had practice meeting them head-on. Showing and caring for animals gives them this edge.

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How Animal Programs Develop Young People

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We like for students to start off, struggle, experience some failure, and then put forth extra effort and win as a result of their diligence. Winning is not everything. All the events that lead up to winning make for a teaching program. It has been said, "The mark of a good teacher is when students do not know when they are being taught." Teachers can use animal science to teach without the students knowing it. Some of the techniques and values they learn on trips to select animals and to participate in livestock shows are not realized until later in their lives.

Selling Parents on the Program

Parents may question the value of a show program and the expenses involved in purchasing good animals, feed, and other necessities. Our approach is to convince parents that a busy young person will be more likely to stay out of trouble. There are many different environments, people, and situations encountered as students participate in livestock showing. With proper supervision and guidance by the teachers, students can learn to make wise decisions as they meet challenges and temptations. We try not to sell our program as a money-maker, but as a way to guide and teach young people.

Choosing Projects

We believe that students should be able to choose their own type of project. Students need assistance in choosing the kind and breed of animal. By specializing or having one or two breeds among FFA chapter members, students can become very competitive. Establishing rapport with a breed opens doors for our students. They can often buy higher quality animals for less money. This brings added pressure on the teacher as breeders expect to see that the best possible job is done with the top animals from their herds. Students, through close contact, establish themselves with these people. This, in turn, leads to much needed help later in their lives.



Hard work produces a Grand Champion at a state fair.

Academic Requirements

We strongly recommend some sort of grading system and requirements for students to meet in order to be eligible to participate in livestock shows. A student who cannot pass in school surely cannot pass if he or she is out of school on a trip. We must be sure that our program is compatible with the total school program, rather than fighting local school requirements.

Rules

Teachers must be firm and fair and take no excuses for wrong doing. Rules about drinking, smoking, dress, grooming, and neatness may be needed. We can teach values to students in our program.

Winning and Losing

Most people can win graciously. Losing graciously is a real test of character. Our program is designed to build character, values, and responsibility. We learn more from losing than we do from winning. When we see our students pull for each other, then we know they will be the type of people the world must have to survive.

Developing Self-Esteem

Young and old alike need recognition and praise. Our job as teachers is to build self-esteem for our students. We can praise the jobs our students are doing in feeding and fitting, offer constructive criticism, and counsel with them on problems. A student doesn't need super athletic abilities or superior grades to be top in the show ring. Our programs should give the marginal as well as superior students a chance to succeed if they want to participate.

Motivating Students

Students do what they want to do. If properly motivated, they can achieve success. Our program keeps from six to eight students in school each year who otherwise would drop out. Sometimes a show program will get teachers so close to students that it will create an extra demand of time for counseling because the students look up to the teachers for help. This is not a disadvantage, but a real chance to be a teacher.

Developing Decision-Making Skills

Raising show animals teaches students to make decisions and how to plan ahead and budget time. If students can learn to think, the teacher's job is justified. It teaches them to decide when and what to feed. It teaches how to be in charge and totally responsible. The old used up clichés of building character and responsibility through our animal programs are true.

Developing Money-Management Skills

We have developed a supportive relationship with a local bank. Many of our students have borrowed their first money and established their credit rating through our animal program. In 15 years, we have never had a student fail to pay off a livestock loan. Meeting people in obtaining a loan and paying it off are valuable experiences for youngsters. Every part of a show program can be used to teach important skills and values.

Developing a Cooperative Spirit

Our youngsters help each other. Our past students help current and future students. This has established a tradition of cooperation.

Problems and Rewards

It is important to realize that teachers involved in animal programs may encounter problems. Administrators may fail to understand the programs. It is essential that the program be fully explained to them and that they be informed of all field trips, results, and methods. Fellow teachers in the school need to understand the program. This helps when students need to be away from classes. Parents need to understand and be kept informed on program activities, especially if they are to be supportive.

Rewards teachers get as a result of a show program include:

1. Seeing students excel and do more than they thought they could.
2. Improving community ranching programs and the quality of livestock.
3. Seeing students cope with new environments and situations.
4. Getting students developed financially so they can continue their education beyond high school.
5. Seeing students develop pride in themselves as they win honors and awards.

Is it worth the effort? Based on our experiences with hundreds of youngsters over the last several years, we answer this question with an enthusiastic "yes"!

THEME

A Non-Traditional Animal Agriculture Program

Sue, a high school senior, lives with her parents and pet cat in a suburb of Dayton, Ohio. Her goal after graduation is to be employed caring for animals. The chances that Sue will attain this goal is slim unless she is enrolled in one of the seven Ohio Animal Production and Care vocational programs. Fortunately, she is a member of the Montgomery County Joint Vocational School Animal Production and Care (AP&C) class, a part of the vocational agriculture/FFA program.

The Program in AP&C

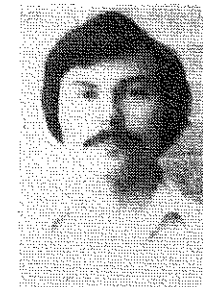
For two years Sue and her 24 classmates have been studying to prepare themselves for employment as pet groomers, pet shop employees, kennel workers, and licensed assistant laboratory animal technicians. In order to prepare for this specialized work, AP&C students spend three hours each day grooming dogs, caring for the school and FFA animals, performing laboratory animal health checks, and operating the pet shop operated by the school. Besides the daily three-hour laboratory, students attend 90 minutes of related class and 40 minutes of academic class.

The local course of study for each AP&C program is patterned after the Ohio Animal Production and Care Curriculum Guide with input from a local advisory committee. Instructors for the classes have a variety of animal-related experiences including research, pet shop sales, veterinary technician, dog grooming, and dog training. Most of the instructors also have a baccalaureate degree in biological or animal science.

In the animal health field, students learn handling, sexing, and methods of identifying laboratory animals. Cats, dogs, mice, rats, hamsters, guinea pigs, rabbits, and monkeys are used for individual animal identification, blood drawing, and practicing handling and restraining

BY STEVE JOHNSON

Editor's Note: Mr. Johnson is Vocational Agriculture Instructor at Montgomery County Joint Vocational School, Clayton, Ohio.



techniques. Other important skills in animal health are identifying anatomical parts, testing for and identifying veterinary biologicals, and mixing and using disinfectants.

Student groomers start by answering the pet shop telephone and scheduling grooming appointments. When owners arrive with their pets, students greet the customer and record information on the work to be done on each of the five pets groomed each day. The pet grooming involves combing, nail clipping, ear cleaning, hair clipping, bathing, drying, and scissoring all breeds of dogs. Just as in industry, students keep a file on the style of each pet groomed. The grooming is not limited to only dogs. Cats, skunks, a pet goat, and a lion have been groomed by the students.

AP&C students are responsible for the breeding, feeding, cleaning, and caring for the health of the school's animals and the FFA chinchilla herd. The AP&C classes pelt 50 chinchillas each year from the 150 animal herd with the profit going into the FFA budget. During their two years, students are required to complete two production projects and one research project. One production project is done at school with school animals. The other production pro-

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A Non-Traditional Animal Agriculture Program

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ject can be done at home in the summer between the junior and senior year or in the fall of the senior year at school for students unable to raise animals at home. The research project is an animal data study to help students gather measurements on animals, work with numbers, charts, and graphs, as well as report these data in an approved form.

FFA Participation

FFA awards that students apply for include the State Farmer Degree in Animal Production and Care and the Animal Care State Proficiency Award. To apply for the State Proficiency Award, students must have experiences in four of the following animal related areas:

Business Management
Dog and Cat Management
Animal Laboratory and Animal Health
Small Animal Management
Large Animal, Zoo, or other

Students are encouraged to compete in the State AP&C skills contests. Industry experts assist the instructors in



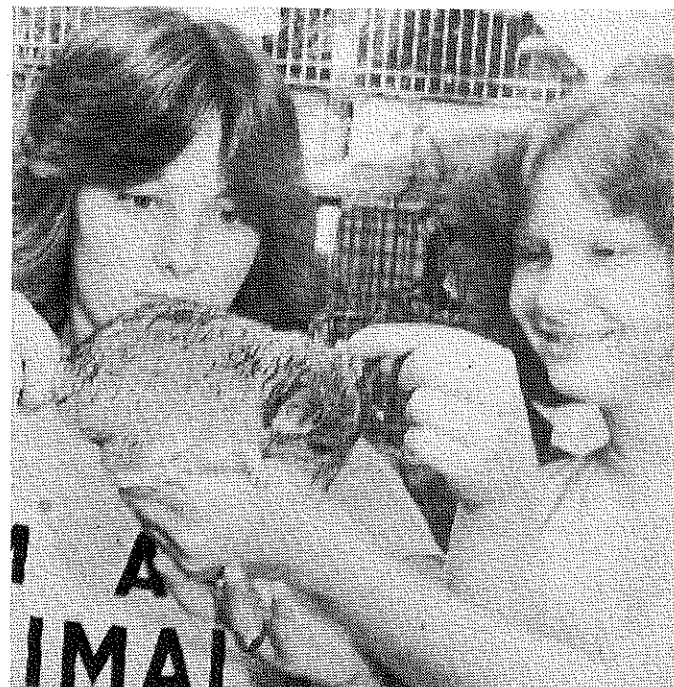
Skills with small animals include dog grooming.

preparing the contests. Industry people also judge the pet shop, animal health, dog grooming, and dog obedience contests. Students must demonstrate ability in performing industry skills related to that job. By competing in one of the skills contest areas, a student can be eligible to receive industry recognition. For achieving a passing score on the animal health skills contest, a student receives national licensing from the American Association of Laboratory Animal Science as an Assistant Laboratory Animal Technician. This certification is required by most animal laboratories as a prerequisite for employment. Skill certification in other contest areas enables students to be more competitive in acquiring employment, since they have achieved a level of expertise in that field.

Student Placement

In 1980, Mr. Robert Nehring, senior AP&C class instructor, achieved over 75% placement in animal related employment of the 23 students in his class. Most years over half of the students employed have jobs in dog grooming, pet shop sales, veterinary office, and laboratory animal facilities. Other related jobs include show dog handler, kennel worker, and horse, livestock and dairy farm hand.

Sue and other urban students can obtain employment caring for animals if they have the necessary knowledge, experience, and skill which employers find necessary. Through the FFA production projects, the in-school laboratory, and the related class instruction, young people are fulfilling their goals of working in a career caring for animals.



Students work with chinchillas in the Animal Production and Care Class.

THEME

Developing Competencies in Animal Agriculture

Increasingly, students enrolling in vocational agriculture do not have a farm or ranch background. Many of the students are girls. They may be learning skills which are new to them. Some students enter the vocational agriculture program unaware of what the program has in store. Vocational agriculture instructors have a challenging task to take these young students and help them develop their abilities to the greatest extent possible. Some ways of helping students develop competencies needed in animal agriculture are discussed in this article.

Supervised Occupational Experience

What type of instructional material and program will work with students who have very little practical or "hands-on" experience? Many vocational agriculture and FFA programs are being criticized for lowering requirements for enrollment. We need supervised occupational experience because it is an excellent tool to assist young people in developing skills associated with animal agriculture. Records of the farming program should be kept carefully and accurately, whether the project is a 100-cow herd or only one calf. The ratio of pounds of feed to produce a pound of gain should be figured on one animal as carefully as it is on a 100-steer feed lot. A vo-ag program that does not include supervised occupational experience is neglecting the instructional needs of students.

Certain degrees of responsibility and knowledge that come from owning and caring for an animal will remain with students all of their lives. Livestock projects promote proper feeding and watering practices, disease prevention and control, proper shelter establishment, and buying and selling techniques. Several advantages are as follows:

- Develops cooperation. Students help each other to care for and work with animals in areas of feeding while on vacation, grooming at livestock shows, delivering of the newborn, and sharing knowledge.
- Utilizes material taught in the classroom.
- Develops closeness between parents and students as parents realize that students can take on important responsibilities.
- Provides opportunities for students to begin careers in agriculture.
- Helps students to solve problems, form judgements, evaluate, make decisions, keep records, and, possibly, make a little money.
- Motivates students to excel. Livestock shows cause students to be aware of quality animals.
- Develops pride of ownership. Many times this is the first thing students have ever owned.

Judging Contests

Judging contests can be used for instructional purposes. Several areas are included here.

By LARRY MEEKS

Editor's Note: Mr. Meeks is the Vocational Agriculture Teacher at Skiatook High School in Skiatook, Oklahoma.



Livestock Judging. This contest prepares the students for selection of their animal herds, whether it be sheep, swine, or beef. Many students who have animals need to be able to up-grade their herds by the addition of quality breeding stock.

Dairy Cattle Judging. This contest helps the students who live on dairy farms by enabling them to keep up with new breeding lines. It also keeps them aware of the selection of certain bulls for improvement of each individual cow.

Poultry Judging. Students involved in this contest are better able to select the proper pullets for their flocks and to cull out hens that are non-productive. If they choose a broiler project for their supervised occupational experience, they are able to select birds that will produce quality and quantity.

Classroom Instruction

Instructors should make class an informative and interesting place for the student to learn about the livestock industry. Classes should be followed up with field trips and other activities that pertain to the subjects being studied. The learning process is enhanced by first-hand observation of those things studied in the classroom.

In order for the student to develop competency in any area of agriculture, the material must be well organized and properly presented by the instructor. Dedicated vo-ag teachers are always helping students better themselves. The concepts students have of themselves and their projects can be promoted by the vo-ag teacher. Teachers should work hard to motivate freshman students to become competent in the areas of animal selection. Most instructors believe that by the third or fourth year of class, students should be able to carry on a quality supervised occupational experience program with much less assistance from the teacher. Students should develop in selecting, caring, and culling procedures for the herd so as not to be dependent entirely upon the advice of the instructor.

In summing up the competencies developed in animal agriculture, we must consider one of the best tools of motivation — the FFA. Vocational agriculture and the FFA compliment each other in many ways. The FFA organization has developed many programs that enlighten and motivate students. The FFA is a positive force to be utilized by all instructors in developing sound and useful skills.

Personal Development For Agricultural Industry . . . Dressing For Success

One of the qualities of vocational agriculture/agribusiness programs which makes them worthwhile is the emphasis on developing the total person. In the classroom and laboratory, through supervised occupational experience programs, and in most FFA activities, we attempt to build the personal qualities which help students succeed. Only teaching specific technical job skills will not prepare individuals for a successful career.

Projecting a Positive Image

It is common knowledge that employers weigh heavily the image that is projected by a prospective employee. Often, more weight is placed on visible characteristics of applicants than on technical skills in agriculture. Many occupations in agricultural industry, especially agribusiness occupations, require employees to meet the public, get along with people, and project an acceptable image.

Dress for Success

One determiner of an individual's image is the way the person dresses. Agricultural industry employees, as well as other employees, should dress appropriately for the occasion. This does not mean that the standard attire in agricultural industry is a three piece suit nor boots and jeans. The important concept is to know how to dress in various circumstances.

Since this is a skill important to agriculture industry employees, the Department of Agricultural and Extension Education at Mississippi State University organized a "Dress for Success" seminar.

The purpose of the seminar was two-fold. First of all, it taught our students (primarily preservice teachers and Extension agents) how to select and wear clothes. Concepts demonstrated were choosing clothes appropriate for the occasion, determining quality, proper fitting, and coordinating outfits. Secondly, the seminar provided students with an example of how to use a re-

By RONALD A. BROWN, VI MCKEE, AND GAIL SULLIVAN

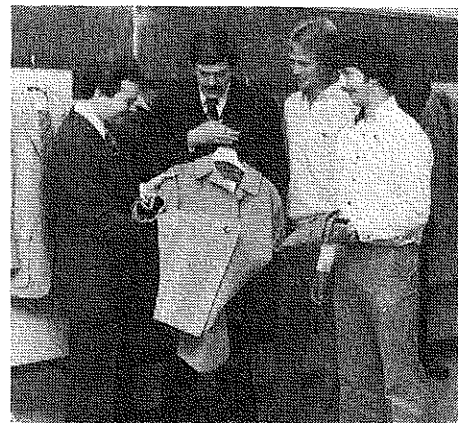
Editor's Note: The authors are in the Department of Agricultural and Extension Education at Mississippi State University. Dr. Brown is Associate Professor and Mrs. McKee and Ms. Sullivan are graduate students.

source person to teach personal development skills.

Procedures

The procedures that were followed may be adapted and used by any teacher of vocational agriculture/agribusiness. The format can also be used for any number of topics. In this case, one of the first considerations was to determine the type of program that was needed and the extent of interest by students. Several personal development topics were discussed with department leaders and students. The most interest was expressed for a "dress for success" seminar.

After the topic was decided, a qualified resource person was sought. The considerations at this stage included the quality of the resource person and willingness to participate. We discussed the goals of the program with a local merchant, and decided that he could provide what was needed. He also agreed to bring a large sample of clothes and to use models to demonstrate what was to be taught. It is im-



The qualities of a coat are explained.

portant to note that a resource person must be "taught" so that the goals of the program will be accomplished. In most cases like this, for example, the resource person would likely not bring clothes and models, but would lecture. Remember that most resource persons have not been taught how to teach and you must tactfully structure the program for maximum educational benefit. After contacting and selecting the resource person, a follow-up letter was written which specified the date, time, location, estimated number of participants, and the goals of the seminar.

Publicity for the seminar was planned next. Handbills were sent to heads of Departments in the College of Agriculture and Home Economics, to graduate students, and to the presidents of youth organizations in the College of Agriculture and Home Economics. Interested persons were asked to notify the Department of Agricultural and Extension Education so a tentative count could be made for purposes of seating, room arrangements, and refreshments.

On the day of the seminar, the resource person brought approximately 30 suits of clothing of various types for demonstrating how to select, fit, and wear clothes for certain occasions. Evaluative data provided by those in attendance indicated that the seminar was a success — both in content and procedure. This information, along with our appreciation, was shared with the resource person.

Summary

Students in vocational agriculture/agribusiness should complete the program with saleable skills. Sometimes we ignore skills which are necessary or assume that they will be learned elsewhere. However, our mission includes development of the total individual.

Can you improve your instructional program by using a resource person? Is the personal development of students in your program one of your priorities? The success of your students depends on your answer.

Why Agricultural Education Is Needed In Belize

By DAVID L. FAULKNER

Editor's Note: The author is currently a Peace Corps volunteer in Belmopan, Belize, Central America. He is a recent graduate in Agricultural Education from Auburn University in Alabama.

they were subjected to occasional attacks by Indians and Spanish military forces.

Spain had claimed the territory of Belize long before the first British arrived, but Spaniards had never settled the area.¹ Early government was discreetly established by the British in the 1800's to deal with the growing population and logwood trade and to try to firmly implant British interests and claim the area by occupation.²

Several treaties between England and Spain from 1763 to 1786 recognized logging rights of England, but firmly asserted Spain's sovereignty by forbidding the development of plantations. The treaties also prohibited any other agricultural venture, with the exception of subsistence farming.³ Those terms were followed through most of the 1800's and even as late as 1945 the export economy of Belize was 90 per-

cent dependent on forest products.⁴

The prohibition of agricultural development encouraged negative attitudes towards farm work. The slaves used in the logging camps were allowed a lot of freedom and long periods of relaxation before work began at the end of the heaviest rains. During these times, they developed condescending attitudes toward the slaves who worked year-round with the subsistence crops. These attitudes persist today among many Belizeans.

Knowing something about the history of Belize is important in understanding present conditions. Today, Belize is a multi-racial and multi-cultural nation seeking economic and political independence from England and a guarantee of territorial integrity from Guatemala. Even today Guatemala claims to have inherited Spain's rights to the area and threatens to invade if British military forces are pulled out or if the territory is granted independence. This uncertainty in Belize's future has the effect of inhibiting outside investment and leaves the development of agriculture to its people, the major-

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Belmopan Comprehensive High School agriculture students display the fruits of their labors — greens from the school garden.

Why Agricultural Education Is Needed In Belize

(Continued from Page 15)

ity of whom are without a history of agriculture to build upon.

The legacy of Mayan civilization and colonial exploitation by Spain and England is still exerting tremendous influence upon Belize. The problems of development are many and very complex, but the government realizes that the future of Belize lies in an economy based upon agriculture and fishing, since Belize possesses no other known natural resources.

The development of agriculture and its diversification has been relatively rapid in the last twenty years, but Belize still isn't completely independent in staple foods production. The main agricultural products today are citrus, sugarcane, rice, bananas, corn, red kidney beans, beef cattle, and broilers.

Vocational Agriculture in Belize

The agricultural program of which I have been a part for almost two years came about as a recognition of the need to change attitudes, stimulate interest, and hopefully lead young Belizeans into agricultural careers. Belize has a shortage of trained teachers and skilled workers and fills some of these positions with American Peace Corps volunteers, of which I am a member. Located in the capitol city, Belmopan, (approx. 4,000 people) I teach at the Belmopan Comprehensive High School which serves the children of high level government officials, civil servants, and villagers who come in each day from the surrounding area.

Early in my service here, the principal (Michael Price) and I outlined the goals of the program: to develop an agricultural curriculum relevant to Belize and the tropical conditions and to provide the students with learning experiences through practical projects. We started the 1978-1979 school year without tools, supplies, or textbooks and only the beginnings of the curriculum, which I had complete freedom to develop.

Under these resource restrictions and with communicative problems due to cultural differences, we began the year with great skepticism on the part of the students. Fortunately, my principal

secured a grant from the Canadian government to purchase hand-tools, and by January, 1979, we were well on our way with a school garden project and field crop demonstration plots. Our first challenge was with the garden soil — a very shallow, rocky, heavy clay subsoil with very poor structure and essentially no organic matter. When the school was built 9 years earlier, the bush and topsoil were moved off the school compound. The soil was leached, unprotected during rainy seasons and burned over by bush fires every dry season. First we began removing rocks and bringing the topsoil back with wheelbarrows and adding composting organic matter. Our rebuilding of the soil structure and fertility is continuing. What once barely grew coarse grass now produces abundantly. It was difficult, but through that experience, the students learned the basis of crop and soil science and gradually developed a new concept of what agriculture is all about.

Through our own fund-raising projects (a raffle, slide show, donations, plant sale, and vegetable sales), the help of local farmers (both milpevas and modern agriculturalists), and the 4-H organization of Belize, we have been able to purchase seeds, fertilizer, and other expendable supplies. We have expanded our projects to include the raising of broilers, a lamb, two pigs, and meat-type rabbits. Soon we hope to expand our broiler project and add laying hens to our program.

All of this was not achieved without a lot of hard work and adaptation to overcome the many problems con-

fronting us. Our story is one of "learning by doing." The challenges and frustrations were often the same, but I have received great satisfaction from the results. Besides coping with the very harsh climatic and biotic conditions of the tropics to produce agricultural products, the students and I have learned that there are many problems in life. We learned that there are reasons behind those problems and that only through communication and sincere motivation to help each other can those problems be overcome.

A Great Experience

My experience here has been a wonderful opportunity to give and to receive. I have come to realize how blessed our own country is and how many Americans take those blessings for granted.

When we first began the agricultural program at our school, I had to push and pressure the students. Now, through their accomplishments and subsequent increased interest, they are pushing me! I find this very gratifying and the source of many new challenges. Many of the students now have their own home garden and livestock projects. Our experience together has taught me that the only thing we keep in life is what we give away!

References

- ¹Dobson, Narda. A HISTORY OF BELIZE. Longman Caribbean, Limited, Publisher, Crown Copyright 1973, pages 185-186.
- ²Ibid. pages 87-96.
- ³Ibid. pages 82-86.
- ⁴Ibid. page 265.

BOOK REVIEW

AGRICULTURAL ECONOMICS AND AGRIBUSINESS: An Introduction by Gail L. Cramer and Clarence W. Jensen, Somerset, NJ, John Wiley and Sons, Inc. 1979, 440 pp. \$18.95

Modern farming is a complicated business. Agribusiness can be understood and predicted with a good background in technical agriculture and sound training in agricultural economics.

This book provides the reader with a structure of agriculture and discusses economic principles as they apply to agriculture. The main topics include American agriculture, consumer behavior and demand, decision making,

supply and price determination, marketing regulations and commodities, finance, natural resources, agricultural policies, agricultural systems, international economics, and rural development.

The textbook is designed primarily for students interested in basic agricultural economics concepts. Some advanced agricultural economics concepts are presented. Therefore, it should serve as an excellent reference for college students, senior high school agriculture students, and college and high school agricultural instructors.

Woo S. Ahn, Instructor
Sedan, Kansas

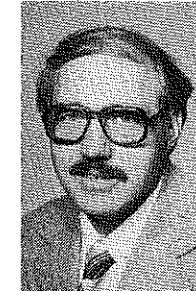
ARTICLE

Competency-Based Instructional Programs in Animal Agriculture

By MAX L.

AMBERSON

Editor's Note: Dr. Ambersson is Head of the Department of Agricultural and Industrial Education at Montana State University.



Tremendous efficiencies have taken place in animal agriculture. Changes have occurred because people in this industry determined what changes needed to be made and then set about making them. As a result, each year several animal species production and efficiency records are broken. Good management has become the key in every phase of the animal industry. Persons fulfilling management roles, therefore, must possess a combination of the right competencies — knowledge, skills, attitudes, and experiences — in order to perform at expected high levels.

Historically, vocational agriculture curriculums in animal science were based on the approved practices determined essential to growing, managing, and marketing each type of commercial farm animal. Each species of animal, such as hogs, cattle, sheep, horses, and chickens, became a separate course. The approved practices made up the body of courses and were learned and hopefully experienced by vocational agriculture students. Approved practices were often limited to production and did not consider knowledge, skills, or experiences necessary in financing or marketing of animals.

The trend in teaching animal science has been to identify the common and specific competencies needed by persons employed in the several animal science fields. Courses were based on these knowns. The competencies, when determined, have been commonly clustered into broad areas, such as breeding, nutrition, animal care, disease control, and management.

Common competencies have become the base for course objectives, subject matter material, and methods. Common competencies are those competencies which are essential for all employees whether in production or agribusiness. The common competencies are generally selected because of their commonality across animal species lines. Determining common

competencies and selecting appropriate subject matter material also is efficient use of time, since there is little need to repeat each competency with each species of animal.

Basing courses on competencies needed by employees provides the accountability demanded of modern day programs in vocational agriculture. Unique/specific competencies are those knowledges, skills, attitudes, and experiences which agriculture employees must possess in order to enter and advance in a specific job title. These competencies are not needed by all agriculture employees and, therefore, they need not be taught as part of a core animal science curriculum to all vocational agriculture students. Unique/specific competencies are commonly taught the last one or two years of specialized high school vocational agriculture programs or in specialized programs at postsecondary area vocational schools or community colleges. Examples of these types of specialized programs are meat cutting, feed lot management, livestock marketing, dairy herd management, horse management, and sheep shearing.

Basing instruction on competencies provides vocational agriculture teachers with information needed to determine teaching methods to be used.

Determining Competencies To Be Taught

Determining the competencies to be taught is a time consuming and painstaking effort. In only a few instances

is it necessary for each teacher to take the time to identify those competencies needed by students. A number of individual state efforts in Montana, Ohio, Mississippi, Arizona, and California, and a U.S.O.E. sponsored nation-wide study to determine competencies needed by workers in agricultural production/agribusiness have been conducted. The individual state efforts in animal science and other areas are available upon request from state teacher training departments and should be used. The national study is available by writing Byron Rawls, Program Specialist in Agricultural Education, Office of Education, Division of Adult and Vocational Education, Washington, D.C. This is an extremely valuable document for teachers planning animal science courses.

Where to Start

The old saying "getting started is one-half of the way towards completion" is true in many instances. If you read this article, why not take a minute to write and acquire the several studies mentioned. Take a look at the courses you now teach in animal science and ask yourself, "are there common competencies which I am teaching several times?"

During the coming year, as a suggestion, you might put up some large sheets of paper on a bare wall and begin to list common competencies under several units of instruction, such as breeding, nutrition, management, and disease control. In time, you will have competency-based instructional units.

If time does not permit, several state curriculum labs and one commercial book company are now publishing competency-based materials for your use.

Employers want their employees to provide tangible evidence of what they know, and are able to do. What better way is there for students to provide

(Continued on Page 18)

Report on a Postsecondary Program: Using Computers in Farm Management Education

One of the most discussed topics in agricultural education in recent months has been the use of computers in farm management education. At the University of Minnesota Technical College, Waseca (UMW), computers play an important role in farm management education. A course in computer-based farm management has recently been added to the curriculum. This new course is the result of a long-term plan to develop a strong farm management thrust at UMW.

The Minnesota Farm Business Management Analysis System¹ has been used for many years by the students enrolled in the applied farm accounting course and the Home Farm Pre-Occupational Preparation Program (POP) to analyze the records of the student's home farm business.² The farm account book is maintained for a full accounting period, prepared for analysis, and then sent to the Specialized Data System computer. The annual area reports, which summarize the records of all participating farmers into high, low, and average groups, are used as an information and data bank by the students. The Austin area sample farm analysis is used as a teaching tool in both the Home Farm POP and Applied Farm Accounting courses.

The Program at Waseca

Eight years ago at UMW the MECC

Competency-Based Instructional Programs In Animal Agriculture

(Continued from Page 17)

this documentation than to show them they have completed specific competencies at a level specified by their instructor. If you were an employer, would you be impressed if a student



By MYRON A. EIGHTHMY AND
BOYD FULLER

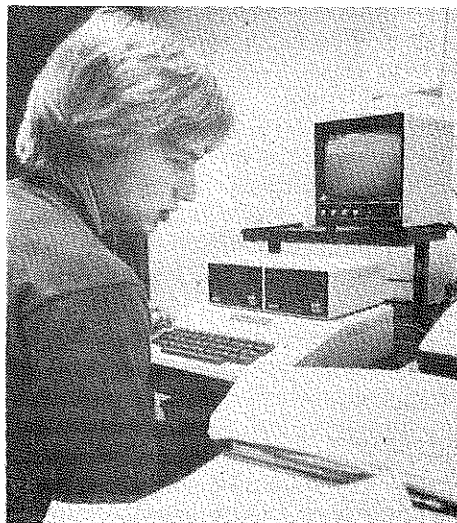
Editor's Note: The authors are Farm Management Instructors at the University of Minnesota Technical College, Waseca, Minnesota.

(Minnesota Educational Computer Consortium) system computer terminal was used to aid students in developing a feasibility study for expansion of the home farm. The decision aid programs FINAN, FINLRB, and FINTRAN were used to evaluate the financial plans, transition period economics, and profitability of planning alternatives. However, at that time it was determined that there was not enough available time in a quarter to teach both the fundamentals of financial analysis and computer analysis within the existing courses and with existing faculty. Therefore, the analysis provided by the Minnesota Farm Business Management program was the only computer-based material used

presented you with a portfolio of tasks they could perform? I would. As vocational educators, we are not yet at that point, but do feel to be accountable. We will be expected to come closer to identifying specific knowledges, skills, attitudes, and experiences that our students have developed as a result of our teaching efforts. Making your animal agriculture course competency-based would be a first step towards this end.

to teach financial management and business analysis. With the addition of another instructor in the summer of 1979, the needed courses and expertise became available at UMW to provide training in the use of electronic farm management tools. The new course utilizes programmable calculators, microcomputers, and computer terminals in day-to-day accounting, farm budgeting, and financial analysis.

As computers were incorporated into our farm management course, we found that most students became more interested in accounting and budgeting. These are often thought of as unexciting and tedious tasks. The use of programmable calculators and computers has also stimulated interest in the entire planning process. The Principles of Farm Management and Applied Farm Accounting courses are used to provide students with a knowledge of accounting, records analysis, budgeting techniques, and economic principles. The computer has enabled the students to explore more thoroughly the home farm records analysis and the effect of management alternatives on the home farm business.



One of the most effective tools that is being used is the microcomputer. A microcomputer has the capability to keep day-to-day farm records and accounts and serves as an electronic file cabinet for storing crop and livestock records. The microcomputer provides us with the ability to analyze records on any given day rather than at the end of the month or at the end of the year as many farm accounting systems allow. Furthermore, the student sees it as a viable alternative to present systems. The microcomputer tends to be a low-cost system which could easily be obtained. It provides flexibility for the manager to input home farm records based upon the needs of the home farm.

The "Scare Factor"

One of the greatest barriers to overcome in the use of computers in farm management is the "scare factor." That is the reluctance of the individuals to work with computers because they have a fear of the complexity of the machine.

An objective of the course is to provide the opportunity for students to overcome this scare factor. Students become familiar with computer systems, basic terminology, and fundamentals of computer operation and develop a willingness to work with computers. Once they understand the system and what it can do for them, they tend to lose their fear of working with computers. Furthermore, it helps students develop the ability to speak intelligently with technical representatives of computer firms and provides an understanding of the applications of

computers in the entire field of farm management.

The End Product

The end product of the computer-based farm management course is a complete management plan for a farm. Topics included in this report are the history of the farm, maps of the farm, present inventory of farm land, labor, and capital, as well as plans for the future use of these resources. A calendar of management activity and labor demand is an important part of this student report. A list of all capital assets and their condition is used to develop a replacement schedule for farm equipment. Current year enterprise records, the farm's net worth statement, current year profit analysis, and projections are computed.

A major part of the student's project is the development of budgets for future planning periods. The students set management goals for each farm enterprise. The goals are then transferred into economic data for budgeting purposes. The cash flow of the past year is used as the starting point for projecting future cash flows. Budgets and cash flows are analyzed by computer to determine the economic feasibility of the management plan. Students are challenged to develop the best combination of short-term plans which will provide the greatest income while achieving personal and business goals.

A summary of the project is the final portion of the student's farm management plan. The summary includes the conclusions and limitations of the plan. By completing an in-depth home farm

analysis such as this, the student becomes much more aware of the home farm financial situation. Students learn much more about planning and budgeting and the need for keeping accurate home farm records and accounts. Emphasis is placed on collecting the most accurate information that can possibly be obtained. By using the programmable calculator, microcomputer, and MECC terminal, break-even prices can be established so that marketing plans can be built around prices and cash flow needs. Students spend many hours developing the farm management plan. The course requires hard work, but students feel rewarded in the long run by having a complete knowledge of the financial position as well as the structure of the home farm business.

Computers have been found to be effective tools to motivate and stimulate students enrolled in farm management. Students feel the planning process becomes easier and more interesting. Once they have collected accurate data, the projections and analyses the computer provides for them are more reliable and provide a more accurate picture of what may happen in the farm business when the plan is implemented.

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2. Fog, P. and Lindahl, T., "Agribusiness: The Realistic Learning Center for Postsecondary Students," *THE AGRICULTURAL EDUCATION MAGAZINE*, (May, 1980) Vol. 52, No. 11, pp. 10-12.

BOOK REVIEW

AGRICULTURE AND ENERGY, edited by Donald Marier. Milaca, Minnesota: Alternate Sources of Energy, Incorporated, No. 37, May/June, 1979, 56 pp., \$2.00.

Agriculture and Energy is a special edition of the bimonthly publication, "Alternate Sources of Energy." This issue features eight articles which deal with various applications of alternate energy sources in agriculture.

A report on the Nebraska Small Farm Energy Project provides information on the successful use of solar heat to dry grain, heat a farrowing barn, and heat water on a dairy farm. An un-

successful attempt to develop a methane system for a small farm is also reported. Other articles deal with the application of solar energy to gardening and food preservation, a solar grain dryer, aquaculture in solar greenhouses, solar irrigation, and an overview of biomass research and activities.

A list of useful publications for small scale agriculture and alternate energy applications. The advertisements promote a wide variety of products dealing with alternate energy.

The authors of the articles in this publication have wide experience in the

development and application of alternate sources of energy. They convey a sense of dedication to the adoption of these energy sources.

The book is for people who have an interest in using alternate energy sources in homes and farms on a small scale basis. It would serve as a good reference source for the vo-ag instructor and vo-ag students seeking information on alternate energy sources and applications.

Eugene Anderson
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For the Beginning Teacher . . . Practical Practice With Adults

One of the concerns of the beginning teacher is "How do I, a young college graduate, work with adults?" The teacher feels that adults suspect that a new "fresh out of college" teacher "knows it all." The teacher fears that adults think the teacher will talk down to them or ridicule their present methods of production. The beginning teacher must put a few years in college instruction against the many years of experience of adults. Perhaps more appropriately the question becomes "How do I get the adult to listen to what I have to say?" Usually the teacher has had instruction on the characteristics of adults and the types of teaching methods most favorable to their learning. Very little actual teaching has been done in front of an adult class.

Most teacher training instruction focuses on the high school-age pupil. To some individuals, this seems logical since teachers may be hired to teach students in the seventh through the twelfth grades. Agricultural education is one teaching profession that offers the opportunity to teach adults as well as adolescents. Some of the opportunities in working with adults on school boards, advisory committees, adult classes, young farmer groups, and other community groups are listed below.

School Boards. This is an opportunity to sell the activities of your department and to gain support for new ideas you would like integrated into the program.

Advisory Committee. This is an avenue to explain your goals for the department. If you can communicate well with them, they will have a better understanding of your program and will be better able to support your ideas, while also encouraging the community to help support the program as much as possible. You will also be able to get suggestions, criticism, and evaluation information as time progresses.

By SCOTT McCARTY

Editor's Note: Mr. McCarty was a graduate student at Purdue University, West Lafayette, Indiana, at the time this article was written.

Adult Education Groups. The need and demand for adult education is increasing every year. The adults may attend for various reasons, but they all want to learn more to improve their present situation. You may be teaching new technological or managerial techniques to farmers or informing them on new agricultural developments. The adult education program can be a valuable asset to your total program as well as to your community.

Young Farmer Groups. These groups present teaching situations similar to adult classes. A second activity is also provided. Many times the young farmer groups will meet in their homes to have a short meeting and program of educational value. From this group of active community members, interest can be stirred to encourage community involvement. If you can keep this group enthusiastic and active, other young farmer groups may want to form and you can multiply your community support that much more.

Community Groups. Groups in the community may ask you to talk to them about a particular area in which you have expertise, such as speaking to clubs about preparing a garden, soil conditioning, or using pesticides.

Little experience is gained in working with these groups through most teacher training programs.

Several possible solutions to this problem are listed here.

1. Extend the time required to student teach with seventy-five percent of the time used to teach in-school students and twenty-five percent of the time spent on adult education.

2. Require the student teacher to speak at some adult meetings of those groups previously mentioned during

the current student teaching time allotted.

3. Have the student teacher be a guest speaker at some adult meetings during the first half of the semester. (Possible topics could be the new developments in agriculture at the university.)

There are other solutions. A first step is to have the student teacher speak to at least two different adult groups as a part of student teaching. It could involve a brief, personal background of the student teacher and then a short presentation on current developments in agriculture at the respective university. This could be on farm analysis by computer or other new programs. The presentation could involve the preparation of a lesson plan.

With experience, the beginning teacher should understand and appreciate opportunities with adults. The teacher, the communities in which they teach, and the university should all be able to benefit from this experience. This will not end all fears but will provide some reduction of tension when dealing with adults.

Details of Annual Research Meeting Announced

Final plans for the National Agricultural Education Research Meeting to be held in New Orleans on December 5, 1980, have been made, according to L.H. Newcomb, Meeting Chairman. Dr. Newcomb, a member of the faculty in the Department of Agricultural Education at The Ohio State University, has arranged three concurrent sessions along with one general session.

Papers to be presented at the meeting will include research on general issues, sex equity, program operation and improvement, learning outcomes, and personnel selection and retention. The general session will feature an invited paper on research methodology in agricultural education.

How One School Used CETA

By ROSEMARIE
CUNDIFF

Editor's Note: Ms. Cundiff is a graduate assistant in Agricultural Education at The Ohio State University. She was previously a horticulture instructor at Delaware Joint Vocational School, Ohio.



What would you say about a program that would immediately employ disadvantaged youth, supplement a teacher's salary, and beautify the community through federally funded projects? Sound too good to be true? Here is how such a program was conceptualized and established by one horticulture department.

In December, 1973, the Comprehensive Employment and Training Act (CETA) was signed into law and funded through the U.S. Department of Labor to combine the many existing employment acts into one. Title IV provided for youth programs through the Youth Employment and Training Programs and the Summer Youth Program.

The Proposal

In the Winter of 1978, the administration of the Delaware (Ohio) Joint Vocational School, announced to the faculty that proposals were being accepted in the local CETA office for youth programs. All were encouraged to prepare proposals. One energetic instructor, Thomas Lehner, liked the idea and began to write a plan which would initiate such a youth program in the horticulture department.

In a few months word came that the program had been approved. Equipment had to be ordered, students had to be recruited and interviewed, and a foreman was needed. CETA provided funds to rent lawn mowers and hand tools from a local garden center. Coveralls were ordered for each worker. Announcements went out to all horticulture students of a job opportunity for the summer months, and interested, disadvantaged youth in the program were called together for a meeting. Forms were sent home to the parents for income verification.

The Jobs

The stage had been set. That summer, the Delaware JVS began the first CETA program for its youth. The majority of the workers hired were from the horticulture department, with the remaining coming from local high

opportunity to work with high school age youth. Instruction in areas such as planting and pruning techniques and equipment safety is given by the foreman and supervisor. This experience provides the prospective teacher with a valuable insight into some aspects of the teaching profession.

The Skills

Fifteen students and one foreman began the job of maintaining the school grounds, greenhouse, laboratory, community pool, and golf course. Students were employed for 30-35 hours per week during the summer months at the minimum wage. Mr. Lehner served as supervisor.

Summer jobs included mowing lawn areas; planting trees, shrubs, and flower beds; propagating, watering, fertilizing, transplanting, and pruning plants; and maintaining equipment. Responsibilities were based at the three job locations: Delaware JVS school grounds, Mingo Park swimming pool complex, and Hidden Valley golf course.

With summer drawing to a close, a proposal was written to carry the CETA project into the school year. Fall, winter, and spring activities centered around the school grounds. Involving the work of six students and one supervisor, the crew stayed after school two hours per day to continue projects in grounds maintenance and greenhouse production.

This past summer, CETA again sponsored the youth program. Accomplishments included designing and planting the grounds around the city swimming pool complex, planting and harvesting 8,000 gladioli flowers, increasing the size of the putting green at the city golf course, and plugging the greens.

The Foreman

The summer foreman position is generally filled by a college student majoring in agricultural education. This allows a training apprenticeship

In addition to learning technical skills, CETA workers learn job skills in record keeping, budgeting their pay check, and the responsibility that goes along with employment. Workers must be regular in attendance and can be fired if adequate warnings and conferences do not produce acceptable performance.

CETA counselors visit the workers daily during the summer program. They monitor the job satisfaction of each worker and serve as a mediator between the worker and supervisor. Group sessions are held to discuss interviewing practices, job placement, job availability, future education needs, and employer-employee relations. Occasionally a representative from the U.S. Department of Labor will visit the program to insure that federal funds are being spent properly.

The Advantages

Advantages to the workers far exceed the minimum wage paid each week. Students may also receive medical attention, assistance in finding living quarters, personal guidance, technical training, and skill development. In the end, a student CETA employee is better qualified and adapted to the world of work. After all, isn't that the goal of vocational education?

If you would like more information concerning the Delaware program you may write for details to Mr. C. Thomas Lehner, Delaware JVS, 1610 State Route 521, Delaware, Ohio 43015. Proposals for your program should be directed to the local CETA prime sponsor office or to the U.S. Department of Labor.

Are You Teaching Competencies or About Them?

Planning lessons that effectively prepare our students for occupations in agricultural industry is a never ending job for the vocational agriculture/agribusiness instructor. The outline for a good lesson plan should include objectives, interest approaches, subject matter presentation, summary, and evaluation.

To be considered vocational, a class must provide students with the attitudes, skills, and knowledge that prepare them for a specific job. It is up to the instructor to incorporate the competencies that the students will need into the lessons.

Vocational agriculture instructors are often so busy supervising the FFA, being a class advisor, making farm visits, and the like, that it is easy to "skim" over the teaching of skills and competencies and fall into a pattern of teaching theories instead of the actual skills and competencies that are needed on the job. Because of the diversity of agricultural occupations, it is sometimes difficult for the instructor to determine the specific competencies that the student should have.

The report of the national ag occu-



BY ALAN FENNER
Editor's Note: Mr. Fenner is a teacher of vocational agriculture/agribusiness at Freeman Public School, in Freeman, South Dakota.

pations competency study is an invaluable tool in my lesson planning. The competencies listed become the terminal behaviors for my students. The following example is given.

Example: In planning a unit on dairy production for my Production Agriculture students, I consult the NATIONAL AG OCCUPATIONS COMPETENCY STUDY. I find the job title "Dairy Farm Manager; other titles — Dairy Farmer, Farmer and Dairyman" listed. Twenty-six competencies and their sub-competencies or tasks are listed.

One competency is "selecting breeding and production animals." Under this heading, several tasks are listed:

— select for production and physical traits that are highly heritable,

— cull cows that do not meet standards,

— use performance and pedigree information in selecting herd replacements, and

— determine expected production increases from the selection of top quality sires.

These are the skills that a good dairy farmer-manager should have and each guides the instructor in preparing lesson plans.

Summary

I have found the NATIONAL AG OCCUPATIONS COMPETENCY STUDY to be an invaluable tool in planning and conducting a program that is vocational. It aids in identifying the skills, attitudes, and knowledge that students need to prepare them for a lifetime of work. Using the National Ag Occupations Competency Study is like having a committee of professional advisors helping you with your lesson planning!

Copies of the NATIONAL AG OCCUPATIONS COMPETENCY STUDY can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Washington State University. He is an agribusiness consultant and has published numerous articles in professional and extension journals and bulletins.

According to the author, this book is directed at second and third year college students who are interested in agribusiness employment. It appears to be ideally suited for this purpose and, in addition, it will be useful as a reference for teachers and students of agribusiness management in senior high schools, junior and senior colleges and universities, professional agricultural workers, and others.

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and State University
Blacksburg, Virginia

BOOK REVIEW

PRINCIPLES OF MANAGEMENT IN AGRIBUSINESS, by Kenneth D. Duft. Reston, Virginia: Reston Publishing Company, 1979, 470 pp. \$15.95.

The author notes how agribusiness management has become a subject matter discipline without close academic linkages to business administration and agricultural economics. As a result, there is a lack of supportive texts. This book is designed to fill the void.

The text is divided into nine chapters. It begins with an introduction to agribusiness and the composition of basic managerial principles. The human element in management is presented from the standpoint of the employee, the director, the customer, and

the manager. A discussion of time/value relationships in agribusiness finance sets the stage for specific financial strategies and long range planning. Specific operational challenges to management and managerial methodology are examined.

The book concludes with references to contemporary issues confronting agribusiness management, including such areas as social consciousness, energy conservation, inflation, resource supply deficiencies, market power, and institutional constraints. An important feature of the book is that it contains numerous "real-world" references, case problems, and illustrations.

The author, Kenneth Duft, is a professor of agricultural economics at

Collegiate FFA: An Asset to Agricultural Education

BY FRED RENEAU

Editor's Note: The author is a teacher educator in agricultural education at Southern Illinois University.

The shift from most beginning vocational agriculture teachers having both agricultural and vocational agriculture experiences as high schoolers to little or no experiences in either area has placed a greater need to provide FFA-related activities in the collegiate training of prospective teachers. The 1979 Collegiate FFA/Ag Ed Development Committee of the 52nd National Convention of the Future Farmers of America expressed the need for qualified and competent vocational agriculture teachers and FFA advisors.

The Collegiate FFA aids the total agriculture education program at Southern Illinois University at Carbondale (SIU-C). The SIU-C Collegiate FFA members participate in several activities which increase the leadership qualities of members. The SIU-C Collegiate FFA membership is composed of 32 members (30 males and 2 females). Approximately 60 percent of the members are Agricultural Education majors.

State, District, and Local Participation

The Collegiate FFA members participate in local, district, and state leadership activities for high school FFA chapters. Fall activities are primarily confined to participation in and organization of the Collegiate FFA activities for the academic year. This includes monthly meetings, fund raising activities, recreational activities, and final preparation for the district and state FFA contests held at SIU-C.

During late January 1980, the ten first and second place parliamentary procedure teams in each of the five sections in Southern Illinois were asked to participate in the District Five contest. Judges, time keepers, and others required for the contest were identified by the collegiate FFA and approved by the chairman of District Five of the Illinois Association of Vocational Agriculture Teachers.

The District Five Prepared and Ex-

temporaneous Public Speaking contest was held in mid-April at SIU-C. The District Contest was composed of ten speakers who had placed first or second at the five sectional contests. This included ten speakers in the District Prepared and ten speakers in the Ex-temporaneous Contests. During this period of time the Southern Illinois University Invitational contest was held by the SIU-C Collegiate FFA Chapter. This public speaking contest is designed to aid freshman and sophomore high school FFA members in developing public speaking skills. Forty-eight students from 23 chapters participated in the SIU-C Invitational Public Speaking contest. Over \$250 in awards were given to the FFA winners of the SIU-C contests.

All of the Collegiate FFA members

actively participated in organizing and conducting these contests. Members enrolled in VES 364 class, "Youth Groups," assisted the Collegiate FFA members as judges, scorers, and time keepers.

In May, the State Poultry Contest and, in June, the District Five Livestock Judging Contest was held at SIU-C. Several of the Collegiate FFA members assisted the poultry and livestock personnel in the successful operation of these contests.

The SIU-C Collegiate FFA members have provided over \$400 in support of local, district, and state contests during the past year. Through the many hours of labor in working with these contests, the Collegiate FFA members have developed professional skills which they can apply to their teaching situations. The Collegiate FFA can be an integral component in the development of a well-rounded individual and a potentially better qualified vocational agriculture teacher.

BOOK REVIEW

THE UNSETTLING OF AMERICA: CULTURE AND AGRICULTURE, by Wendell Berry. Avon Books, 1977, 228 pp., \$4.95.

The book divides humanity into two distinct groups: those of the exploiter and those of the nurturer (farmer). The exploiter, who is the masculine man, requires the sacrifice of flesh, feeling, and principle. While the nurturers goals are health, his lands, his own, his family, community and country. He talks of the great displacement of our countryside into urban/suburban areas, and how it has taken an unfortunate precedence over the rural idea of working with the land. What stems from this, he states, is urban unrest, rural desolation, and alienation between agribusinessmen and university experts. In the last chapter, Berry answers the question of public remedies; how to prevent big government

and large agribusiness companies from taking over the family farm. Twelve answers, with some very poignant and real ideas, are given.

The author, Wendell Berry, a poet, teacher and novelist, lives and farms with his family in Kentucky. Berry started researching for this book in 1967 after reading a news story from President Johnson's "Special Commission on Federal Food and Fiber Policies." Feeling that he was a member of a threatened minority, he set off to write this book.

This book is designed for junior and senior college students as well as for personal reading. Anybody with an agricultural background will find this book realistic and to the point.

Richard J. Sabol
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Stories in Pictures: Dressing for Success



1

Sammy Smith of Smith and Byars, a men's clothing store in Starkville, Mississippi, presented a seminar on dressing for success to students in the Department of Agricultural and Extension Education at Mississippi State University. With the assistance of a model, undergraduate student Bubba Brown, Mr. Smith described the qualities to consider in selecting and fitting clothing. These photographs illustrate the following points: 1 - proper sleeve length, 2 - stitching and shoulder fit, 3 - effect of incorrect size and fitting, 4 - overall appearance, and 5 - fitting a vest. (See related article inside magazine.)

(Photographs by Ralph Ballew, Mississippi Cooperative Extension Service.)



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