

NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

PLAN OF WORK

AGRICULTURAL PRODUCTION, MANAGEMENT AND NATURAL RESOURCE USE - *Project III*
 Title of Project 75

EXTENSION ANIMAL HUSBANDRY

Section

1965-66

Fiscal Year

Name and Title of worker	Percentage of Time Devoted to Entire Project by Each worker
<u>JACK KELLEY</u> Project Leader	100 %
<u>J. S. Buchanan, Beef Cattle & Sheep</u>	100 %
<u>A. V. Allen, Beef Cattle & Sheep</u>	100 %
<u>J. W. Patterson, Beef Cattle (Performance Test)</u>	100 %
<u>J. R. Woodard, Swine (Evaluation Station)</u>	100 %
<u>D. G. Spruill, Swine</u>	100 %
<u>J. W. Parker, 4-H Club Work</u>	50 %
<u>J. R. Jones, Swine (Area Specialist)</u>	85 % <i>15 Exp. Station</i>
<u>R. F. Behlow, Extension Veterinarian</u>	100 %
<u>C. M. Reese, Beef Cattle (Performance Test)</u>	100 %
_____	%
_____	%
_____	%
_____	%
_____	%

Signed _____
 State Director of Extension

Date Recommended _____

Signed _____
 Administrator, Federal Extension
 Service, U.S. Department of
 Agriculture

Date Approved _____

1965-66 PLAN OF WORK
FOR
ANIMAL HUSBANDRY EXTENSION
IN
NORTH CAROLINA

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ANIMAL HUSBANDRY PLAN OF WORK

1965-1966

PROJECT III

AGRICULTURAL PRODUCTION, MANAGEMENT AND NATURAL RESOURCE USE

- A. Major problem of Extension's Clientele - To encourage farmers to increase income from meat animals by the addition of meat animals where resources are available for profitable expansion. Increase income from the present number of livestock by using the best known research available.
- B. Major components of this problem:
1. Unwise use of resources.
 2. Failure to use improved practices in production and marketing.
 3. Size of enterprise and volume of production within a given area too low for maximum return.
 4. Resistance to change.
 5. Shortage of production tested, quality breeding stock.
- C. Goals:
1. Beef Cattle. Increase 1962 income by 38% by 1966.
 - (a) One-half by increasing the number of beef cattle.
 - (b) One-half from:
 - (1) Increasing the number of cattle marketed per 100 cows in the breeding herds from 65 to a minimum

of 75.

- (2) Improving the average quality of feeder calves by one grade.
- (3) Increasing the average weaning weight of calves by 25 pounds.

2. Hogs. Increase 1962 income by 40% in 1966.

(a) One-half from increasing numbers.

(b) One-half from:

- (1) Increasing litter size from 7.2 to 7.6
- (2) Improving carcass quality by one grade.
- (3) Improving feed efficiency by 15%.

SWINE

1. STATEMENT OF PROBLEM - Jack Kelley & D. G. Spruill
 - A. To get farmers in North Carolina to recognize swine as one of the important enterprises that can be used to increase farm income.
 - B. Training of extension agents in swine production, especially agents that have the responsibility of swine, but did not major in Animal Science.
 - C. Develop a swine program with large enough units to justify expense of housing, breeding and other expenses to make it a profitable enterprise.
 - D. Housing and equipment on many farms are inadequate for a good swine program.
 - E. Records from the Swine Evaluation Station indicate that farmers can increase income from swine by using breeding animals that are bred for growth, feed efficiency and meat qualities.
 - F. As the size of swine herds increase the problems of diseases are also increased. This is especially true with baby pig diseases.
 - G. Record keeping continues to be one of the major problems in the swine program.

H. Shortage of feeder pigs as a large number of feeders in Eastern Carolina are unable to keep their pens filled with quality pigs.

2. PLAN OF ACTION -

More emphasis will be placed on all-practice demonstrations throughout the state that can be used to train both agents and farmers in swine production. These demonstrations will be based on the all-practice material prepared by the all-practice committee.

Train county extension agents in swine production by one week training courses, one day schools, and county visits by the specialists, newsletters and demonstrations. One new technique to be used is the training of agents in groups of four, with each agent being trained for a special phase of swine production so that he can hold a meeting in his county and then rotate to the three other counties on a round-robin basis, so that farmers will receive instructions on four phases of swine production with each agent giving instruction on only one subject.

Intensive training; for example, two-day swine nutrition school for agents and leading farmers. These training schools will be for selected farmers, but it will go into more depth on feeding, breeding, and disease control.

Emphasis on feeder pig production through the piedmont area will be expanded and organized marketing in the Hillsboro,

Greensboro, Winston-Salem, Statesville, Lincolnton, Troy, and Carthage areas.

The Swine Development Center at Rocky Mount will be used for field days and tours, giving farmers and agents an opportunity to compare different systems of swine raising.

Cooperation with North Carolina Pork Producers Association that has employed Jim Butler as a full time Executive Secretary to promote pork industry.

Plans are being made to revise slides and educational material, also develop charts that can be used by extension agents.

A Program For North Carolina Master Pork Producer

The North Carolina Pork Producers Association, Swift and Company, The North Carolina Agricultural Extension Service and the North Carolina Department of Agriculture give recognition to North Carolina pork producers and producers of purebred breeding animals who achieve the most meritorious results.

Listed below are the rules and regulations for the commercial pork producer, feeder pig producer and the producer of purebred breeding stock:

The Commercial or Feeder Pig Producer

What Is Necessary For A Producer To Have His Record Considered.

1. Nominations. The name of any North Carolina hog producer may be submitted to his local county agricultural agent by the farmer himself or by any other interested individual.

The earlier this is done the better so that the required records may be kept. Further details and record forms will be furnished after nominations are made.

2. The producer must have at least 12 sows farrow or feed 200 hogs to market weight to be eligible. All sows farrowing on the farm in the spring must be entered. Spring farrowing dates are January 1 - June 30. It is desirable that in all the herds entered, all sows will have farrowed before July 1. Feeder pigs purchased should be on the farm after January 1, and before September 1.
3. Producers will be required to provide the following data:
 - a. Date of each farrowing or date, number and weight of pigs purchased, with purchase ticket.
 - b. Number of pigs farrowed, weaned, and marketed per litter, as tops or feeder pigs.
 - c. Dates of selling and total weight of live hogs marketed of the spring pig crop, or estimated weight in the event that all of the hogs have not been marketed at the time the project closes.
 - d. Complete feed records on pigs fed to market weight starting at weaning or time of purchase.
4. Quality of pork produced will be judged by the following standards:

A.

- a. Visual inspection of producer's hogs, on the farm by a county committee made up of the county agricultural agent, one vocational agriculture teacher, and one hog buyer.
 - b. Market data - the producer will provide the following market data:
 - (1) Sales tickets showing number, price, total pounds, and grade of hogs sold. (Grade designation may not be available.)
5. The weights of the gilts which the producer desires to keep for breeding purposes and any other hogs not yet marketed will be estimated so as to get total pork production.
 6. Producers may sell their hogs at any time they choose. All records for consideration must be in the county agricultural agent's office by December 15. It shall be the responsibility of the county committee to submit all entries which meet the minimum requirement to a state committee composed of an extension animal husbandry specialist, a representative of the North Carolina Department of Agriculture, and a representative of Swift and Company.
 7. Each producer's record will be considered on its merit and those who, in the opinion of the committee, turn in the best accomplishments will receive worthy public recognition. Recognition and awards will be sponsored by Swift and Company.

Minimum requirements which must be met before the commercial hog farmer will be considered for a Master Swine Producer's Award:

1. Own 12 or more brood sows or purchase and feed out 200 or more pigs.
2. Average weaning and marketing 8 or more pigs per litter or market 97% of pigs purchased.
3. Market hogs that average 200 pounds in 5½ months or less of age for pigs born on the farm - pigs that are purchased at weaning should average 200 pounds in 3½ months or less from time of purchase with a feed conversion of 3.5 pounds of feed per pound of gain.
4. Sows must be of the quality or type to produce meat type hogs.
5. Boars must be purebred and of meat type confirmation.
6. The hog enterprise must use reasonable sanitation, disease control, and recommended practices.

The Purebred Producer

What Is Necessary For A Purebred Producer To Have His Record Considered:

1. Nominations. The name of any North Carolina purebred producer may be submitted through the same procedure as in No. 1, above, or by his state breed association.
2. The purebred producer will be required to provide evidence of a breeding program for production and quality improve-

ment by participation in the "on-the-farm" testing program and/or the "Swine Evaluation Station" testing program.

3. Complete carcass certification data on at least 10 pigs from the spring farrowing season must be provided.
4. Evidence of a satisfactory health and sanitation program. This should include herd validation and recommended management practices.
5. Participation in breed purebred shows and sales, state fair, market hog shows, etc., is encouraged.

1. STATEMENT OF PROBLEM - J. R. Woodard

North Carolina purebred swine breeders have been working through their breed associations for approximately ten years on a meat-hog certification program. For the past three years many of these same breeders have been testing litters at the North Carolina Swine Evaluation Station. Both the certification program and the Swine Evaluation Station program have helped make the breeders aware of the need for improving the performance and carcass quality of their swine.

It is realized that a real need exists to provide an opportunity for both commercial and purebred swine producers to make genetic improvement in their animals. The most effective way to make genetic improvement is to work with large numbers of animals. This necessitates going to the farms of the producers and doing some herd testing similar to the Beef Cattle Improvement Program.

An On-the-Farm Swine Improvement Program would give the breeder some indication of the backfat thickness and growth rate of his animals. Using these two criteria in selecting breeding animals should also result in improved feed efficiency and improve carcass quality since the correlation between rate of gain and feed required per hundredweight gain is approximately $-.75$ and the correlation between backfat thickness and percent lean cuts

is approximately -.70. This on-the-farm program would give breeders and prospective buyers some objective measurements on which to base their judgement in selecting breeding animals. Visual appraisal would still be used to note conformation, feet and legs, teats, etc.

2. PLAN OF ACTION

North Carolina Pork Improvement Program

A. North Carolina Swine Evaluation Station

Approximately 400 litters have been tested at the Evaluation Station since it began operating in the fall of 1961. This means that approximately 2.67 litters have been tested in each pen per year. It is estimated that 3.00 litters per pen per year would be maximum capacity. Hence, breeder participation has been excellent. Breeders are to be encouraged to enter more of their early and late litters to make maximum use of the station facilities.

During the past three years, only barrows and gilts have been tested at the station. All of these animals have been slaughtered for carcass information. This has provided a limited progeny test of the sire and sib tests of full and half brothers and sisters of the tested pigs.

Research in Animal Breeding indicates that test data on one live animal is worth the same as test data on four dead

animals. Therefore, to improve and increase the efficiency of the testing program at the station, plans are being made to test two boars and two littermates for slaughter from each litter. This will provide a larger sample from which to determine growth rate and feed efficiency. Carcass data will be obtained from the two pigs slaughtered. Individual growth rate and actual backfat probe will be available on the two boars tested. Hence, the tested boars with superior performance and acceptable carcass traits will be available for breeders to use in upgrading their herds.

Test station records cannot be highly efficient as the only basis for a constructive herd selection program. However, when used as a supplement to a well planned herd testing program which measures sow productivity, gaining ability, backfat thickness, and proper conformation, they can "round-off" a highly efficient selection program.

B. On-The-Farm Performance Testing

An On-The-Farm Performance Testing Program was initiated in mid-1964 to supplement the work being done at the Swine Evaluation Station. This program provides an opportunity for both commercial and purebred swine producers to make rapid genetic improvement in their animals since it provides a record on each pig produced.

Approximately 750 pigs were weighed and probed in ten herds during the last half of 1964. In 1965, it is expected that the program will be expanded to include 25 herds.

Interested swine breeders, both purebred and commercial, may sign up to participate in the North Carolina Pork Improvement Program. In participating herds, all pigs will be weighed and probed for backfat as near as possible to 140 days of age. Weights and backfat probes will be adjusted to a standard 140 day age and a 200 pound weight so that pigs of different ages may be compared. An index or a score which considers pigs per litter raised to weaning age, weight for age, and backfat thickness will be calculated for each pig, each litter (sow), each herd sire, and an overall herd index. The breeder will be supplied this information showing the overall performance of each pig, each sow, each herd sire, and the entire herd. This information should be most useful in selecting herd replacements, culling sows, and comparing the performance of different herd sires.

Records to be kept by breeder-

1. Sow identification - ear notching
2. Breeding records
 - (a) Date bred
 - (b) Sire

3. Farrowing report
 - (a) Farrowing date
 - (b) Number pigs farrowed
 - (c) Litter ear notch
4. Weaning report (optional)
 - (a) Date pigs weaned
 - (b) Number of pigs weaned
 - (c) Weaning weight
5. Weigh and probe at 140 days of age--assisted by Extension Animal Husbandry Specialist.

Charges to the breeder-

1. Annual membership fee \$5.00
2. Per litter farrowed \$1.00

How to enroll in On-the-Farm Performance Testing

1. Make application through County Agricultural Extension Agent.
2. Make application to North Carolina Pork Improvement Program, N. C. State, 119 Polk Hall, Raleigh, N. C.

1. STATEMENT OF PROBLEM - James R. Jones

The challenge is to improve the status of the swine enterprise in Eastern North Carolina in size and volume of production and efficiency and effectiveness of operation. The relative importance of swine should be improved and the industry should become a major supplement in a traditional one crop economy. It will be necessary to change the basic attitudes of the farm community before changes in farming patterns will be willingly accepted. The people to be directly involved in livestock production will have to increase their competence, understanding and level of knowledge. Swine production must be a specialized operation complementing other enterprises in a total farm program. Swine production must be handled as a business rather than as a sideline. Efficiency must be the cornerstone and a consumer desirable product must be produced.

2. PLAN OF ACTION

The area specialist concept will augment the regular programs in the area. An attempt will be made to transform the natural potentials and comparative advantages into a successful swine enterprise. A ready and available source of technical information and sound advice should tend to improve the comparative advantage.

Approximately half of the time will be spent with the various livestock agents. Help will be offered in the planning of their respective county swine programs. Subject matter will be offered and special assistance will be extended where necessary. An attempt will be made to upgrade these agents so that they will have more confidence in their abilities and respect for their abilities will be deserved. Agents will be encouraged to accompany specialist on visits to improve communications and to help upgrade the particular agent in the subject matter field.

An attempt will be made to work with additional producers in each of the counties, working toward a goal of 10 per county. Producers will be contacted as far as possible on a regular basis but allocated time will be in direct proportion to problems, interest and apparent improvement. The program will remain as versatile as possible to test new approaches and to take advantage of local conditions.

In working with individual farmers, an attempt will be made to deal with present problems and obvious program defects. They will be encouraged to improve their operation, to accept a total program and to treat their enterprise as a business. Programs should include long-range plans. A similar theme will be apparent in the whole area as far as accepted and recommended practices are concerned. Successful hog production will require a good job in all areas of breeding, feeding, management, disease control,

facilities and marketing at the same time rather than emphasis in one area at the expense of some other. The absolute necessity of consistently producing a quality product and decreasing the costs of production will be stressed.

In an effort to change attitudes and gain wider acceptance of swine as a supplementary enterprise, mass media will be utilized. Specialist will assist with promotional meetings, field days and tours. An attempt will be made to make the fullest use possible of the Rocky Mount Experimental facilities. Speaking engagements will be accepted for both livestock groups and agriculturally related groups. Swine schools and training meetings will be promoted and sales and shows will be boosted. Carcass data work and testing, either central or on-the-farm, will be actively promoted. The specialist will be available for any assignment toward the betterment of the swine enterprise in the area that could be supported through the extension service.

Working through the swine committee of the Coastal Plains Development Association and with the cooperation of livestock agents in the area, special projects will be undertaken. Examples would be to obtain more validated herds, more cooperation in the cholera eradication program or greater participation in various testing program.

Professional improvement and technical competence of the

specialist will be a continuing objective. This need is magnified by the rapid changes in the field, the increased size and capital investments of various operations, and the increased information and misinformation available to producers from numerous sources.

BEEF CATTLE**1. STATEMENT OF PROBLEM - J. S. Buchanan**

A special project was started in 1963, to increase and improve the production of stocker cattle in North Carolina. This phase of beef cattle production offers a good opportunity for supplementing farm income from tobacco and other cash crops, and utilizing land, feed and labor that is available during the winter months.

The problem is to stimulate more interest in expanding the profitable production of stocker cattle on farms throughout the state. Additional information is needed on the feeding and management of stocker cattle. More all-practice stocker cattle feeding demonstrations, keeping accurate records, should be used to expand the production of this class of cattle on a sound basis.

For the first time, four producers of stocker cattle will keep these cattle on their farm and feed them limited grain on Coastal Bermuda grass and sell them as finished cattle in early fall. Records will be kept on these feeding demonstrations using limited grain on grass.

2. PLAN OF ACTION

A. Seven counties have been selected in different areas of the state to conduct stocker cattle feeding and management demonstrations in 1965. The twenty-four demonstrations in these

seven counties represent 2,285 head of stocker cattle that were purchased in the fall of 1964, and will be marketed in April of this year. All of these farm feeding and management operations are being used as demonstrations of applied research to encourage more farmers throughout the state to establish similar operations.

- B. Extension specialists are working closely with extension agents in these counties in the planning and supervision of these demonstrations.
- C. County agents and extension specialists will assist stocker cattle producers as follows:
 - (1) Conduct field meetings and tours on the different systems of feeding and management of stocker cattle.
 - (2) Furnish information on feed lot equipment, different methods of handling silage, and recommend a complete management program.
 - (3) Visit each demonstration farmer and work out a definite plan for his particular operation.
 - (4) Provide record forms and prepare a complete summary of all demonstrations. This information will be made available to all county extension workers and stocker cattle producers.

- (5) Make definite recommendations to each stocker cattle producer conducting a demonstration on how he can improve his operation based on his records for this year.
- D. Compare the results of those demonstrations that market their stocker cattle in April with those that feed limited grain on grass and market slaughter cattle in September.
- E. Stocker cattle feeding and management demonstrations will be made available to all counties for field days and tours. Counties that are not producing stocker cattle at the present time will be encouraged to make full use of these demonstrations.
- F. A goal of 10,000 head of stocker cattle produced and marketed through state sponsored sales by 1966, has been set in this special project.
3. PROGRESS TO DATE
- A. A total of 8,321 head of stocker cattle were marketed through eight state sponsored sales in 1964, as compared to 5,249 sold in seven sales in 1963. Ten state sponsored sales for marketing stocker cattle have been scheduled for April, 1965.
- B. In 1963 and 1964 records were completed on a total of forty individual stocker cattle feeding and management demonstrations representing 2,484 head of cattle. A complete summary

of these records has been made available to every county in the state.

- C. There are approximately 9,000 head of stocker cattle on farms in the state at the present time to be marketed in the spring of 1965.
- D. Demonstrations on feeding limited grain on Coastal Bermuda grass are planned for this year.

1. STATEMENT OF PROBLEM - A. V. Allen

Special work with feeder calf producers in the Rich Square and Monroe areas for the past three years have indicated that improvement in grade of calves of individual producers calves can be made. However, improvement in the sale as a whole is more difficult. There seems to be a tendency for the grade of calves at some sales to vary more than other sales. This is a major problem in the marketing of the calves from these sales since the buyers never know what to expect in the way of quality from year to year. This is a problem to the sales management since penning space for each year is determined by the records of the previous year. It would be valuable to producers, sale managers, and extension workers if an answer to this problem could be found.

It is natural that there should be some variation from year to year due to the difference in growing conditions. However, the variation in the statewide average for the past five years has been less than 10% while three sales have varied 22%, 22%, and 24% during this same time. This is shown in the following chart:

Percent of Medium Calves Sold

<u>Sale</u>	<u>1964</u>	<u>1963</u>	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>Variation</u>
Goldsboro	49	28	41	27	35	22
Hillsboro	39	44	33	25	47	22
Laurel Hill	51	38	39	34	27	24
All Calf Sales	45	40	36	36	37	9

2. PLAN OF ACTION

- A. The managers of these three sales would be contacted and asked if we could study the records of these sales for the past five years. From the records we should be able to determine if the variations in percent of medium calves was due to a change in consignors or due to variation of grades of calves from the same herds.
- B. A list of the herds showing the greatest amount of variation will be made from the sale records. The livestock agents in the counties concerned then would be contacted and the agent and specialist would visit the herds to try and locate the cause of the trouble in each herd. The agent and specialist would then work with the producer to correct the problems in each herd.
- C. If the solution to variation of grades of calves in each herd could be found it would serve as a basis of recommendations to correct similar problems in other areas.

- D. This project will be carried out by Animal Husbandry Extension Specialist in cooperation with the managers of the three sales and the county livestock agents involved.
- E. The value of this study can be measured by a comparison of the records of these three sales with the other calf sales in the state.

PERFORMANCE TESTING

1. STATEMENT OF PROBLEM - J. W. Patterson & Clint M. Reese

In general North Carolina does not have sufficient cattle with performance records to enable the producer to select the type cattle that would be most profitable.

Means of collecting carcass information on progeny from herd sires presents several problems which have not been solved. The final step in performance testing is producing the type carcass demanded by the public at a profit to the producer.

2. PLAN OF ACTION -

Efforts for increasing numbers for performance testing in 1965 will be directed more to the purebred breeders. Genetic improvements for the entire beef cattle industry will come mostly by improvement in purebred cattle. The various breed organizations in the state have offered their support and cooperation in expanding the performance testing program to the purebred breeders. Our goal is to have at least one herd from each county on test where the numbers justify the program.

Efforts will be made to inform the producers of the value of selecting individual animals upon their performance testing record. Demonstrations during weighing and grading of the animals on the farm will be conducted when possible.

Currently there are three workshops being planned for county extension workers who are assigned with livestock duties. The

workshops will be held in the three regions of the state which are: The mountains, piedmont and coastal plains. The purpose of these workshops will be to familiarize the agents with the performance testing programs and how it can be used in the county livestock program.

Purebred producers will be encouraged to select their top bulls and place them on the 140-day feed test. They will be encouraged to follow the standard recommendations set up for conducting the feed test.

Studies will be made and information collected to be used in determining the most practicable and workable method to be used in collecting or obtaining carcass information for producers. Once a plan has been formulated, this segment will be added to the performance testing program. With the performance information and carcass data available producers should be able to do a much better job of selecting animals.

The approach will involve the extension specialists, county extension personnel, organized cattle groups and associated agricultural agencies and industries.

The Educational Approach:

- A. Mass communication
- B. County group meetings

- C. Individual farm visits
- D. Breed meetings and field days
- E. Demonstrations
- F. Demonstrational sales

4-H WORK

1. STATEMENT OF PROBLEM - Jack W. Parker

The 4-H Club program in North Carolina has undergone tremendous change in the past two to three years. The clubs have been moved from schools out into communities. Now local leaders are in charge of the 4-H Club program in each community. In addition to the local 4-H Club leader there is also a project leader within each community who is responsible for each of the subject matter areas of 4-H Club work.

We realize the importance of this project leader and feel these leaders will determine the success we will have with 4-H livestock projects. Since this is a new approach to doing 4-H Club work, we find that all of these project leaders are new and need materials to aid them in working with their project groups. Also, many counties are now ready to select their project leaders and need encouragement and assistance in locating the right kind of leader.

2. PLAN OF ACTION

- A. Evaluate the present conditions in each county as related to the number of livestock project leaders and determine how effective these leaders are.
- B. Work on science exercises, related to animal science, to be used as project work for boys and girls who do not have

facilities to carry out production projects. These exercises will also be used to supplement production projects.

- C. Complete a project leaders guide for livestock project leaders. This will be related to the subject matter involved with 4-H livestock projects and will supplement the general 4-H Leaders Guide.
- D. Prepare visuals to be used in teaching 4-H groups the basic skills in livestock production.
- E. Counsel with 4-H Club agents to determine the kinds of information needed by the livestock leaders in order that they may carry on an effective livestock 4-H program.

VETERINARY

1. STATEMENT OF PROBLEM - Robert F. Behlow

A. Hog Cholera Eradication Program.

North Carolina has just moved into Phase II in the Hog Cholera Eradication Program. Some of our neighboring states are progressing much faster than we are now. Gwaltney Packing Company is shipping pork to foreign countries from herds that are certified free of hog cholera.

B. Brucellosis Validation Program.

With the expansion of the swine industry, Brucellosis in swine continues to be a public health hazard and an economic problem in our state. Most cases of human Brucellosis are now coming from swine.

C. Pig Scour Project.

Pig scours is one of our main disease problems in North Carolina. The North Carolina Pork Producers Association is more concerned about this problem than any other at present in swine.

D. Swine Herd Health Program.

Disease problems in swine are one of the major factors discouraging some of the big producers from expanding their swine operations. A few have already quit the business because of disease problems.

E. Beef Herd Health Program.

Parasite problems, reproductive problems, and other diseases are causing heavy losses to North Carolina cattlemen. In 1963 the Beef Improvement Program in North Carolina had only a 74 per cent weaned calf crop. After culling about 1,000 cows out of this group the 1964 weaned calf crop was improved to 81 per cent. This represents four per cent of North Carolina beef cattle on test.

F. Herd Reproductive Status Project.

Reproductive problems are costing North Carolina farmers heavy economic losses in both beef and dairy cattle. (See above section on beef cattle.)

2. PLAN OF ACTION

A. Hog Cholera Eradication.

Cooperate with the state veterinarian on the educational phase of this program. Swine meetings and swine schools will be conducted to educate our county agents, livestock specialists and farmers. Radio shorts and educational leaflets from the U.S.D.A. will be used. The results will be determined by the progress the state makes on the reduction of incidence of this disease.

B. Brucellosis Validation Program.

Conduct meetings and swine schools with our livestock specialists, county agents and farmers on the importance of testing

for this disease. In this approach we will stress the public health aspects of this disease. Radio programs will be conducted along with newsletters to agents. The progress will be determined by the number of validated herds in the state.

C. Pig Scour Project.

This is a cooperative study supported by the North Carolina Pork Producers Association. A survey will be conducted on a number of swine producers representing different types of housing, different size herds, degree of isolation, and facilities varying in frequency of use. From this survey, cooperators will be selected for field investigations on management factors and that will contribute environmental conditions to the control of scours in baby pigs.

Field studies will be conducted on the use of a new anthelmintic agent for strongyloides and nodular worms in pigs.

D. Swine and Beef Herd Health Program.

In 1965 North Carolina will publish health programs for both beef and swine. Meetings will be conducted with agents, veterinarians and farmers pertaining to these programs.

E. Herd Reproductive Status Project.

A study to determine the practical use of the HRS value under farm conditions and assess its value in herd management.

The system will be tested in the three farm areas of Wake, Cumberland and Davie Counties. A total of 250-300 cows (in at least two herds, but in no more than five herds) will be observed per area. After one year the data will be summarized and the future course of the study will be determined. Personnel, on the local level, will consist of the county extension dairy agent, the cooperative herd veterinarian and the herd manager. The study will be under the direct supervision of the staff of North Carolina State.

