

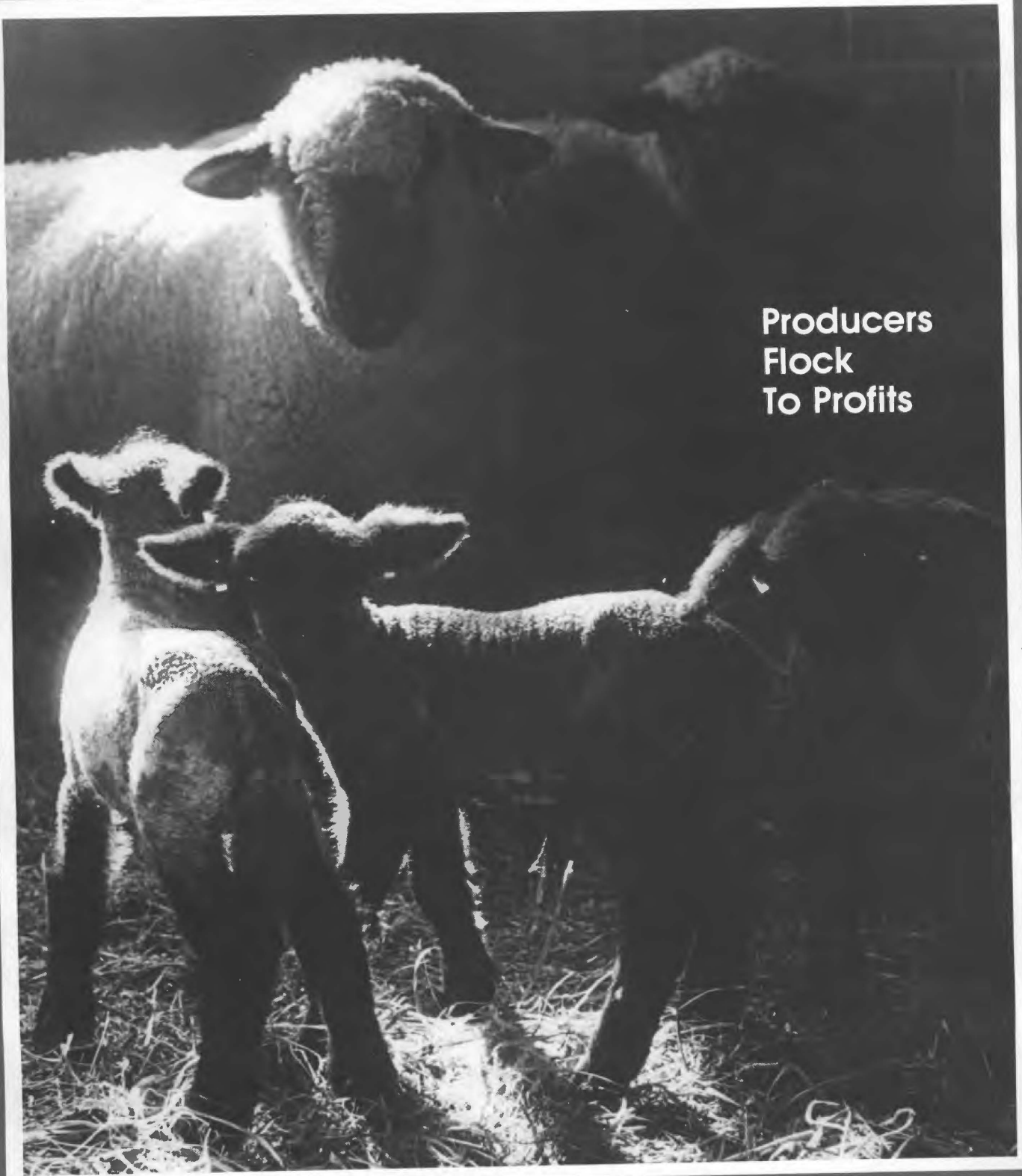
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VIRGINIA EXTENSION

OCT 1 1985

THE VIRGINIA COOPERATIVE EXTENSION SERVICE MAGAZINE

Vol. III, No. 2 1985



Producers
Flock
To Profits

COMMENTARY

The Virginia Cooperative Extension Service is more than a long name. It is a statewide organization whose employees work constantly at providing programs aimed at helping citizens of all ages have an easier, more prosperous life.

And although a program may be offered statewide, each local Extension office puts its own stamp on the offering so that it will fit the needs of the locality.

Therefore, we are not surprised when someone does not quite understand all that Extension does.

This lack of understanding led us to select a day in May to provide an information program that would help selected state and local legislators understand what Extension is all about. We wanted to provide them with an opportunity to talk to persons who have benefited from Extension efforts. We wanted them to see first hand how Extension works to provide programs that are wanted and needed in a community.



We picked two counties—Prince William and Culpeper—for the legislators to visit. One is urban while the other is a more traditional agrarian community. In addition to local legislators and administrators from the two counties, we invited members of the House committees on Agriculture and Appropriations and the Senate committees on Finance and Agriculture, Conservation, and Natural Resources.

Since these legislators can greatly affect Extension by their recommendations in committee, we felt they should see and hear about some of the county programs. Local citizens, recipients of the Extension efforts, made the presentations.

Manassas unit director Marilyn W. Grizzard worked with local state Sen. Charles J. Colgan, a Finance Committee member, in arranging that county's program. Don Poe,



chairman of the county's Extension advisory committee and director of the county Voluntary Action Center, acted as master of ceremonies. The advisory committee is composed of lay leaders who provide advice and direction for local Extension programs.

The visitors heard former Farm Bureau president Fred Fees who, although acknowledging the need for Extension support for agriculture, pointed out that the organization needs to use its tax dollars to help as many local citizens as its resources permit. Veronica McIntyre, a black homemaker and local advisory committee member, pointed out that Extension strives to reach all in the community with its programming efforts.

In addition, the visiting group heard short presentations about the county's 4-H program, as well as about Extension efforts in teaching survival skills, nutrition and health, family stability, financial management counseling, gypsy moth control, and the Master Gardener program. The morning portion of the program ended with a demonstration of Extension's riding program for the handicapped.



Then came a quick journey south to Culpeper and lunch at the dairy operation of Kenny and Greg Smith. The pair, along with Greg's wife Doris, spoke briefly about the various ways their operation benefits from Extension assistance.

The legislators spent the remainder of the afternoon at Culpeper Enterprises participating in a program arranged by Culpeper Extension director Roy F. Heltzel and local Del. George P. Beard, a member of the House Agriculture Committee. Peyton Kash, county director of Social Services, began the program by discussing the ways Extension and other county agencies cooperate to help its residents.

The group learned how Extension computer programs help in determining livestock rations and provide marketing and farm business management information. A group of 4-H'ers built an impressive pyramid by using program blocks to demonstrate the variety of activities



available to young people interested in the program.

Sheila Lane, president of the county's Extension Homemakers Council, explained how Extension works year-round in providing programs to county homemakers, regardless of whether they are members of the organization. Taylor "Ted" Gore, manager of the Culpeper Farmers Cooperative, talked about how Extension services help his and similar operations have accurate information to pass on to the public.

All of us who participated benefited from the program. Although it was not possible to tell about all that is going on in Extension, we were able to show the variety of programs involved. The day's program showed how Extension, often in cooperation with other government agencies, is working to make Virginia a better place in which to live.

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Lambs on cover represent a growing industry in Virginia. Story on page 4. (Photo by Bob Veltri)



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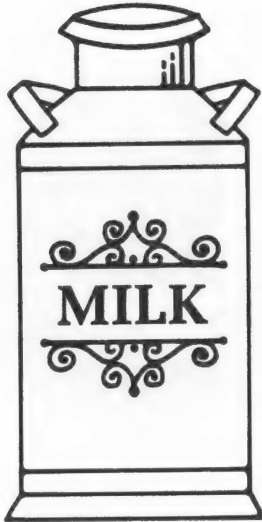
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The 4-H program constantly is changing to meet the demands of today's youth.

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INNOVATIONS

RESEARCH TO BENEFIT VIRGINIANS



Although uncommon in the United States, more than eighty percent of the world's population won't drink milk because of an intolerance for lactose--the major sugar in milk. But a Virginia Tech researcher says genetic engineering now makes it possible to have cows that give lactose-free milk that could be consumed without causing discomfort to these people.

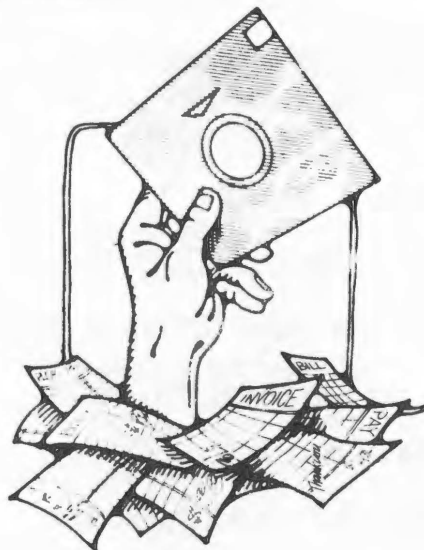
Thomas W. Keenan, Virginia Tech professor of biochemistry and nutrition, says it's already possible to produce milk without lactose. The problem, however, is that lactose is important in collecting water in the mammary gland. "When lactose is absent, you get something with the consistency of heavy cream," Keenan says. "I think the answer is to replace the gene for lactose with the gene for another sugar which has the beneficial properties of lactose, yet is digestible."

Several sugars work, but the Tech researcher suggests sucrose--common everyday table sugar. "Sucrose has the ability to pull water in and give some fluid volume," he says. "The genes for sucrose synthesis are well characterized and can be introduced into the mammary gland."

□

Virginia Tech researchers have developed a micro-computer software series that is designed to aid county governments in their decision making. The software, designed for use on the IBM personal computer, is based on two years of research at the University. Thomas G. Johnson, assistant professor of agricultural economics, says the project is a joint effort of research and Extension personnel to aid in rural economic development.

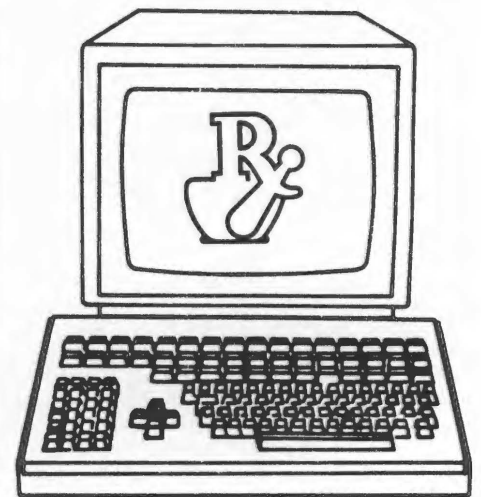
Each model in the series addresses a different aspect of local government concerns. One simulates county revenues and expenditures for up to twelve years based on assumed rates of population and business growth. Another simulates county revenues and expenditures, but also predicts population growth, migration, and commuting on the basis of assumed employment growth. These models are intended for use in fiscal impact studies when new industries, business closures, annexations, consolidations, or any of a broad range of economic changes are anticipated.



A third model compares county expenditures and revenues with state averages and predicted levels based on a statewide analysis of local government expenditures and

revenues. The predicted levels indicate what could be expected if an "average county" had the same attributes as the county being studied. Comparisons between the predicted levels and the county's actual levels can indicate that the county residents demand more or less than other state residents, that the county is either more or less efficient at providing services or that the county uses different accounting practices than the average county in the state. This can be useful information to county boards and staffs.

□



A new "artificial intelligence" based system is being developed at the Virginia-Maryland Regional College of Veterinary Medicine at Virginia Tech and Tech's department of computer science to help physicians predict drug interactions when prescribing medication for patients.

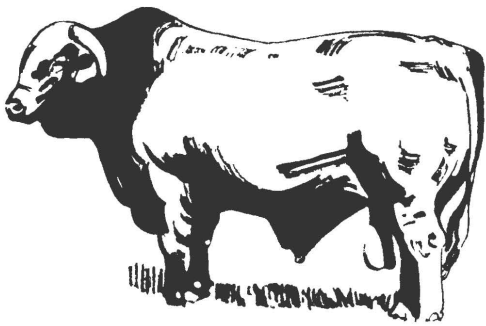
It uses computer technology to give advice to physicians who prescribe pharmaceutical agents in combination to treat a disease, a common practice known as polypharmacy. Sometimes such drug combinations are beneficial, but side effects may range from simple drowsiness to hemorrhage, coma or even death.

Pre-market testing determines the effects of individual drugs, but what is known about drug interaction has been painstakingly gathered from experimentation and published in medical journals. This leads to cumbersome searches for answers about drug interactions.

The new system predicts new drug interactions, telling clinicians not only which effects are harmful, but which are helpful. The system is "user friendly" and easy to operate by those not familiar with computers.

The eventual goal, probably years away, is a complete software package compatible with portable computers. The immediate and practical goal is the establishment of a central drug interaction resource system which could be accessed via telephone lines.

□



Beef producers prefer male calves because they gain weight faster, use feed more efficiently, and bring about 25 cents a pound more than their female counterparts. Thus, it is easy to understand why beef producers are looking for ways to produce more male calves. And so far, researchers have been trying two methods to achieve this—separating bull semen to produce only males and "masculinizing" female calves.

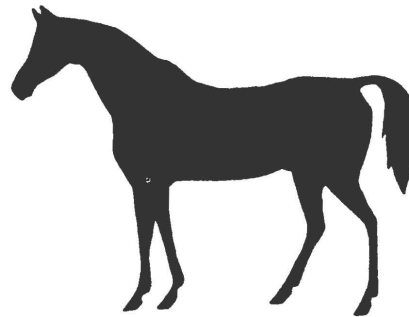
William Beal, Virginia Tech animal scientist, says that the first option hasn't worked, but that the second appears to be successful. The masculinizing technique is accomplished by treating pregnant cows with testosterone between day forty and sixty of embryonic development—before sexual differentiation of the fetus occurs. The result is a genetic female with a male appearance.

"The heifer looks like a male in almost every respect, and has male sex organs, although she can't breed," Beal says. "But the question, is, will she grow like a male? Preliminary tests show that the

growth rate is, in fact, faster than for normal females."

The technique is not yet approved by the Food and Drug Administration, and Beal is not sure it will be practical for farmers. "But in the process, we are learning about the growth process of beef cattle and, in the long run, that may be more important," he says.

□



The link that may help researchers across the country who are attempting to learn the cause and cure of the mysterious equine disease "Potomac Fever" or Acute Equine Diarrhea Syndrome may have been found by researchers at the Virginia-Maryland Regional College of Veterinary Medicine at Virginia Tech. Researchers Yasuko Rikihisa, Brian Perry, and Donald Cordes describe their discovery of a rickettsia, tiny microorganisms which are neither bacterial nor viral, with the characteristics of the genus Ehrlichia in the colon of a horse experimentally infected with Potomac Fever.

So named because it was first observed in Virginia and Maryland counties adjacent to the Potomac River, Potomac Fever has been the focus of a number of investigations funded by the Morris Animal Foundation in Englewood, Colorado. This past summer, 83 horses in Maryland contracted the disease with sixteen fatalities and six horses in Virginia had the disease with one death.

The research team was funded by the Morris Animal Foundation to isolate and identify the specific rickettsial agents believed to cause the disease.

□

Researchers at Virginia Tech are working to solve the mysteries associated with soft rot of fruits and vegetables, a phenomenon that results in losses valued at more than \$100 million per year in the United States. A pathogen, *Erwinia carotovora*, is responsible for causing common soft rot in potatoes, carrots, lettuce and cabbage, as well as some fruits.



"The cells in plant tissue separate and rot, or turn to mush," says George H. Lacy, associate professor of plant pathology. "Through our research, we hope to discover the genetic basis for causing these rots." By locating the gene or genes responsible for this rotting, the Tech researchers hope to disarm the genes and possibly use the disarmed pathogen as a biocontrol agent.

"Pathogenicity is a black box," Lacy says. "We know how pathogens damage plants and some about infection, but what takes place between infection and disease is not understood."

□

Electronic Marketing Boosts Sheep Profits

The electronic marketing of sheep may just propel the Old Dominion into the forefront of America's sheep industry. At least the electronic marketing concept, coupled with lower sheep numbers in the West, is providing Virginia sheep producers with higher incomes and the brightest future that they have had in recent memory.

The computer marketing system was developed with U.S. Department of Agriculture funding by Virginia Tech Extension agricultural economists. Southwest Virginia sheep producers have used the system for several years, but prices have been below the levels paid in other sections of the country.

By getting a large number of Virginia's sheep producers to use the services of the National Electronic Marketing Association, Inc., price levels are expected to be approximately the same as in other parts of the country. The closing of the marketing firm's offices in Christiansburg this spring and consolidating the offices in Baraboo, Wisconsin, is expected to have no effect on the operation.

The importance of expanding the lamb marketing concept to the Shenandoah Valley is underscored by the fact that forty percent of Virginia's more than 140,000 sheep are raised in the counties of Augusta, Highland, and Rockingham.

Tech Extension animal scientist Steven H. Umberger says the move to electronic marketing of sheep meant more than \$400,000 in additional revenue to state producers in 1984. The move, called a "breakthrough" meant that the Virginia producers received up to ten cents a pound more than previous payments and also caused the price of those sheep sold locally to be priced at higher levels.

It all began early last year when producers in Rockingham and Shenandoah counties talked with Umberger about finding a way to get better prices for their sheep. The result was the formation of the Shenandoah Valley Lamb Marketing Association and membership spread beyond the two counties to include sheep producers in Augusta, Fauquier, and Page counties. Fifty producers were willing to see if the marketing group could get better prices.

By August, the group had sold 5,000 lambs by computer, approximately one-sixth of all the lambs marketed in the state at that time. The important fact was that the lambs were sold at substantially more than previously had been paid at the local markets.

Tom Lohr, the Rockingham County producer who is president of the marketing group, says "There used to be very little competition between buyers in Virginia. You sold to the one local buyer at the price he quoted. He would then sell to the packers. By using the computer, we are hooked up with all the major lamb packers in the



W.C. Buferson Photo

Tom Lohr believes electronic marketing will provide much help to producers.

Northeast, Midwest, and Canada. It allows producers to get competitive bidding and the best possible price."

Lohr, who also grows beef cattle, hogs, and grain on nearly 1,000 owned and rented acres, has 700 ewes. He also had poultry but the avian flu epidemic forced him to liquidate his flock and he has not decided whether he will get back into the poultry business or perhaps expand his sheep holdings.

"We were not satisfied with the prices we were getting by selling our lambs through the local buyer," Lohr says. "When we held our organizational meeting early last year, we decided to dive in full force. We all signed pledge cards to sell our lambs through electronic marketing. We needed the pledges to insure a continuous supply as we would often have to pool our lambs to make a full load. We had to make sure that there would be a steady supply of lambs to make it work."

The producers also had to be able to withstand pressure from the local buyer and, to a lesser extent, some local market operators. Lohr admits that various members had "quite a bit" of pressure put on them to return to the old marketing procedure. "But we stood firm," he says proudly.

The computer sales do not compete with local lamb auction markets. "Lambs sold by computer are taken up at the local auction, and weighed and graded at that point. The market operator receives a commission on the lambs just as if they had been sold at the local auction. "It's really a good deal for everyone," says Umberger.

The move to computer marketing could not have come at a better time from the Virginia producers' point of view. Thousands of sheep were lost in the spring of 1984 when spring blizzards hit some Western states, forcing many producers out of business. Texas, the nation's largest sheep producing state, has had two summers of drought, forcing many producers to severely cull or eliminate

flocks. Although the drought in Texas is over, sheep numbers are at their lowest point in decades.

Virginia producers also are helped by the fact that they do not have the predator problems that their western counterparts have. Although Virginia does have a dog problem, the predator situation is not as severe because small farm flocks with fencing and other facilities help protect the sheep. Westerners, who graze huge flocks on miles of open range, don't have these options.

"We also have excellent forage in Virginia that we need to market. The way to do it is through sheep," says Umberger. "Sheep use forage more efficiently than any other red meat animal."

The successful computer marketing of lambs and the resulting competition among the buyers, coupled with the severe weather problems in the West, promise even greater dividends for the Virginia producers in the future. Virginia is close to the major market for lamb—the Northeast. This part of the country consumes 40 percent of U.S. production.

The combination of nearness to market and excellent lamb prices has Virginia's sheep producers talking about making the state one of the major sheep growing areas in the nation. Most recent figures show the Old Dominion ranks eighteenth among the forty-one sheep producing states.



D. D. Galvyan Photo

Sheep being graded for sale at Dublin Livestock Market.

This optimism is shared by many of the Extension agents in the sheep-producing counties. E.M. "Ned" Conklin III, Shenandoah County agent, expects a 20 percent increase in sheep numbers in his county in the near future. The better prices have attracted the interest of twenty farmers in the county. Some, already in the sheep business, are considering expanding their flocks. He estimates the county currently has 150 growers and 10,000 sheep.

B. Stephen Smith, Augusta County agent, estimates his county has approximately 425 producers and 24,000 sheep. He foresees little change in the number of producers but thinks a few sheep may be added to existing flocks due to the forecast of higher prices.

Highland County Extension agent Austin L. Shepherd concurs, seeing the number of producers in his county staying at approximately 275 with maybe a slight increase in numbers from the present 16,000.

The most optimism about the sheep industry's future in Virginia comes from Rockingham County Extension agent Ernest B. Craun II. He expects the county's four hundred sheep producers to expand by more than 19 percent during the coming four-year period with sheep numbers—currently around 22,000—increasing by as much as 25 percent. "The producers have been watching this computer marketing and have been impressed," he says. "Raising sheep offers them another area in which they can gain additional income in a time when farmers profit margins in other areas appear to be shrinking."

Allen G. Strecker, Rockbridge County agent, and James E. Riddell, Greene County agent who also works with producers in Madison and Orange counties, agree that sheep offer the producers in their counties another alternative to supplement the income they receive from other large animals. More and more beef producers have added sheep to their holdings in recent years after research determined that the two complement one another and do not compete for pastureland.

Lohr notes that the packers not only buy the sheep produced by the cooperative, but they participate in local events. Last year, for the first time, an out-of-state packer purchased some of the animals at a local 4-H show. He cites this as proof that the packers are satisfied with the products they are buying.

Lohr says the secret of the program's success was getting the membership pledges to sell through the cooperative. This guarantees that the necessary numbers will be offered for sale, making it worthwhile for the packer to participate. "I really think that this is the biggest step forward we producers have had in a long time. It also may allow some producers to stay in business where, without this option, they may have had to quit farming."

Another bright spot for sheep producers and electronic marketing of lambs occurred this spring when Rocco Enterprises, Inc. announced it would open the first lamb slaughter plant in Virginia. The firm's long-range plans will make the operation the largest east of the Mississippi River and one of the largest in the United States.

If Virginia's sheep producers expand their flocks to meet Rocco's needs, the gross income from the sale of Virginia lamb and wool will rise from the \$6.8 million recorded in 1984 to more than \$28 million. Rocco executives say that a major share of their purchases will be done through the computer lamb marketing program.

PEOPLE

Henry Chiles:

Hunting A Better Way

If there is a better way to grow peaches and apples, then Henry Chiles is going to find it. The Albemarle County orchardist has an inventor's workshop of engineering feats and experiments aimed at finding a better, more efficient way to grow, pack, and ship his produce.

"Production costs seem to always be on the rise," Chiles says, "so you have to keep looking for ways to make your operation more efficient. And you certainly are looking for ways to produce better fruit." One Chiles innovation is the hydrocooling basin that he put in to lower the temperature of the fresh-picked peaches before they were put in crates and stored in the cooling room to await shipment. The water, which is kept at 35 F, is washed over the peaches until they lose the internal heat that they have picked up from the sun while hanging on the trees. Chiles says this process reduces spoilage and allows the produce to have a longer storage life.

Six holding ponds, with a capacity of twenty million gallons, have been built during the past twenty years to help in the fruit cooling system as well as to irrigate the trees. Chiles has been experimenting with trickle irrigation on some of his newer trees and has been pleased by the results. Trickle irrigation allows the producer to target small amounts of water to the areas where it will do the most good. The system uses water much more efficiently.

Currently, Chiles has been spending a great deal of time and effort in perfecting a computer monitoring system in his six orchards near Batesville. The system will keep him abreast of the current weather conditions by reporting rainfall temperature, humidity, and



W. C. Britson Photo

Henry Chiles keeps looking for a better way.

other information that pertains to the weather. The planned system is similar to the "prescription approach" that peanut producers are using in Southeast Virginia.

When perfected, it will tell Chiles when to take frost control measures, begin irrigation, and spray pesticides and other chemicals that may prevent or control fungus diseases. "We have been working on the system for two years," Chiles says, "but we still have a lot to do before it is operational. In the long run, I think it shows a great deal of promise."

Weed control is another area that interests Chiles. He continues to work with Virginia Tech Extension specialists from the department of plant pathology, physiology and weed science in developing an effective weed control program that will allow the young trees to grow with a limited use of manpower. Some work combating nematodes also is being done at the orchard. Along the same line, he is working with Tech scientists in trying to find ways to prevent deer from damaging the

young trees that are growing on his hillside orchards.

Despite the fact that the orchard has fifteen full time employees, it still is a family operation. His wife, Ruth, also devotes a great deal of her time to helping out, and oversees the pick-your-own operation in the fall. The oldest daughter, Cynthia, twenty-one, is a senior at Longwood College, while a son, twenty-year-old Henry Huff Chiles, is a horticulture major at Tech. Sarah, seventeen, is a senior at Western Albemarle High School. "They work such long hours at the orchard during the summer that they are always ready to go back to school in the fall," Chiles says grinning.

The esteem that Chiles is held in by his contemporaries is evident when it is noted that he is the immediate past president of the National Peach Council and has served as president of the Virginia State Horticultural Society. He also is active in the Virginia Agribusiness Council.

Despite the problems of brown rot, nematodes, drought, and too much rain, Chiles is devoted to his orchard. It is this devotion and a desire to grow perfect fruit that keeps him looking for better, more efficient ways to grow his peaches and apples. "Who knows," he says, "I may find the perfect way."



A broken fork lift gets Chiles' attention

J.T. 'Jack' Ferguson:

Born into Extension



W.C. Burleson Photo

Jack Ferguson believes in doing a job right.

If ever a man was preordained to work in 4-H, it is J.T. "Jack" Ferguson. Ferguson has been associated with 4-H for most of his life.

His father was a North Carolina Extension agent and sheep specialist before moving his family to Henrico County to manage a farm when Jack was only one. His memories of 4-H stretch back to almost before he was old enough to become a member.

"Sylvia Slocum, the local home demonstration agent," he recalls, "would rent a cottage on the farm from my father and bring girls there for a week or so. I remember they sometimes would have social gatherings in the evening and would bring in 4-H boys. I am not sure, but I believe this was the only 4-H away from home experience that most of our county members enjoyed. It was before the camp at Jamestown began."

Ferguson enjoyed his camping experiences at the 4-H camp at Jamestown. The camp at that time was at the spot now occupied by the Jamestown Festival Park. The Department of Interior acquired that location for the park and 4-H moved down the road a ways to where the present Jamestown 4-H Educational Center is located.

Ferguson has fond memories of his 4-H youth, spent first as a member

and later as a 4-H All Star. In 1939, while a junior at Davidson College in North Carolina, he was elected All Star Big Chief in Virginia. During his term in office, he traveled to other states and was instrumental in organizing the Interstate All Star Conference, an annual meeting of 4-H All Stars from across the nation.

A year later, he received his economics degree from Davidson and moved to Prince George County to help manage a farm. It was while working at the farm he met a school teacher at Waverly. In 1944, he and Julia Meade Wilson were married. The couple has two sons and two daughters, Jack, Bill, Pat, and Meade. All four were active in 4-H during their teens.

Eventually, the family moved to Malvern Hill Farm, a 1,200-acre small grain and beef cattle operation in eastern Henrico County. Ferguson did not let the farm deter him from other business interests, however, and kept active in investing in timberland and managing a retail lumberyard.

He currently is president of James River Lumber Co., a timber holding firm; Trimmer Lumber Co., a wholesale lumber operation; and Glendale Homes, Inc., a land development firm. In addition, he also heads Mosmiller Florist, Inc.

Ferguson kept in contact with 4-H while his children were teenagers, helping out whenever possible as a volunteer. In the mid 1970s, it was evident that something had to be done about the Jamestown 4-H Educational Center. It was clear that the camping facility would have to be moved to another location or a major renovation would have to take place.

It was decided that a citizen board of directors should be formed to help make the decision and Ferguson was offered the job of chairman. "It was an offer that I couldn't refuse," he recalls. "I believe that we are all beneficiaries of the work done by others. Others worked to provide me with good 4-H camping facilities

when I was young. This was an opportunity for me to help provide others with modern camping facilities." He has held the position of chairman ever since, pointing out that the members of the committee work closely together so that no one person carries too large a burden.

At first, many persons felt that the Jamestown property should be sold and property with more acreage than the center's sixteen should be bought. As various properties in Extension's Northeast District were explored, however, the feeling grew among those associated with 4-H that maybe the present site should be kept. "It became apparent that we didn't realize what a good thing we had at Jamestown," the business executive says.

The decision to stay at the same location also resulted in a second decision—that a major fund-raising campaign had to be undertaken to add new facilities and refurbish the existing ones. The result was the current campaign to raise 2.15 million dollars to renovate and expand the facilities.

Ferguson has sponsored various projects in 4-H and is on the Henrico County Extension Advisory Committee. This willingness to "help out where possible" has not gone unnoticed. In the late 1960s he received the State 4-H Alumni Award and later last fall the Northeast Extension District presented him a plaque that cited him for his "outstanding and dedicated service" to Extension.

"You want to make things a little better than you found them," Ferguson says. "If you accept a job, you should do your best while completing it. If you can't do that, then you should let someone else who is willing to do the job right handle it."



Ferguson watches daughter Meade fill an order at the flower shop.

Expanding Horizons



When a sighted person conducts programs for the blind, learning is done by both the instructor and the participants.

This was one of the first reactions of home economics Extension agent Joan C. Elledge when she became interested in holding some programs for the blind in Albemarle County and Charlottesville.

"I felt that the blind represented an overlooked audience for Extension here in Charlottesville and Albemarle County. It is estimated that there are more than 300 blind people in this area who could benefit from some of our traditional programs," Elledge says.

She thinks that the fact that Charlottesville has a workshop for the blind and there are some industries in the area who hire handicapped has attracted more handicapped individuals to the city and county. "The blind are just like everyone else," Elledge says, "they move to those areas where there is work."

She says the idea of the blind as a targeted audience occurred to her when 4-H was asked to furnish members to act as guides for the blind at the annual meeting of the Virginia Federation of the Blind in Charlottesville. The more she investigated, the more she saw a need for such a program.

Thus far, her investigation has resulted in four programs for the blind. Two programs were held in sewing, one in microwave cooking, and one in home repair. The classes were small as more individual attention was needed for the participants.

And again local 4-H clubs were called upon to supply members to aid in setting up classes and giving other assistance in the cooking and home repair programs.

Members of local Extension homemakers clubs volunteered to provide transportation for the blind to the workshop sites. The second sewing class had sighted and blind participants. The sighted gave their blind classmates rides to class and helped them with many of the learning exercises.

"The cooperation has been marvelous. There are many more details that have to be taken care of when you are working with those who cannot see," Elledge says.

"In teaching sewing, it is important to work individually with those who have been blind since birth regarding their concepts of color. Suitable color combinations have been memorized and there may be definite feelings about color based on what others have told them. They generally buy clothes and accessories for comfort and design and often enlist the opinion of a sighted close friend," says the home economics agent.



W. C. Burlison Photo

Henderson and Nora Beavers talk over morning coffee.

"The blind rely on feel in selecting fabrics, placement of pattern, cutting, and construction procedure. They have to concentrate harder on their tasks than do sighted individuals. Many mistakes that are caught visually by sighted individuals are caught just as quickly through touch by the blind."

The home economics agent taught all of the classes, getting assistance from volunteer instructors in areas such as electrical repair in which she did not have the necessary expertise. "You can become an expert in a short period of time when you find you have to teach a course in a subject," she laughs.

Henderson and Nora Beavers are two people who took advantage of the programs. Nora enrolled in both sewing programs: Henderson took the home repair course and both participated in the microwave cooking class. As might be expected, both are enthusiastic supporters of the Extension effort.

Nora, who admits she would rather crochet than sew, called the class "a lot of fun." Wearing a vest and skirt she made in the sewing classes, she admits the classes did not overcome her dislike for some sewing tasks, but they did make them easier. The hardest task, she says, is getting seams and hems straight. "I thought making darts would be hard but it was no trouble when I followed the directions."

Both Henderson and Nora have been blind since birth. She is from Galax and he is from Tazewell County. They met at the Virginia School for the Deaf and Blind at Staunton. Their ten-year-old daughter Diana, along with the children of the other blind couples in the class, participated in a session of the cooking class to learn how to use the microwave ovens to prepare snacks. Henderson

does switch assembly work at the Crouse Hinds Corp. plant in Earlsville.

The couples participating in the microwave class received cookbooks containing 30 recipes written in Braille. Elledge, working with the Appomattox County Extension office, found Marjorie Schampel, who volunteered to do some of the recipes used in class in Braille. The cookbooks have become valuable additions to the participants' cooking libraries.

Nora has participated in other sewing classes for the blind but did not get as much from them as those offered by Extension. "Other teachers really seemed afraid to let the blind do various things. It was done for us," she says. "Consequently, they were not too valuable."

The reason for her positive feeling about the classes may lie in the fact that she was on the advisory committee that helped plan them. Henderson, who is president of the Blue Ridge Federation of the Blind, hasn't limited himself to be only a recipient of Extension programs. He served as a judge in a local 4-H Presentation Day competition.

Nora had some difficulty mastering the microwave, especially when it came to casseroles. Her problem was an oven that heated unevenly. Once that was repaired, she has been able to prepare a variety of tasty dishes.

Carolyn and Woody Berry also speak well of the sewing and microwave courses. Carolyn, a native of Madison County who has been blind since birth, says the sewing class has made her more comfortable in doing simple chores like hemming and sewing on buttons.

The blind use the microwave to cook meat more than do sighted families since they are not 'turned off' by the lack of color in some foods.

Woody, who was blinded in an automobile accident when he was eleven years of age, speaks highly of the cooking class. When Carolyn was in the hospital for two brief stays recently, he used the microwave to prepare many of the meals for himself and the couple's two children Scott, 9, and Delores, 11. "The class gave me much more confidence to try cooking with the microwave," he says. "Our children's participation in the family segment helped. They can help me and they also can prepare snacks for themselves. The microwave seldom sits unused for any period of time."

Woody, who works in the radiology department at the University of Virginia, still is discovering ways to use the microwave oven. The class, he says, has given him confidence to try some new things. This he was hesitant to do prior to learning how to use the oven. "We basically use the microwave oven to cook the same items as we did on the stove. It is really convenient to defrost frozen meat and vegetables," Carolyn says.

The blind use the microwave to cook meat more than do sighted families since they are not "turned off" by the lack of color in some foods. They do not judge by appearance, but by taste. Consequently, they find items tasty that the sighted person will not like because they appear uncooked.

Carolyn, however, says her two children have not commented upon the unbrowned meat. "I think it is more a question of what you are used to. Our two have gotten used to what we cook and never comment upon the looks. They will tell us if they don't like the taste though."

Carolyn has made several skirts since taking the sewing class. Although she did take sewing at the School for the Deaf and Blind, where she met Woody, she says the class gave her confidence to do more sewing. She has one plastic skirt pattern designed in the Extension class that allows her to work without the help of a sighted person. If she needs some assistance from a sighted person, she calls "one of the children for help."

"They (the blind) have the same needs as others who use Extension Services."

Woody also gives the home repair class high marks, saying he learned how to replace or repair a faucet, repair a screen, work on a faulty appliance plug, and replace parts in the toilet. "I believe we will be able to save some money," he says.

Kathy and Stuart Owen also took the microwave course. Kathy, a Montgomery County native, says the course "helped me quite a bit. I didn't do too much with my microwave before. Now I generally do about half of my cooking in it."

Owen, who is the immediate past president of the Blue Ridge Federation of the Blind, says he does little cooking and generally that is something that is "easy to fix." The Powhatan County native does like to do as many home repairs as possible, though.

Owen, who likes to keep a small garden, learned how to do many small jobs around the house while working at Virginia Industries for the Blind. It was, in fact, where the two met. Both still work there.

Kathy doesn't can food, saying the garden does not produce that much. "I do freeze a few things. The microwave is a good place to cook them."

Elledge hopes to continue making periodic course offerings to the blind persons who live in the area. "It helps the families to save money by being able to do more for themselves. They have the same needs as others who use Extension services. You just have to make more adjustments in preparing to teach the classes," she says.



Joan Elledge talks to Carolyn Berry while Woody listens.

IN BRIEF

NEWS OF INTEREST FROM ACROSS VIRGINIA



Virginia has a new 4-H ambassador. Governor *Charles S. Robb* was awarded a plaque and the title of honorary ambassador during a visit by the state's 4-H'ers to the Virginia state capital. *William E. Germelman of Berryville in Clarke County* made the presentation to Robb in recognition of his outstanding support of the Virginia 4-H program. Delegate *James H. Dillard of Fairfax* hosted the day-long visit of the 4-H'ers.



The cream of Suffolk's agricultural operations will be on display Saturday, July 27, during the ninth annual Virginia Farm Management Tour. The seven farms that will have open houses that day will give visitors an indication of the variety of agriculture in the 430-square-mile city.

The featured farms will be the Johnson Brothers Farm, a peanuts and forestry operation; the Happy Valley Stock Farm, which raises harness horses; the Umphlette Farm, a grain operation; the Pur-Sang Dairy Farm, which raises Holsteins and Guernsey dairy cows; Lancaster Farms, Inc., an ornamental plant enterprise; Pine Pasture Farms and its purebred beef cattle; and the W.A. and R.A. Wright Farms, a commercial market hog operation. Additional information concerning the tour can be obtained at a local Extension office.



The annual Agri-Tech observance at Virginia Tech will be Tuesday through Friday, July 9-12, on the University campus. As in past years, Thursday will be devoted to Plant Industry Day while Animal Industry Day will occupy its traditional place on Friday. The Tuesday and Wednesday portions of the program will look at no-till vegetable seeding technology while a Pest Management Orchard Field Day also is on the agenda for Wednesday.

The annual observance, which is geared toward providing information for those in agriculture, is sponsored by Tech's College of Agriculture and Life Sciences, the Virginia Cooperative Extension Service, and the Virginia Agricultural Experiment Station.



The Virginia Cooperative Extension Service has agreed to offer assistance to the Virginia Farmers Home Administration (FmHA) under terms of a joint memorandum signed by the two agency heads. *Mitchell R. Geasler*, state director of Extension, and *Roie M. Godsey*, state FmHA director, agreed to cooperate with other state and local agencies in the establishment and operation of credit hot lines.

The two agreed that their agencies would work closely with one another to help farmers who have suffered severe economic reverses due to disasters and poor economic conditions. Extension also has agreed to provide professional and/or clerical assistance to FmHA offices when possible.

Local Extension offices will continue to assist FmHA in locating farm credit and farm management specialists and will work with FmHA in locating farm credit and farm management specialists, and will work with the agency to focus efforts in areas where the need is greatest.



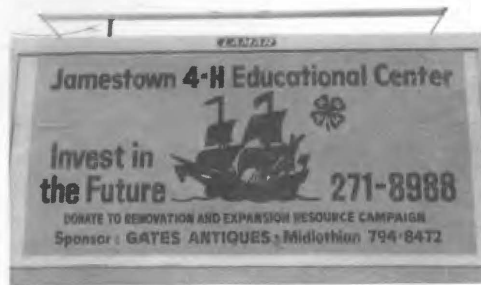
A tree farm is a good hedge against inflation, says Tech Extension forest management specialist *Harry L. Haney*. He says that a good rule of thumb for judging productivity is the rate of tree growth. On an average Virginia site, trees will reach about eighty feet in fifty years. This type of land will produce between one and one-half and two cords of wood per acre each year under normal management. "If you let the trees grow for thirty years without thinning, you can expect a rate of return, after taxes, of 14 to 15 percent.

"Using these assumptions, you can afford to pay between \$400 and \$500 an acre for the bare dirt on your farm," Haney says. "Even a ten-to fifteen-acre minitree farm can be profitable for those who have other sources of income. It takes 500 acres or more, however, to achieve any economies of scale."



Virginia Tech's Computing Resources and Extension, through the continuing education program, have opened a microcomputer demonstration facility and software repository in the Donaldson Brown Center for Continuing Education to serve faculty, staff, graduate students, and members of Virginia's business and industry community. "The facility will allow persons thinking of buying personal computers to be able to evaluate different brands of personal computers and to review available software packages," say *Wayne Donald*, assistant vice president for Computing and Information Systems. "The facility also is available to those attending conferences at the CEC."

The repository has twelve different personal computers, representing seven different manufacturers, for visitors to evaluate. There also are printers, other accessories, and a variety of publications for those wanting to learn more about personal computers before making a purchase. The repository is open daily from 8 a.m. until 5 p.m.



Chesterfield County residents certainly are being made aware of the \$3 million renovation and expansion of the Jamestown 4-H Educational Center. Billboards have sprouted across the county asking residents to contribute to the five-year project.

A 4-H volunteer leader, *Ann Anderson*, got her employer, the Lamar Advertising Co., to donate fifteen billboards to advertise the campaign. A *Midlothian* firm, Gates Antiques, Ltd., provided the money to print the messages for the billboards. The billboards have appeared at good locations across the county.

The Chesterfield County government has pledged \$50,000 to the county goal of \$125,000. The county 4-H'ers raised more than \$7,000 selling soap products and by holding a walkathon. The county sends the largest number of campers—nearly 300—to the Jamestown facility each summer.



Glen Heuberger of Swift and Company, Chicago, is the new director of the Tidewater Agricultural Experiment Station in *Suffolk*. The former Swift research manager of feeds and specialty products was with the firm for 25 years. He received his undergraduate degree at Iowa State University and his graduate degrees from the University of Illinois. He succeeds the retired *Coy C. Brooks*.



The chief of party of the new farming-system design project in the West African nation of Guinea is *Ruth Harris*, associate professor of international Extension. Virginia Tech is working with North Carolina Agricultural and Technical College and Fort Valley College of Georgia on the Southeastern Consortium for International Development (SECID) project to design a large agricultural system for Guinea.

The project is making use of Extension's farming systems approach, which analyzes community resources with the objective of producing crops for local consumption as well as cash crops. It is expected to take two years to design the long-term project and five to ten years to increase the productivity of the small landholder.

Harris is headquartered at Faranah Agricultural Institute. She also is working with faculty at the National Institute for Agricultural Research at Foulaya and the Tindo Farm Center.



Two Henrico County Extension homemakers used their talents to help a local scholarship fund and to get names of possible new members. *Helen Ryan* and *Mary Lea* made the quilt which was won by *Karen Ferguson*. The winner, a mother of three who is studying psychology at J. Sargeant Reynolds Community College, had only one of the 735 tickets sold on the quilt.

A ticket for the drawing for the quilt was given for each one dollar donation to the area educational fund. A portion of the proceeds went to the Henrico County Betty H. Parker Scholarship Fund for a Henrico high school graduate attending Virginia Tech. The remaining tickets were sent to the counties where the ticketholders resided so that those with an interest in Extension homemakers could be contacted.



Helping those with low-income to get the most for their dollars has been the focus of the *Pulaski County* Extension office. *Sarah Burkett*, home economics agent, conducted a workshop for a dozen local residents on how to buy nutritious foods and took the members on a tour of a local grocery to show how to unit price and compare prices. She also gave them information on how to reduce costs and what to buy without sacrificing good nutrition.



A \$50,000 grant has been awarded to Virginia Tech's Powell River project by the Westmoreland Company and Penn Virginia Corporation Foundation. It was the second \$50,000 gift from the two related firms in eighteen months to support research and demonstrations of coal mine land reclamation and restoration at the Project's sight at the headwaters of the Powell River in *Wise County*.

Penn Virginia manager *Philip D. Weinstock* presented the check to *James R. Nichols*, project board chairman and dean of Tech's College of Agriculture and Life Sciences; *William E. Lavery*, Tech president; and *Milton B. Wise*, board member and associate director of Virginia Cooperative Extension Service.

The project started in 1980 as a joint project of Penn Virginia Resources Corporation and Tech. It now includes more than two dozen projects that are aimed at finding uses for land from which coal has been mined.

W.D. "Berry" Gray, chairman of the *Richmond County* Board of Supervisors, received the Gold Key Award during 4-H alumni recognition ceremonies at the National 4-H Congress in Chicago. The operator of a 1,200-acre farm in Richmond County, he has assisted in many 4-H activities, from working at county fairs to being a director on the 4-H Education Center board.



Wasps: Unlikely Allies

Virginia farmers and their counterparts around the nation remain constantly at war. It is a war against the elements, disease, and insects that often threaten their livelihood. Consequently, it is no surprise that farmers are constantly on the lookout for allies to help them win as many battles as possible.

Each year, agricultural producers enlist the help of certain beneficial insects to help preserve their pastures, to save their grain, corn and soybeans and, in general, to aid them in bringing in good crops. They use these insects to fight other insects or weeds that may cause extensive damage in the fields and pastures. As in most conflicts, the use of any weapon is only part of an overall master plan which could lead to victory.

The insects are being used as part of an overall program to help the farmer be in a stronger management position through an integrated pest management (IPM) program. IPM uses a variety of weapons to help the farmer get the highest yield for the lowest possible cost. It is an approach that each year saves the state's soybean farmers an estimated \$700,000 and avoids putting 90,000 pounds of chemicals into the environment.

The generals in this IPM campaign come from the Virginia Cooperative Extension Service, the Virginia Department of Agriculture and Consumer Services (VDACS) and the U.S. Department of Agriculture (USDA). These three agencies breed the insects, make sure the insects are delivered to the proper locations, and work with the individual farmers in getting the insects into the fields where they can provide assistance to the farmers.

The idea of using insects to help producers fight other insects is not new in Virginia. Robert L. Pienkowski, Virginia Tech professor of entomology, has been using wasps to fight the alfalfa weevil in Virginia fields since the late 1950s. Extension entomologist John Luna currently is carrying on the work. Loke T. Kok, a professor of entomology at Tech, has been directing the war against musk and curled thistle in pastureland for more than a decade. The thistle program was begun at Tech in 1969 by former entomology faculty member Rodney D. Hendrick. These programs, as well as those to fight the cereal leaf beetle in small grain and Mexican bean beetles in soybeans, are expected to continue.

"Actually, the use of insects to help the farmer is just part of a sound IPM program," says Robert M. McPherson, Extension entomologist at Tech's Eastern Virginia Research Station at Warsaw. "A good IPM program has five major elements—field scouting, biological controls, cultural controls, threshold limits to determine when to treat, and chemical controls when needed.

"They all have roles to play in a successful management program. Field scouting allows the producer to know the



VDACS Photo

Wasp implants its eggs into larvae of cereal leaf beetle.

level of infestation in a respective field. Biological control uses beneficial insects to keep the level of the damaging pests to an acceptable level. Cultural control allows the producer to plant crops on dates when insect damage is less likely to occur or in narrower rows to reduce the likelihood of pest outbreaks and yet not to substantially damage the harvest. It also allows the planting of small trap crops that are planted early and lure the insects to a spot where they can be eradicated quickly and inexpensively."

The Extension entomologist says that generally chemical control with pesticides is used as a last resort when the insect population rises to unacceptable levels and spraying is necessary. Limited chemical usage also is found when trap cropping is used.

McPherson succeeded Extension program leader William A. Allen who coordinated the operation for five years. Allen's work in IPM led him to receive the Entomological Society of America Extension and the American Soybean Association-ICI awards. McPherson this year was named recipient of the latter award for his work in the field.

VDACS biological control supervisor John Tate, who, along with cohort Don Craun, oversees the agency's biological control operations, observes that the battle against the cereal leaf beetle is being won, although the insect is continuing to appear in new areas of the United States. The beetle almost has been eradicated in Michigan, the state in which it made its first appearance in 1962.

Both adults and larvae of the cereal leaf beetle damage grain crops, taking their nourishment from grain shoots or from grasses by chewing out long strips between the leaf veins. Overwintered beetle adults appear in the spring and mate. The female beetles lay eggs on the host plant's leaves. The larvae then begin feeding on the young tender leaves of oats, wheat and other small grain crops.

In some parts of the world, the cereal leaf beetle has caused as much as 50 percent crop losses.

The cereal leaf beetle has been the number one insect pest of small grain crops in Virginia during the past three growing seasons. The biological control program being used in Virginia is the same that was used in Michigan—large scale releases of four species of parasitic wasps. Native to Europe, the wasps are adapting to Virginia and the other mid-Atlantic states. All four species have been established in the United States. USDA researchers found that the wasps were natural enemies of the cereal leaf beetle and that they were harmless to everything but the cereal leaf beetle. VDACS rears the parasites in its Hanover County field laboratories and distributes them to county Extension agents participating in the program for release in their localities.

One species of wasp lays its eggs into cereal leaf beetle eggs. When the wasp eggs hatch, the young wasps develop with the beetle eggs, devouring them as they grow. The three other species of wasps lay their eggs inside developing cereal leaf beetle larvae. After the eggs hatch, the wasp larvae feed within the beetle larvae, destroying them.

Tate says these wasps, which are smaller than the head of a pin, will not sting people as they have no stingers. They do have ovipositors, egg-laying organs they use to insert their eggs in the beetle's eggs and larvae. They only can complete their life cycle within the cereal leaf beetle.

In Virginia, Tate says, the best results have occurred in the Shenandoah Valley where more than 60 percent of the beetle eggs and larvae have been parasitized in many locations. In eastern and southeastern areas of the state, however, results have not been as dramatic, with results ranging between four and 20 percent. The VDACS staff member believes this may be attributable to the fact that more no-till cultivation is prevalent in the valley while there is significantly more tilling and double cropping performed in the eastern areas.

Another foe, the Mexican bean beetle, is one of the most destructive pests of soybeans in the middle Atlantic States, Tate says. The beetle spread from the Southwest in the 1920s and is well established in the East. It used to favor the leaves of snap beans, but has become very fond of soybeans in recent years.

The beetle spends the winter hibernating under tree bark, pine needles, or leaves and other protected areas. In the spring, the adult emerges and the females lay their eggs through spring and summer. After the eggs hatch, the larvae feed for two to three weeks, then become pupae and rest for a week before emerging as adults. When first hatched, the young larvae begin feeding on the underside of bean leaves. Older larvae and adult beetles often eat completely through the leaves, leaving only the leaf veins.

The wasp that fights the Mexican bean beetle also was imported, this time from India. The size of a gnat, the wasp inserts eggs into bean beetle larvae and the resulting process is approximately the same as that with the cereal leaf beetle. Unfortunately, Tate says, these wasps do not overwinter in Virginia and so the population has to be restocked each year.

VDACS raises the beetle parasites in Virginia Beach and distributes them each year. Last year, there were two major distribution efforts. With USDA and Extension cooperation, 540,000 wasps were released in the Northern Neck area. Another 40,000 of the parasites were released in 14 eastern Virginia counties.

"Before we started the wasp program against the Mexican bean beetle," Tate says, "more than 50,000 acres of Virginia soybeans required applications of insecticides to control the population in most seasons. Since 1978, no more than 5,000 acres have required Mexican bean beetle treatment in any given year."

Weevils, not wasps, are the allies in the war to control musk and curled thistle in pastureland. Two different species of weevils are used to prevent the spread of this noxious weed. One type of weevil feeds on the crown of the plant while it still is developing or in the rosette stage. The other type of weevil feeds on the seed head of the mature thistle.

Kok says the two weevils have proved quite effective in controlling the increase of thistles in pastureland. The weevils weaken the plants until they eventually die. VDACS collects the weevils around June 1 in Pulaski County and distributes them around the state. Last year, fifty-two colonies of weevils, each numbering about one hundred weevils, were collected and distributed in 13 counties. Although the program is regarded as being successful, the weevils are not expected to replace herbicides, just reduce their use substantially.

The battle against the alfalfa weevil has been going on the longest. "The results have been very mixed," Luna says. "Overall, I guess you would call the results disappointing." Through the years, both Tech and VDACS have investigated biological control of the alfalfa weevil using four species of wasps. Currently, USDA's Animal and Plant Health Inspection Service (APHIS) has a national project that is evaluating the use of the wasps. Northern Virginia is included in the APHIS study area. "We still are searching for ways to get standard, uniform results," Luna says. "We currently have to depend on chemicals although we are trying to limit their use. This new APHIS project may show some results."

The use of a new wasp from the Mediterranean area to fight the alfalfa weevil is being explored. A new threat in Virginia, the gypsy moth, has started a search for its natural enemies. For the past two years, thousands of parasitic wasps have been released in the Frederick County area to see if they will lay eggs in the caterpillars before they turn into moths. Results from this effort have not been determined as yet.

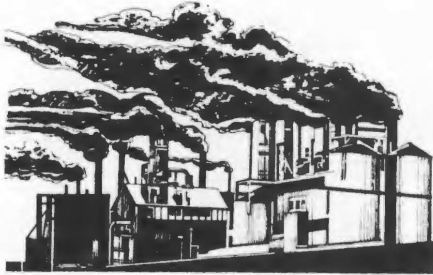
In all biological control battles, researchers continuously are searching for new allies that may result in elimination of the pests. The present programs, however, have resulted in less use of pesticides and more progress in the war against certain pests. 73



Cereal leaf beetle control is now possible.

IMPACT

DOLLARS AND SENSE FROM EXTENSION



Air pollution may be getting too much blame for forest decline in the Southeastern United States, suggests a Virginia Tech forest biologist. "Many trees that seem to be affected by air pollution deposits are those that are at the southern edge of their range," says Shepard M. Zedaker. "Because of a general warming trend, these trees would be declining regardless of increases in air pollutants."

Climatic changes, possibly due to a greenhouse effect stemming from the burning of fuels, also could be changing the viable range for many of the trees. Much of the data implicating air pollution as a culprit in forest decline may be tainted by sampling concentrated on older strands of trees. "As trees get older, their overall growth rate declines very rapidly and levels off for long periods of time," Zedaker says. "Many question the validity of data that represent a narrow range of age classes."

Concern about forest decline in the Southeast has grown recently, as the region takes on more importance as the major source of wood products.

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Too much of a good thing can be harmful, especially when it concerns soil compaction. This finding comes from a Virginia Tech study comparing various soil types and the resulting compaction from continuous no-till practices.

Easley Smith, retired Extension agricultural engineer, says the goal was to "see if we could get any yield response to deep ripping in a no-till condition." Six on-farm test demon-

strations were conducted in both corn and soybean fields. The tests involved ripping a series of rows to a depth of approximately fourteen inches before planting, leaving the remaining rows unripped.

The soybeans showed only a slight response. Smith attributes this to the fact that most soybeans are not continuously no-tilled, but are rotated with other crops.

A marked difference was seen in corn, however. In the Coastal Plains area of Eastern Virginia, there was an eighteen-to-twenty bushel response. The Emporia-type sandy soil, found mainly in Sussex, Greensville, and Southampton counties, has a natural compacted layer between the soil and the subsoil.



Per acre yield increases also were evident in some of western Virginia's heavier soils. In a Shenandoah County corn field, a twenty-six bushel difference was recorded between ripped and non-ripped rows. In Montgomery County, a 1.1 ton total weight increase was seen in a field harvested as silage.

The results, Smith says, do not mean that minimum tillage practices should be avoided. "No-till itself does not cause soil compaction. Certain practices used with no-till, such as planting and harvesting under wet conditions, can lead to compacted soils and lower crop yields."

Smith says the solution is to use no-till wherever possible, but to rotate tillage practices every few years. "The occasional use of moldboard plowing will help with surface

compaction, mix plant nutrients and lime throughout the plow profile, and help with weed, disease, and insect problems."

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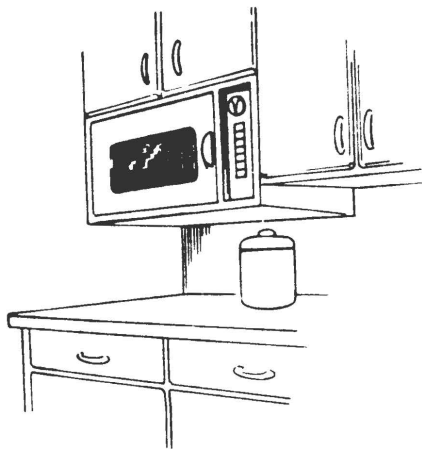
It looks as if Lee County may begin lowering its infant mortality rate which is among the highest in the state. On Aug. 1, Dr. James P. Cardasis of Chicago will begin his family practice at the Western Lee County Health Clinic in Ewing. The doctor has extensive experience in pediatrics.

Extension, Virginia Tech's Center for Volunteer Development, and East Tennessee State University College of Medicine officials worked closely with county leaders to help get a \$102,588 grant from the Public Health Service's Department of Health and Human Services. The grant will be used to supplement some of the expenses of the physician.

Lee County has been searching for a doctor for some time after volunteers were successful in getting the clinic built. In addition, the nearby St. Charles Medical Clinic has received a grant of \$25,000 to study the possibility of letting that community use the services of Dr. Cardasis one day a week with one of the family practitioners covering for him at the Ewing facility.

Harold L. Jerrell, Lee Extension agent, says nothing would have been possible without the assistance of the Tech center and East Tennessee.

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A microwave oven may save time, but it can cost more to use. A study by Suzanne Richardson for a doctorate at Virginia Tech's College of Human Resources made this determination in a comparison of time and cost between the microwave oven and the electric range.

Richardson, who now is on the faculty at the University of Maryland, cooked 20 different convenient food items and their home prepared counterparts. She tabulated total preparation time and the active time in which the cook's full attention was required.

The majority of the tested foods required less total preparation time when heated or cooked with the microwave oven than with the electric range. Foods that took less time in the microwave were mostly those which, when cooked conventionally, were heated in a range oven.

"If the cook counts the time it takes to get the meal from start to finish, the microwave oven is faster," says Janice Woodard, Tech Extension specialist in home management and equipment. "Seventy-eight percent of the food items, however, required the same or active preparation time when they were prepared in the microwave."

The study shows that there was a higher total cost in the microwave for equal-weight servings for two thirds of the items in the test.

The cost difference between cooking with the microwave and the electric range was less than one cent a serving for several items. In the remaining food, differences ranged from six percent to 43 percent. The highest cost was for pancakes which required the use of a browning dish that added to the cost.

The items studied were selected on the basis of their high use as convenience foods, not because they were especially suited to microwave cooking.



Home gardening is the number one outdoor leisure activity in America. This may help to explain the spectacular growth of Extension's Master Gardener program, says Judith L. Schwab, state coordinator of the program. Master gardeners are persons who receive horticultural training from Extension in return for an agreement to spend a like number of hours in using their new knowledge to help others learn about horticulture.



There now are twenty-two Extension units working with Master Gardeners in Virginia. In 1983-84, more than 700 Master Gardeners were trained in the state. These volunteers contributed more than 27,000 hours of volunteer time. If their time was worth \$6.50 an hour, this represented a contribution of \$180,902 to the state.

Translating these hours into those worked in a year by a full-time employee, it means that Master Gardeners provided the equivalent of 14.5 staff people, or .66 employees for each unit with the program.



The Jamestown 4-H Educational Center has nearly two thousand more dollars in its renovation fund because of efforts of nearly one hundred Hanover County citizens. A strictly volunteer effort resulted in 1,275 cans of apple butter and nearly 400 gallons of apple cider being packaged and sold to area residents.



A local Master Gardener, Frank Boldridge, had the idea of canning and bottling the apple butter and cider to benefit the camp fund. He even donated the press to make the cider. Another volunteer, Charles VanGoor, designed the special label that was affixed to the products.

One hundred bushels of apples were donated by Orange County's Mooremont Orchards and a call to pick the fruit resulted in 4-H'ers, leaders, volunteers, and Extension agents gathering the fruit and working in the Hanover Community cannery to prepare, can, and label the apple butter. Many county businesses also contributed space to sell the products.

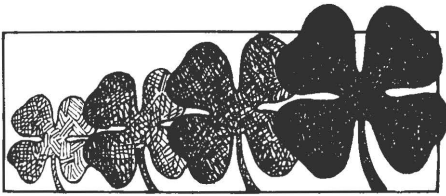
The sale was so successful that thought is being given to repeating the project next fall. The county is trying to raise \$55,000 for renovation of the Jamestown center.



Farmers having financial problems are receiving assistance from the Virginia Cooperative Extension Service, thanks to a \$50,165 grant from the U.S. Department of Agriculture. The money is being used to establish six financial counseling centers throughout the state. Staffed by Extension farm management agents and volunteer financial analysts, the centers are assisting those farmers referred by local Extension agents and agricultural lenders.

"Farmers in financial distress are being identified and provided the highest level of financial assistance and guidance," says Jerry Warmann, Virginia Tech Extension agricultural economist and project leader. "This should enable them to adjust their farm business to ensure its survival."





4-H Is A'Changing

by Eleanor C. Jones

The popularity of 4-H among today's young people can be directly attributed to its ability to add programs that appeal to them. That fact stands out in a comparison of 4-H enrollment figures between 1966 and 1984. The 4-H program continually has added various programs when it was determined that the young people wanted them.

This addition of programs is evident when it is noticed that five of the top ten programs in 1984 were not in existence in 1966. In fact, more than 20 programs that were offered last year were not in existence in 1966.

The top ten programs among the 143,399 Virginia 4-H'ers last year were poultry, fisheries science, electric energy, citizenship, wildlife, exploring 4-H, foods and nutrition, horticulture, share-the-fun, and public speaking. This list bears little resemblance to the 1966 list that was headed by clothing and included foods and nutrition, electric energy, safety, home environment, wildlife, home management, forestry, horticulture, and horses.

Last year more than 23,000 young people participated in the poultry project, a significant change from eighteen years ago when the program was among the bottom three in 4-H. The five on last year's list that did not exist in 1966 were fisheries science, citizenship, exploring 4-H, share-the-fun, and public speaking. The "old reliable" project is electric energy, finishing third in both lists.

"4-H continues to build on its traditional base of home economics and agriculture to provide a representative program to a wider variety of youth," says C. Dean Allen, Extension specialist for 4-H youth. "But as society changes, 4-H has to adjust so that it will still be among those organizations in the forefront."

The number and types of young people involved in 4-H have changed to follow the Virginia transition from a rural to urban population, Allen says. Non-farm and urban youth groups have shown the largest percentage of growth in 4-H. The number enrolled in farm groups has remained steady, in spite of a significant decline in the state's farming population. Therefore, he says, "a greater percentage of farm youth is being reached today than in 1966 when enrollment stood at slightly more than 66,000."

Although there are no records to substantiate it, it is believed that the median age of the 1984 4-H'er (12.1) is slightly below that of the 1966 member. The main reason

for this decline can be attributed to the fact that in 1966 members were between ten and twenty-one, while today the membership is for those between nine and nineteen.

Although the percentage of females in the 4-H program has remained relatively stable during the eighteen-year period, the interest in projects has shifted rather dramatically. Whereas nearly 19,000 were enrolled in the top clothing project in 1966, the number was barely below 4,000 last year. The number enrolled in foods and nutrition and the home environment declined fifty-one and eighty-seven percent, respectively. The numbers in home management also have declined dramatically.

On the other hand, the numbers in the traditional agricultural programs have remained stable or increased. Agronomy, for example, increased by more than 300 percent during the period, while beef remained fairly constant. There was a slight decline in the number enrolled in dairying and a sharp reduction among those entered in the tractor project during the eighteen-year period.

During the eighteen-year period, there also were a few projects which began with good enrollments but were discontinued as interest seemed to fade or the project was considered very much like another that was being offered. Among these projects were community resource development, dare to discover, and introduction to 4-H.

"We constantly are evaluating the programs," Allen says. "Of course, there are those which are universal and offered in every state. There also are those that are only offered in one region or one state as, for whatever the reason, the young people residing there are interested in such programs."

Allen points out that in 1966, the 66,347 young people had a total participation figure of 102,452 for an average of 1.5 projects per member. Last year, the total participation figure of the 143,399 members was slightly more than 200,000 for an average of 1.4 projects per member. "What we would really like to see," Allen says, "is that figure to climb to where each member would participate in two projects."

Until then, the state 4-H staff will continue to monitor the desires of the youth of Virginia so that it can offer 4-H'ers programs which, in addition to being fun, will equip them to handle the problems of adulthood.

1966 Top Ten Projects

Project	Enrollment
Clothing	18,996
Foods and Nutrition	17,046
Electric Energy	10,244
Safety	6,620
Home Environment	5,453
Wildlife	4,816
Home Management	4,595
Forestry	4,593
Horticulture	3,512
Horse	3,037

1984 Top Ten Projects

Project	Enrollment
Poultry	23,164
Fisheries Science	21,116
Electric Energy	15,607
Citizenship	12,442
Wildlife	11,744
Exploring 4-H	9,509
Foods and Nutrition	8,769
Horticulture	8,539
Share-the-Fun	7,529
Public Speaking	7,131

Need a Meeting Place?

Four continuing education and six 4-H educational centers offer Virginia agencies, organizations, and companies meeting facilities in congenial surroundings at very reasonable rates. Most also have a wide variety of recreational opportunities.

Lodging and meals are available at seven of the centers and are near the other three. For more information concerning how you can have a successful meeting, contact the center director of your choice or C. Ned Lester, associate dean, Extension Division, Donaldson Brown Center for Continuing Education, Virginia Tech, Blacksburg, Va. 24061 at (703) 961-5631 for additional information.

TEN CONVENIENT MEETING LOCATIONS STATEWIDE

1 Southwest 4-H Educational Center
Route 4, Box 131
Abingdon, Virginia 24210
Telephone 703-628-7231

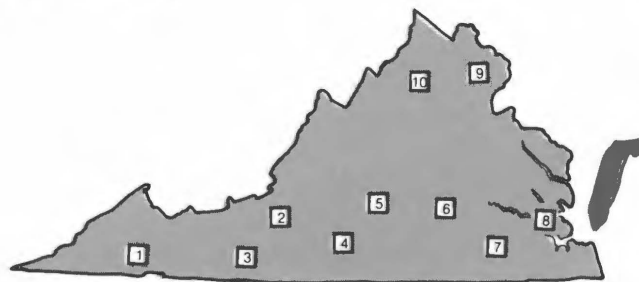
2 Donaldson Brown Continuing Education Center
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
Telephone 703-961-6208

3 Reynolds Homestead Continuing Education Center
Box 21
Critz, Virginia 24082
Telephone 703-694-7181

4 West Central 4-H Educational Center
Route 1, Box 289
Wirtz, Virginia 24184
Telephone 703-721-2759

5 Holiday Lake 4-H Educational Center
Route 2, Box 234
Appomattox, Virginia 24522
Telephone 804-248-5444

6 Southern Piedmont Research and Continuing Education Center
P. O. Box 448
Blackstone, Virginia 23824
Telephone 804-292-5331



7 Southeast 4-H Educational Center
P.O. Box 637
Wakefield, Virginia 23888
Telephone 804-899-4901

9 Northern Virginia Graduate Center
2990 Telestar Court
Falls Church, Virginia 22042
Telephone 703-698-6000

8 Jamestown 4-H Educational Center
Route 1, Box 171
Williamsburg, Virginia 23185
Telephone 804-229-2571

10 Northern 4-H Educational Center
Box 1101
Front Royal, Virginia 22630
Telephone 703-635-7171

Facility Capabilities and Services

LOCATION	LODGING			FOOD			MEETING SPACE			SUP-PORT	RECREATION										AVAILABLE												
	Singles	Two or more	Four or more	Breakfast	Lunch	Dinner	Snack Bar	Classrooms	Theatre	Outdoor	Audio-visual Program Planning	Swimming	Boating	Fishing	Hiking	Golf	Tennis	Softball	Volleyball	Basketball	Archery	Camping	Picnicking	Historical sites	Weekdays July-August	Weekends July-August	Weekdays September-June	Weekends September-June					
1			•	•	•	•		•	•	•	•	•	•	•	•			•	•	•	•	•	•	•	•	•	•	•	•	•	•		
2	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
3								•	•	•	•	•	•	•	•										•	•	•	•	•	•	•		
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7		•		•	•	•		•	•	•	•	•	•	•	•																		
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9								•	•	•	•	•	•	•	•										•	•	•	•	•	•	•	•	
10	•	•	•	•	•	•		•	•	•	•	•	•	•	•																		

*Not available November-March.

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