

VIRGINIA AGRICULTURAL EXTENSION SERVICE

VETERINARY EXTENSION PLAN OF WORK
(Name of Project)

For

Calendar Year 1960

Major phases of project or subdivisions of project covered	Name of Worker*	Percentage of time devoted to entire project by each worker
Livestock Disease and Parasite Control	S. L. Kalison, D.V.M.	100%

Date submitted: May 10 . 1960

Signed: S. L. Kalison
Project Leader

Date approved: May 10 . 1960

Signed: Joseph Walser
Head of Department

Date approved: May 12 . 1960

Signed: D. H. Pennington
State Director of Extension

Date approved: JUN 16 1960 . 1960

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Administrator, Federal Extension
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*If phases of project are divided between two or more workers, indicate assignment to each.

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Date submitted: <u>May 10</u> . 196 <u>0</u> .	Signed: <u>S. L. Kalison</u> Project Leader
Date approved: <u>May 10</u> . 196 <u>0</u> .	Signed: <u>Wm. H. Swales</u> Head of Department
Date approved: <u>May 12</u> . 196 <u>0</u> .	Signed: <u>D. H. Doughty</u> City State Director of Extension
Date approved: <u>JUN 16 1960</u> . 196 <u>0</u> .	Signed: <u>W. H. Swales</u> Administrator, Federal Extension Work, U. S. Department of Agriculture

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Analysis of Situation

Changes in Agriculture since 1940 have been profound. Available statistics indicate the nature of the trends that have occurred. Since 1940.

1. Total population of The United States has increased in excess of 37%.
2. The farm population has decreased approximately 23%.
3. The percentage of the land area in Virginia devoted to agriculture has decreased from 64 to 57.4.
4. The number of farms has decreased from 174885 to 136416.
5. The average farm has increased in size from 94 to 107.7 acres.
6. The volume of work per man hour on the farm has been increased by 96%.
7. The total number of hours per week each farm laborer contributes has been decreased from 124 to 84.

An analysis of this data indicates that a 32% increase in the total physical volume of agricultural production has been obtained with a reduced labor force working fewer hours per week than ever before. The increased demand for agricultural products resulting from an increase in population and a higher standard of living has not only been satisfied but exceeded in many areas.

Research in all phases of the agricultural enterprise has provided the information and methods that have made it possible for a single farm laborer to support 19.74 people to-day as compared to 10.81 people some 18 years ago.

The number of animal units of productive livestock has increased by 43% during the same period of time that the total number of acres devoted to livestock production has decreased. The present income from livestock and livestock products constitutes 54.8% of the total agricultural income in Virginia. It is, therefore, the most significant phase of the total program in agriculture since it is the largest contributor to the total income derived from this industry.

It is apparent that more animals are being supported by a unit of land than ever before. It is also evident that a single labor unit is responsible for the care and management of more animals than has been true in the past. The concentration of a larger number of animals on fewer acres has occurred. Research is being intensified that will allow an even greater concentration of animals than is presently possible.

This situation is without doubt advantageous from the economic standpoint. It does, however, make the control of diseases and parasites of livestock much more difficult. The limiting factor in further concentration of the animal population, which would make it possible to utilize production line techniques, labor saving devices and a smaller labor force may very well be our failure to control these diseases and parasites

The losses sustained by the livestock industry as a result of mortality and reduced production due to diseases and parasites is estimated by The Agricultural Research Service to be approximately 3 billion dollars per year. The losses have increased in direct proportion to the increase in the concentration of livestock. It thus becomes apparent that one of the most pressing if not the most pressing need facing the livestock industry to-day is the necessity to utilize available knowledge and resources to control these diseases and parasites.

Other factors involved which make it extremely important to emphasize disease and parasite control are many and varied. Some of these are germane to the subject under discussion.

The economic situation for the livestock producer has generally been unfavorable for the past several years. Prices received for animal products have not increased in the same proportion as has the cost of the materials purchased by livestock producers. The margin of profit has remained static or decreased. The livestock industry has recognized the necessity for an increased profit margin. It appears that the attempt to accomplish this will be by means of a decrease in the cost of production through efficient operation rather than an increase in the price of the product sold. Efficient control of diseases and parasites with a consequent reduction in losses can assist significantly in this approach to the increase of the margin of profit.

The animal as a reservoir of diseases that may affect humans has come under closer scrutiny by the medical profession, public health officials and others. Over 80 diseases and parasites are known to be transmissible between animals and man. The consuming public is rapidly being made aware of this situation. Public demand requires a good quality product that is free of the possible capability of spreading disease. An attempt by any group to reduce surpluses of its products through increased consumption will have to include the merchandising of a product of unquestionable wholesomeness. The sick animal can not produce such a product.

A great deal of emphasis has been placed upon efficiency in feed utilization and economical production by all phases of the livestock industry. Animals suffering from acute infections with frankly apparent symptoms as well as those with subacute conditions in which symptoms are barely recognizable or in some cases inapparent cannot convert feed to animal protein efficiently. This is quickly reflected in the reduced net profit realized by the producer.

It becomes readily apparent that a healthy animal is essential if a wholesome product that will meet consumer demands is to be produced at a reasonably low cost. This will be a necessity if the individual producer is to survive and the industry is to show a progressive and steady growth.

The solution to the problem must be approached from two broad areas. There are many diseases and parasites for which preventative and control measures are as yet unsatisfactory. Research in these diseases and parasites must be intensified so that sufficient information will become available to make prevention and control possible.

There are many diseases and parasites for which effective preventative and control measures are available. In many instances this information is not being utilized nor applied to the fullest extent of its effectiveness. It is in this area that an educational program can be formulated and carried out by extension that will result in the greatest benefit to the livestock industry.

Traditionally the livestock producer has called upon the veterinarian to treat an animal that is already affected. He has not often utilized the training and experience of the veterinarian in the prevention of diseases and parasites. It has been proven repeatedly that the dollar spent for veterinary advice and assistance in formulating and applying a program of prevention yields a greater return than a dollar spent in applying therapeutic measures.

It is gratifying to observe an increase in interest among veterinarians and livestock producers in the prevention rather than treatment aspects of livestock diseases. When prevention rather than treatment becomes the primary approach to the problem of reducing losses due to diseases

and parasites, significant progress will be made.

It is axiomatic that during periods of unfavorable economic conditions, livestock people attempt to save money by turning to public agencies and home treatment of livestock for help in their animal disease problems. The conditions in the last few years have been such as to favor this trend. Certain manufacturers of drugs and biologicals have exploited this situation. Well organized advertising campaigns with considerable financial support have been carried on. This has resulted in the misuse and indiscriminate use of drugs that has not only increased losses due to diseases and parasites through a delay in diagnosis and the application of proper treatment, but has created problems in the human population.

The livestock producer must be educated to the fact that:

1. Preventative medicine is the most important aspect of any disease control program.
2. The veterinarian should be used in the preventative phase as well as treatment phase of diseases.
3. Proper selection of drugs can be based only upon a proper diagnosis and that both diagnosis and application of treatment can be applied only by a professional.
4. The utilization of management procedures along with the proper use of the veterinarian will result in a greater saving of money than the use of do-it-yourself treatments.

The greatest impact upon the problem of diseases and parasites of livestock can be made by a cooperative approach. All segments of the industry as well as all professional groups concerned with livestock production and distribution must combine their resources and efforts to stimulate research and secure acceptance of the principles of disease prevention and control by the livestock producer. This phase of the veterinary extension program must be continued and emphasized if possible. The work of The Joint Committee on Dairy Cattle Health of The American Veterinary Medical Association and The American Dairy Science Association must be continued. The liason between The State Veterinary Association and The State Pharmaceutical Association must be strengthened. The formation of other joint groups would be desirable but must wait upon more personnel before it can be undertaken.

The disease and parasite problems existing in each class of livestock are many and varied. The limited personnel available to carry on the veterinary extension program make it necessary to select specific problems for emphasis rather than attempt to deal with so many that the amount of time devoted to each would be so small as to preclude any possibility of making significant progress. For this reason consultations are held with members of the dairy science, and animal husbandry extension staffs as well as the department of agriculture in order to evaluate the situation. The problems selected for

emphasis were those determined to be most significant for which present control and preventative measures are adequate.

Cattle

The number of dairy cattle has decreased slowly but steadily since 1930. The total production of dairy products has increased during the same period and their value has shown a corresponding increase from \$46,342,771.00 to over 60 million dollars annually. The average production per cow has undergone a sharp rise until it is over 9000 pounds of milk in D.R.I.A. Tested herds.

The individual cow has become a higher producing, harder working animal. She is more susceptible to disease and, therefore, more difficult to keep free of disease. It also follows that when a higher producing animal becomes a victim of disease the quantity and, therefore, the value of the product lost is greater. It becomes apparent that as the production level increases the necessity to prevent the occurrence of diseases where possible rather than to treat them when they appear takes on added importance.

Hastie, of all the diseases affecting dairy cattle, concludes the largest single cause of economic loss to the dairy industry. The Agricultural Research Service estimates the annual loss to be 1/4 of a billion dollars per year in The United States. It is estimated that it is responsible for at least a 5 million dollar annual loss in Virginia.

At least 50% and most likely a larger percentage of this loss can be prevented and is, therefore, necessary, It has been demonstrated repeatedly that good management procedures and proper milking methods can and do reduce the incidence of the disease by 50% or more. This is the responsibility of the man in charge of the cattle and it is to this group that the management phase of the educational program must be directed.

A total control program requires that proper veterinary diagnosis and veterinary treatment be added to the good management and managed milking procedures. The responsibility for this phase of the program rests with The Veterinarians and the diagnostic laboratories. Latest developments in diagnostic techniques and therapeutic measures must be made available to the veterinarians as they become known.

A successful control program consists of all of the phases outlined. The neglect of any one part of the program reduces the effectiveness of the others and makes it difficult if not impossible to control mastitis.

Progress against brucellosis has been more than satisfactory. The area control program was put into use two years ago and the progress exceeded our anticipated goals. If the present rate of testing continues it is within the realm of possibility that the entire state will attain the status of a modified certified brucellosis free area within the next 2 to 3 years.

During the past year, the number of calves vaccinated against brucellosis has shown a significant increase. It is now making progress that is comparable to that being made by other phases of the brucellosis control program. In 1958 approximately 45% the calves being retained as herd replacements were vaccinated. In 1959 over 70% of this group were vaccinated. Emphasis upon the vaccination phase of the program must be maintained until cattle producers in Virginia make the vaccination of all calves that are to be retained as herd replacements a routine part of herd management.

The excellent progress made in reducing the incidence of the disease to its present level can lead to a complacency with respect to its complete eradication. The idea that the battle against brucellosis has been won and that efforts toward eradication can be relaxed may very well develop as it has in the case of bovine tuberculosis. This must not be allowed to occur. Every available resource should be utilized to assure that complacency does not become a bar to the eventual eradication of brucellosis.

Failures in reproduction due to temporary or permanent sterility continue to play an important role in both the dairy and beef cattle industries. The necessity for getting dairy cattle to calve in time to take advantage of the base milk period has resulted in breeding animals back too soon after calving resulting in a lower breeding efficiency. This is but one of the management factors resulting in breeding failures. While other factors such as diseases, nutrition,

infections, etc., are involved, the biggest reason for poor breeding efficiency is the failure to apply known management practices that are necessary to keep it at a high level.

The genital diseases are encountered periodically but are not responsible for nearly as many breeding failures as the management factors are. It is necessary, however, to acquaint the farmer with the genital diseases so that he may recognize the fact that they may be present in his herd and that immediate professional help is necessary.

The artificial insemination program continues to show a definite increase. It is necessary that the advantages of this program be emphasized so that the growth may continue and if possible be accelerated. The use of artificial insemination presents an excellent method of preventing the genital diseases from being introduced into a herd. It is also an important part of the control program utilized to combat the disease once it does appear.

A successful artificial breeding program depends upon a good source of semen, proper training of the inseminators, and a thorough understanding, by the breeder, of the details and techniques that are his responsibility. It is necessary that all 3 of these phases be at optimum efficiency if the breeder is to realize the advantages that are possible to him in the program.

Some problems in the beef cattle industry resemble those of dairy cattle while others are peculiar to them alone. The number of beef cattle has steadily increased from 1940 to 1955, and the volume of production has risen by 30% over the same 15 year period. The same

situation relative to diseases and parasites resulting from increased concentration of animals and higher production per animal exists in the beef cattle industry as has been discussed in relation to the dairy industry.

The brucellosis problem concerns beef cattle as well as dairy cattle and under the area program they are being tested along with the dairy herds.

Artificial insemination is being used but sparingly in beef cattle. However, there has been a definite increase in its use during the last 3 or 4 years. It is distinctly possible that a greater increase will occur in the next few years.

Reproductive difficulties are responsible for a great deal of financial loss to beef cattle breeders. However, the genital disease problems are more severe among the beef breeders due to the fact that artificial insemination is not as widely used. It will be necessary to emphasize the routine testing procedures that should be applied to bulls prior to their use for breeding purposes so that the possibility of introducing these diseases on to a farm can be kept at a minimum.

Parasites in beef cattle of all ages and in dairy calves are getting more attention now than ever before. Intensive farming with increased concentration of cattle has increased the incidence of parasite infestation.

The use of phenothiazine in cattle has become more widespread and is effective when used properly and in conjunction with recommended

management procedures. As in most control programs the adoption of the therapeutic agent has been far more rapid than the utilization of these management procedures. A combination of treatment and management is essential if this problem is to be solved.

In both beef and dairy cattle there will be many problems that occur that cannot be foreseen. These will have to be met as they occur and treated in the manner that seems best for the situation.

Sheep

The number of sheep in Virginia decreased from 319282 to 229202, between 1940 and 1950. Between 1950 and 1955, however, the number rose from 229202 to 248642. The value of sheep and lambs sold has risen from \$1,900,901.00 in 1940 to \$4,109,815.00 in 1955.

The fact that sheep can be profitable is becoming more widely known and accepted. It appears that the increase in numbers that has occurred during the last few years can be expected to continue. This is a desirable situation and is being encouraged by the animal husbandry department.

The major problems confronting the sheep man in Virginia is the fact that concentration of these animals often leads to severe problems with parasites and diseases. Intestinal parasites foot-rot, enterotoxemia, pregnancy disease, white muscle disease and tetanus due to castration and docking have all presented themselves this year.

The major problems, however, seem to be parasites and foot rot. Treatment plus good management methods can reduce the incidence of both these conditions. It is necessary that control methods be adopted by the sheep industry if the net profit from this operation is to be raised to its expected level. Only when these methods are more widely used will sheep production contribute its full share to the agricultural income of the state.

Hogs

The number of hogs in Virginia increased from 477,687,00 in 1940 to 681563 in 1950. Between 1950 and 1955 this number decreased to 59045. However, there has been a steady increase in the value of the animals sold from \$5,416,595.00 in 1940 to \$18,068,923.00 in 1955.

Until recently swine were kept on Virginia farms more as a means of supplementary income rather than as the main operation furnishing the biggest share of the financial return. There is evidence that this situation is changing and that an increased number of farms are becoming swine enterprises primarily. A coordinated effort is being made to approach this phase of agriculture as other livestock enterprises have been approached in the past and an industry seems to be emerging. The adoption of a swine health certification plan and its ready acceptance by a great number of hog producers is a good indication

that the industry is progressing toward maturity. The preference of the hog buyers for the meat type hog and their practice of paying a premium for it is focusing attention upon the advantages of a planned breeding program. Those all are adding impetus to the progress being made in swine raising in Virginia.

As this progress is made the value of the swine and swine products will increase while the numbers may or may not increase. As their value increases the necessity for controlling the diseases and parasites will become more apparent to the producers.

In this class of livestock as in the others success in the control of diseases and parasites will depend primarily upon the application of known management procedures. This is emphasized by the fact that hog cholera continues to account for more deaths in swine than any other disease even though effective vaccination procedures have been available for a long time. This disease can be reduced to insignificance if proper vaccination procedures selected by the veterinarian for the particular situation existing on the farm become routine.

Swine erysipelas is another major problem that will have to be dealt with. Present methods of control are not as effective as we would like to have them. The best control procedure for this as well as Atrophic Rhinitis and many more is not introducing them on to the farm through the addition of swine to the herd. Isolation of all purchases prior to adding them to the herd for a period that will allow the

veterinarian the opportunity for observation and examination is desirable.

Parasites are an economic factor in swine as in other species. Management procedures, cleanliness, sanitation, etc., that must accompany treatment to successfully combat parasites are not being utilized sufficiently.

Baby pig diseases such as scours, pig anemia, hypoglycemia, etc., that account for a large percentage of the pigs farrowed not reaching market age will have to be reduced.

Brucellosis in swine will have to be dealt with before that disease will be able to be brought under control in Virginia. As yet this phase of brucellosis control has not been given the attention it requires.

Vesicular exanthema has not been reported in Virginia in over 2 years.

Other diseases such as gut-edema, necrotic enteritis, leptospirosis, etc., appear sporadically. If the incidence rises and they gain in importance an educational program relative to the condition will be justified.

In all phases of an agricultural extension program factors that cannot be anticipated occur and create situations that must be dealt with in a manner that will fit the conditions that result. The veterinary extension program finds itself in this situation as frequently and possibly more frequently than other phases of the extension program.

The occurrence of emergency situations in Veterinary Medicine has become accepted as a routine part of the work. The specific conditions or the number of such emergencies cannot be anticipated. Some times will, of necessity, be devoted to investigating such situations when presented by veterinarians and county agents.

The utilization of the veterinarian by the livestock producer in a prevention and control program as well as in the treatment of animals that are sick is of prime importance. The traditional use of the veterinarian to treat animals and in many cases as a last resort has established a precedent that is not in the best interests of the livestock industry. The livestock producer must be educated to the fact that dollars spent for veterinary service in prevention and control programs will yield as great a return as those spent in the treatment of those diseases and parasites. The veterinary profession must be urged to maintain and if possible accelerate the present trend toward greater utilization of preventive measures in animal diseases.

Certain events during the past year have directed the attention of all segments of the American public to the problem accompanying the use or more properly the misuse of drugs in the production of livestock and livestock products. The removal of cranberries from the market due to the contamination of some of them with amobarbitalsol received a great deal of attention in the public press. Antibiotic

and pesticide residues in milk as well as diethylstilbestrol residues in poultry were also given a great deal of publicity.

For several years a well organized advertising campaign has been used by some commercial interests to increase drug sales by encouraging the use of drugs, chemicals and hormones as feed additives. It has been claimed that the use of these preparations will increase weight gains and feed efficiency resulting in greater profits. Some advertising has indicated that this practice also controls diseases.

Basic knowledge relative to the mode of action, side affects, long range effects and even effectiveness in stimulating weight gains with respect to many of these preparations is lacking. This absence of specific information is dangerous in that the possibility of detrimental affects upon those using animal products containing residues can not be definitely ruled out. There are indications that the use of these materials may be dangerous to the public health in some cases.

It is definitely known that these preparations will not accomplish the control of diseases of livestock as has been and still is proposed by the commercial interests. They may assist in some cases.

The basic problem resulting from indiscriminate use of potent drugs can not be discussed here. It is apparent that this practice has added to the financial burden of the livestock industry by increasing the losses due to diseases. This has occurred through:

1. Delay in diagnosis by depending on "do-it-yourself treatment"
2. Reducing the effectiveness of many drugs by increasing the number of resistant strains of organisms through exposure to the drugs.
3. Allowing communicable diseases to spread through the herd because of failure to secure professional help early.
4. Other ill effects that could be described. The above will indicate the trend.

This approach to disease must be altered before the producer compounds his difficulties with both the disease problem and The Food and Drug Administration. An educational program to acquaint him with the necessity for proper use of drugs which can result in maximum efficiency with a minimum of danger is a pressing need at the moment.

The naming of specific diseases that may occur is completely beyond the scope of this paper. Those mentioned in earlier paragraphs are those that seem to occur year after year and are most significant. Others do occur but their incidence is not as high nor are the losses due to their appearance as considerable. In most cases good management practices, proper feeding practices, good breeding and a good preventative program designed to fit the individual farm can reduce the incidence of many if not all of them. It is in this area that a combined effort of all segments of extension concerned with livestock production can accomplish the greatest good for the industry.

Major ProblemsBrucellosis

1. Apathy of livestock producers resulting in,
 - a. delay in achieving modified certified brucellosis free status in Virginia
 - b. failure to vaccinate all heifers being retained as herd replacements
2. Failure to give ample consideration to species other than cattle as sources of the infection.

Mastitis

1. Emphasis upon treatment as the approach to the control of mastitis.
2. Lack of appreciation of the necessity and importance of good management and proper milking methods in mastitis control.
3. Difficulty of reaching those people who are milking and handling the animals in the barn and who are the key to good management and proper milking procedures.

Reproductive Disorders and Artificial Insemination

1. Failure of livestock producers to utilize management practices that are known to increase breeding efficiency.
2. Failure to use the veterinarian in a routine sterility program that will minimize reproductive failures.
3. Failure of livestock producers to make the fullest use of artificial insemination for purposes of preventing the occurrence of genital diseases.

Miscellaneous

I General

- a. Failure to use known preventative measures where available.
- b. Failure to recognize the dangers of the

indiscriminate use of drugs.

- c. Relations of the various groups concerned with agriculture should be improved.

II Cattle

- a. Foot Rot
- b. Parasites
- c. Failure to use vaccination procedures routinely where advisable.
- d. Nutrition as it relates to disease is not too well appreciated by cattle raisers.
- e. Bloat

III Sheep

- a. Foot Rot
- b. Parasites
- c. Enterotoxemia
- d. Scabies
- e. Dangers of Improper Docking and Castrating
- f. Failure to use measures known to assist in disease prevention.

IV Swine

- a. Parasites
- b. Failure to use vaccination procedures against Hog Cholera.
- c. Swine Erysipelas - 1
- d. Leptospirosis
- e. Necessity for careful attention to preventative measures in all swine raising operations but particularly in the concentrated swine operations that are becoming more prevalent each year.

Work To Be Done And Methods of Procedure

Brucellosis

The objectives of this phase of work are to assist the livestock disease regulatory agencies:

1. To make Virginia a modified certified brucellosis free state in as short a time as possible.
2. To have 80% of the counties in Virginia either modified certified brucellosis free areas or under area test by the end of the year.
3. To achieve the ultimate goal of vaccinating 100% of the animals to be retained as replacements against brucellosis.
4. To accomplish the vaccination of an estimated 75% of the animals retained as replacements this year.

The tendency to consider the job accomplished as the goal of a modified certified brucellosis free state comes closer and relax the intensive effort now being made must be guarded against. It will be necessary to maintain our present level of effort of we are to control Brucellosis.

The calfhood vaccination phase of the program made the biggest advance of all phases of the program during the past year. It is necessary to maintain emphasis upon this phase of the program to eliminate the possibility of a reversion to previous years when it lagged behind other phases of the program. The ultimate goal is still the vaccination of 100% of the heifers being retained as herd replacements.

The procedure used will be the same as last year when parts of many livestock meetings were devoted to the program. The materials

already prepared and available appear to be adequate for the purpose. These are the leaflet "Wipe Out Brucellosis", The U.S.D.A. films "The Triple Threat" and "Battling Brucellosis" as well as a set of lantern slides.

Subject Matter To Be Emphasized

I Basic Facts Known About The Disease

II Effect on

- a. animal population
- b. human population

III Present control programs

- a. Area control program
 - 1. Responsibilities of Regulatory Agencies
 - 2. Responsibilities of the practicing veterinarian
 - 3. Responsibilities of the livestock owner
- b. Other Federal - State programs available
- c. Necessity for calfhood vaccination

COOPERATION PLANNED

Agency	Assistance to be Given	Assistance to be Received
1. Virginia Department of Agriculture Division of Animal Industries	Emphasize programs, methods etc., available from this department for control of this disease. Aid in extending this program to as many herds and cattle as possible. Emphasize calfhood vaccination and its importance. Cooperate in putting out information as requested.	Information regarding present status of the official eradication program for each county as well as the state. Expect to be kept informed of any changes in the official programs or their regulations.
2. V.P.I. Dairy Extension Division	Assist in dairy schools and other meetings conducted by the Dairy Department, by presenting discussion on brucellosis. Providing them with information on official testing and eradication progress, or changes in regulations. Preparing written material for distribution by the department on the subject of brucellosis.	Assistance in organizing an educational program relative to eradication and control of brucellosis in dairy cattle. Aid in extending the official control programs to cover as many herds and cattle as possible, and getting as many calves officially vaccinated as possible.
3. V.F.I. Animal Husbandry Extension Division	Assist in livestock meetings conducted by this department by discussing brucellosis, its control and eradication in beef cattle and swine. Keeping them informed of the status of official testing and eradication program or changes in regulations. Preparing written material for use and distribution by the department on the subject of brucellosis.	Assistance in organizing an educational program relative to eradication and control of brucellosis in beef cattle and swine. Aid in extending the official control programs to cover as many beef Cattle herds as possible and getting as many calves officially vaccinated as possible. Aid in making swine raisers conscious of the problem of brucellosis in swine and what can be done with it as far as present knowledge will permit.

COOPERATION PLANNED
(continued)

Agency	Assistance to be Given	Assistance to be Received
4. Virginia State Dept. of Health and local Health Departments	Emphasize the public health aspect of the disease. Publicize public health regulations as they occur, that affect livestock producers, so that ignorance or misinterpretation will not cause confusion.	Expect to receive immediate information as to any regulations adopted anywhere in the state that livestock men must conform to before being able to market their products. Information regarding the incidence of brucellosis in the human population and any developments regarding its control.
5. Extension agents	Any aid requested to promote the eradication and control programs as well as the calf-hood vaccination programs. New developments in control or eradication measures as they appear will be sent to them and interpreted and explained where necessary. Material for T.V., radio newspapers, etc., will be sent as requested, personal appearances will be made to give talks on the subject as requested and time permits. Leaflet on brucellosis for general distribution will be provided.	Expect to be kept informed of the status of the program in their counties. Information as to their needs in the field of materials to increase the effectiveness of the educational campaign should be received periodically.
6. Virginia Veterinary Medical Association	Help plan and organize a systematic program of eradication in each area. Aid in the educational program to promote the eradication program. Coordinate efforts of this association with other groups in the program. Keep them informed of latest research results concerning all phases of the diseases and its control.	Cooperation in carrying out the intensified program as it may be organized. Help in the educational program needed if the program is to be successful.

Mastitis

The long range objectives of this program will remain the same for a long time. These are

1. To reduce the annual economic losses resulting from Mastitis.
2. To improve the quality of the dairy products produced by Virginia dairymen.

The immediate objectives are:

1. To make dairymen aware of the extent of the losses due to Mastitis.
2. To inform dairymen that something can be done about reducing these losses.
3. To teach the methods of prevention and control of the disease and encourage dairymen to utilize them.
4. To make dairymen aware of the importance of an accurate and complete diagnosis and the necessity for treatment to be selected on the basis of such a diagnosis.
5. To impress dairymen with the gravity of the indiscriminate and improper use of drugs in treating mastitis and the effect of such use upon the public health.
6. To make dairymen aware of their legal liability as well as their moral responsibility in the antibiotic and pesticide residue in milk problem.

The preparation of a quantity of material during the past year and the organization of the state wide mastitis program has proceeded faster than anticipated. A series of 12 leaflets to be issued once a month and distributed through the county extension offices has been prepared in cooperation with members of the dairy extension section. A set of slides

with an accompanying script has been made available to county offices for use by professional agricultural workers. A wall chart containing recommended management and milking procedures designed to be placed in milking barns has been prepared and is in the process of being printed.

The major portion of the work at the state level has been completed. It will require constant attention from now on to see that the program is coordinated and making progress. The bulk of the remaining work to be done is at the county level. Further material will be prepared as the need arises.

A major portion of the work in this phase of the program will be in assisting county personnel in adapting the suggested county mastitis program to the area involved. Participation in barn demonstrations, meetings and setting up demonstration herds will be done at the request of the county agent.

News articles, radio programs, feature articles, etc., will be prepared as requested.

This program is an excellent example of the necessity for making a cooperative and unified approach to a problem involving all groups directly or indirectly concerned with the problem and extending over a long period of time.

Subject Matter To Be Emphasized

I Preventive Measures

- a. Details of managed milking procedure.
- b. Details of good management practices.
- c. Necessity for cleanliness and sanitation in all phases of the dairy operation.

II The Phases of A Total Control Program

- a. Prevention
- b. Details of and necessity for a complete and accurate diagnosis.
- c. The necessity for the selection of a treatment based upon the diagnosis and the proper application of such treatment.

III The responsibilities of the following in a total control program.

- a. Herd owner.
- b. Man in charge of herd.
- c. Veterinarian
- d. Laboratory

IV Technical Information To Veterinarians

- a. Diagnosis
- b. Treatment

COOPERATION PLANNED

29

Agency	Assistance to be Given	Assistance to be Received
<p>1. Virginia Dept. of Agriculture</p>	<p>Aid in the program designed to encourage the production of clean sanitary mastitis free milk. Keep the department informed as to our activities in this project. Will furnish milk samples for laboratory culture. Will provide a leaflet on mastitis control for distribution through the milk inspection division.</p>	<p>The State Diagnostic Laboratories will continue to do the laboratory work on the milk samples. The monthly publication of this department will continue to carry articles on prevention and control of mastitis written by the Extension Veterinarian.</p>
<p>2. V.P.I. Dairy Extension Service</p>	<p>Keep them informed as to the latest developments in Mastitis control. Make available all the latest information on Mastitis. Participate on programs arranged by this group on a state, area or county level to discuss this problem.</p>	<p>Integrate this program with the overall dairy program and aid in carrying on the educational program in this phase through contact and other available media. Organize dairy meetings, dairy schools and other meetings to discuss this problem. Participate on the state mastitis committee and lend their support in carrying out all phases of the program.</p>
<p>3. Virginia State Dairymen's Association</p>	<p>Furnish the latest information on control of Mastitis and reduction of losses due to this disease. Participate in discussions organized by this group on the subject.</p>	<p>Organize an educational program among the membership so that available knowledge on Mastitis Control may be applied by them and thus losses due to this disease can be reduced. Emphasize prevention through the Disease Control Committee. Participate on the State Mastitis Committee. Sponsor the State Mastitis Control Program.</p>
<p>4. Virginia Veterinary Medical Association</p>	<p>Send out latest information on Mastitis therapy and prevention as it appears in the Veterinary literature. Furnish data collected in demonstration herds that we</p>	<p>Participation of members on program to discuss this problem when requested. Cooperation of individuals in the education of dairymen in methods of control. Participate on the State</p>

COOPERATION PLANNED
(continued)

30

Agency

Assistance to be Given

will be of use to the veterinarian in handling this problem. Discuss Mastitis at one State meeting of the Association.

Assistance to be Received

Mastitis control committee and aid in carrying out the program proposed by this committee. Endorse the state mastitis program.

5. Extension Agents

Participate on county wide meetings arranged by them to discuss this program. Furnish latest information on Mastitis control. Make information for local radio and T.V. programs as well as newspaper articles available on request. Train them at area wide meetings in managed milking methods and good management practices.

Aid in an educational program, designed to reduce losses due to this disease. Use of county radio, T.V., and newspaper to publicize control methods.

Active aid in carrying out the program proposed by the State Mastitis Control Committee. Assume leadership in the State Mastitis control program when applied at the county level.

6. Virginia Dairy Farmmen's Association

Keep the group informed of the progress of the program. Provide current information relative to Mastitis. Develop materials as requested.

Disseminate information relative to the disease to dairymen in their daily contacts. Assist county agent in organizing and developing county program. Publish information in house organs etc., as the opportunity arises.

7. Vocational Agricultural Education

Keep the group informed of the progress of the program. Provide current information relative to Mastitis. Develop materials as requested.

Teach milking methods and management procedures that aid in controlling mastitis. Assist county agent in organizing and developing county program.

8. Dairy Products Association

Keep the group informed of the progress of the program. Provide current information relative to Mastitis. Develop

Support the state program. Disseminate information to producers in their house organs, mailing lists, etc.

9. Breed Ass'n's Federation of D. H. I. A.'s Artificial Breeding Association

Keep these groups informed of the progress of the program. Provide current information relative to Mastitis use.

Disseminate information through their publications, meetings, etc. Emphasize mastitis control to their membership.

COOPERATION PLANNED
(continued)

Agency	Assistance to be Given	Assistance to be Received
10. Dairy Suppliers Milking Machine Manufacturers.	Keep these groups informed of the progress of the program. Provide current information relative to Mastitis. Develop materials	Disseminate information through their contacts with dairymen. Emphasize the necessity of keeping machinery in good order and sanitary.

Reproductive Disorders and Artificial Insemination

The objectives in this phase of work are necessarily the same for several years at a time. This is a long term project with the following objectives:

1. To improve breeding efficiency in both beef and dairy cattle.
2. To reduce the incidence of disease entities that interfere with conception.
3. To stimulate interest and make every effort to increase the number of herds using artificial insemination the number of cattle bred artificially.
4. To make certain that the semen used in the artificial insemination program originates from disease free bulls.
5. To provide capable technicians to carry on the artificial insemination program.

Subject Matter To Be Emphasized

I Reproductive Disorders

A. Livestock owners

1. Herd management practices for breeding efficiency
2. Basic information relative to the genital diseases and the methods of control and prevention.
3. The proper use of the veterinarian to minimize the incidence of infertility.

B. Veterinarians

1. Most recent developments in diagnosis, treatment and control of infertility.

II Artificial Insemination

A. Advantages of Artificial Insemination

1. In Disease Control
2. In extending use of desirable sires

B. Freedom from disease of sires used.

Farm visits to investigate herds with an infertility problem with county extension personnel and local veterinarians will constitute the bulk of the work in this phase of the program.

Information relative to the problems enumerated above will be disseminated through news articles and correspondence on request and as the need arises.

As in the past meetings of The Board of Directors, membership and technicians of The Virginia Artificial Breeding Association will be attended.

Two short courses to train technicians will be held.

The quarterly examination of the bulls in service at the bull center will be carried out as required by state regulation.

The health status of bulls purchased for service in artificial insemination will be determined prior to their use.

The problem of sterility has been discussed as part or all of the program of county breeding associations, young farmer's groups and other livestock groups. This will continue to be done upon request.

The need for material has been adequately filled in the past by the movie "Artificial Insemination" and a set of slides illustrating breeding difficulties. There is no indication at present that more material is needed.

COOPERATION PLANNED

Agency	Assistance to be Given	Assistance to be Received
Virginia Department of Agric. Animal Industries Division	Submit copies of all testing procedures performed on the bulls at the Virginia Artificial Breeding Association as well as the results of these tests to the proper authorities. Evaluates technicians as to whether they are qualified to receive the certificate of competency as required by law when requested. Inform the State Veterinarian of any breach of regulations.	Information pertaining to regulations governing bull health and technician certification as needed.
Dairy Science Extension Division	Hold discussions of this subject at meetings arranged by this group. Provide information for use in their extension program that will aid dairyman to keep reproductive disorders at a minimum and make the best use of the advantages offered by the Artificial Insemination program. Aid in the regular short courses held to train technicians. Help summarize and evaluate breeding, as well as determine changes in the overall extension program indicated by results of this evaluation if needed.	Organization of the educational program in this phase. Organization of meetings to keep technicians informed of latest developments in Artificial Insemination. Information as to areas in the state where low breeding efficiency indicates help is needed. Will be informed of problems as they arise in the state.
Animal Husbandry Extension Division	Discussions of Prevention and control of genital diseases as well as management practices for higher breeding efficiency at meetings arranged by this group Provide information on this subject for use in their extension program.	Information on problems as they arise in the state. Organization of an educational program so that cattle owners may be kept informed as to management practices for higher breeding efficiency and methods of prevention and control of the genital diseases.

COOPERATION PLANNED
(continued)

Agency	Assistance to be Given	Assistance to be Received
Virginia Veterinary Medical Association	Consultations with individual veterinarians on reproductive problems when requested. Keep membership informed of latest developments in research on this subject.	Cooperation in educating livestock owners in good management procedures and preventative measures by contact as well as appearances on programs. Information on problems that arise.
Extension Agents	Slides will be available upon request. Discussions at the county level will be held upon request. Farm visits will be made to help in a problem upon request. Work with the technician in the area when requested provide information for use in radio programs, news articles, etc., at the county level.	Cooperation in the educational program designed to inform livestock producers as to the management procedures necessary to obtain maximum conception rates and prevent genital diseases. Information as to problems that arise and needs for material and other help that can be given in their areas.

Miscellaneous

The necessity to make provisions for meeting emergencies that include disease and parasite problems as they arise makes it essential that a plan of work allow sufficient latitude for this to be done. It is this phase of work that provides the opportunity for this to be done.

The work done will of necessity be largely determined by the demands of the situation as they develop. The planned portions must, therefore, be broad in concept.

SheepI Objectives

- a. To reduce the incidence of all diseases through the adoption of a basic preventive program.
- b. Emphasize the prevention and control of foot rot and parasites.

II Subject Matter To Be Emphasized

- a. Methods for the control of Foot Rot.
- b. Methods for the control of parasites.
- c. Basic measures of a disease and parasite control program.
 1. Cleanliness and sanitation.
 2. Available vaccination procedures that should be used.
 3. External parasite control.
 5. Information to producers as the situation requires.

SwineI Objectives

- a. To reduce the incidence of all diseases and parasites of swine.
- b. Emphasize the prevention and control of:
 1. Hog Cholera
 2. Swine Erysipelas
 3. Parasites
 4. Leptospirosis

II Subject Matter To Be Emphasised

- a. Basic information relative to the prevention and control of diseases and parasites.
 1. Cleanliness and sanitation.
 2. Isolation of newly purchased animals.
 3. Isolation of sick animals.
 4. Necessity for the use of the veterinarian in a program of preventative medicine.
- b. Basic Information Relative To:
 1. Hog Cholera
 2. Swine Erysipelas
 3. Leptospirosis
- c. Methods of Prevention and Control Of:
 1. Hog Cholera
 2. Swine Erysipelas
 3. Leptospirosis

d. Methods of Parasite Control.

Beef CattleI Objectives

- a. To reduce the incidence of diseases and parasites of beef cattle.
- b. Emphasize the prevention and control of:
 1. Reproductive Diseases
 2. Parasites
 3. Leptospirosis

II Subject Matter To Be Emphasized

- a. Basic information relative to the prevention and control of diseases and parasites.
 1. Cleanliness and sanitation.
 2. Isolation of sick or newly purchased animals.
 3. Use of specific vaccination procedures where available.
- b. Methods of Parasite control.
- c. Basic information relative to Reproductive Diseases as well as methods of prevention and control.
- d. Basic information relative to Leptospirosis and information presently available as to prevention and control.
- e. Information as to shipping fever, bleat, etc., as the situation demands.

The material to be developed and methods used will depend upon the needs of the situation. In general the usual means of disseminating information such as radio, correspondence news articles, etc., will be utilized. Circular letters to county extension personnel will be used more frequently in situations where new conditions appear or other conditions indicate that such an approach is desirable. Material will be developed as requested. Farm visits will be made as deemed necessary.

Veterinary Association Activities

State Level

I Objectives:

- a. To foster better relations between the veterinary profession and other groups concerned with livestock.
- b. To emphasize the best use of the veterinarian in the livestock enterprise.
- c. To emphasize to the veterinary profession its responsibility in the livestock industry and public health.

II Work Planned

- a. Continue to attend both state and regional meetings.
- b. Continue to participate on programs in state and regional meetings.
- c. Continue to serve on committees as appointed.

- d. Keep the veterinarians informed of current and proposed programs concerning livestock diseases and parasites.
- e. Utilize the veterinarians individually and collectively in carrying out such programs.
- f. Promote joint efforts of veterinarians with other groups to solve problems that may arise as has been done with the pharmacists.

National level

I Objectives:

- a. To contribute to national and regional programs concerned with livestock diseases and parasites.
- b. To keep informed as to latest developments in the area of professional activities.

II Work Planned

- a. Continue to serve on committees as appointed.
 - 1. Serve as secretary of joint committee on Dairy Cattle Health of the American Veterinary Medical Association and the American Dairy Science Association.
 - 2. Serve on brucellosis and mastitis committees of A.V.M.A.
 - 3. Serve as adviser to Council on Veterinary Services of A.V.M.A.

COOPERATION PLANNED

Agency	Assistance to be Given	Assistance to be Received
Virginia Department of Agriculture, Division of Animal Industries	Aid in the educational program to acquaint the livestock industry with the regulatory activities as well as interpretation of regulations and methods of their enforcement as carried out by this department. Coordinate the activities of the Animal Husbandry, Dairy Science, Virginia Veterinary Medical Association, livestock organization and others in promoting livestock disease control programs as proposed by this department.	Information on new regulations and their interpretation as they are adopted. To be kept up to date on present status of the program of the department. Interpretation of regulations as they apply to specific problems encountered in the field.
V.F.I. Dairy Science Department	Work with the Dairy Department on problems presented. Furnish information on Dairy cattle disease and parasite control as requested. Participate in dairy schools and other meetings to discuss livestock disease and parasite problems as requested. Participate in Dairy Herdman's Short Course and other college activities as requested. Evaluate new treatments as they occur.	Will bring to our attention problems of a veterinary nature that may occur from time to time. Cooperation in making information available to the dairy industry that it may become necessary to publish from time to time. Refer correspondence concerning dairy cattle disease and parasites to us for reply as they are received. Supply information on management and feeding practices as we may require.
V.F.I. Animal Husbandry Department	Work with the Animal Husbandry Department on Livestock diseases problems as presented. Furnish information on livestock disease and parasite control as requested. Participate in meetings as organized by this department and discuss livestock disease and parasite control as requested. Participate in Animal Husbandry Short Course and other college activities as requested. Evaluate new treatments as they occur.	Will bring to our attention problem of a veterinary nature that may occur from time to time. Cooperation in making information available to the livestock industry that it may become necessary to publish from time to time. Refer correspondence concerning livestock diseases and parasites to us for reply as they are received. Supply information on management and feeding practices as we may require.

COOPERATION PLANNED
(continued)

42

Agency	Assistance to be Given	Assistance to be Received
V.P.I. Animal Pathology Department	Assist in the livestock disease research program by collecting needed samples, by presenting the problems. Found most pressing in the field for which research is needed, obtaining experimental animals and carrying the results to the field.	To receive latest research results in disease and parasites. Advice on setting up and carrying out an Extension Program in livestock disease and parasite control. Assistance in writing circulars and bulletins. Technical assistance in field problems. Will aid by making personal visits to farms where deemed necessary and participating in programs on radio, television and at meetings of livestock producers.
Virginia Veterinary Medical Association	Consultation on diagnosis treatment and control where requested. Carry out the public relations program as adopted by the association. Keep the membership informed as to the latest research results, etc., by means of circular letters. Coordination of efforts by this association with those of other organizations and groups interested in the promotion of the livestock industry.	Cooperation in all phases of the Extension Program in livestock disease and parasite control. Membership will participate in meetings, radio programs, T.V. programs, etc.
County Extension Agents	Respond to requests for information on problems as they arise that are not included in major phases of work. Make farm visits as necessary. Prepare visual aids, radio programs, T.V. programs, news articles for use at the county level as requested. Keep them informed as to the appearance in the state of any new disease entities that may appear.	Information on disease outbreaks that occur in the counties. Presentation of the problems for emphasis that are of the most consequence in their areas. Evaluation of the situation in the counties so that the time and effort spent by the Extension Veterinarian can be utilized on the most immediate problems. Aid in making the veterinary

COOPERATION PLANNED
(continued)

Agency	Assistance to be Given	Assistance to be Received
	<p>Keep them informed as to the latest developments in control measures that can be applied in any disease present in Virginia</p> <p>Keep them informed on regulatory activity that is of importance to the livestock men in their areas.</p> <p>Evaluation of information on disease problems that appear in the lay literature</p>	<p>Extension program part of the livestock extension program in each county.</p>

Results Expected and Methods of Measuring

The achievement of results and the measurement of progress in any branch of medicine is difficult at best. In some diseases such as tuberculosis and brucellosis it is possible to estimate progress. In many others it is not possible to measure results or lack of it.

The overall objective of reducing the incidence of diseases and parasites in our livestock population and thus reducing the financial loss sustained as a result of these diseases and parasites is a long term objective. Most disease control programs require years before visible results become apparent.

Brucellosis

Progress in the program to control brucellosis has been significant in the last year. Over 80 counties are either modified certified brucellosis free areas or are under test. It is hoped to include more counties in the area program during the next year and possibly all the counties within the next two years.

It is anticipated that the percentage of available calves vaccinated will rise from 72% to 80-85% during the coming year.

The percentage of animals positive to the test, has decreased to .8% of those tested. It is anticipated that a .1% decrease may occur during the coming year.

The reports issued by The Virginia Department of Agriculture contain the information necessary to evaluate results as well as measure them accurately.

Mastitis

Results on individual farms can be measured by conducting periodic surveys and comparing the incidence of infection as revealed by these surveys. It is apparent that such methods would require a huge complement of personnel if all dairy farms in Virginia were to receive individual attention. Since this is not possible measurements of results will have to be estimated from reports received from professional agricultural workers in the field.

It is estimated that a minimum of 5 million dollars per year is lost by Virginia dairymen as a result of Mastitis. If the results in the state follow the pattern observed in demonstration herds in the state, the organized educational program under the direction of The Virginia Mastitis Control Committee should result in a reduction of this loss to half of its present level.

This is a long term program and results are cumulative over the years.

Reproductive Disorders and Artificial Insemination

The results anticipated are to maintain conception rates at 68-72% in the artificial breeding program, to increase the number of cattle bred in the program by 10% and to assist in reducing the number of cattle that fail to breed due to poor management practices or infections of the genital tract.

The records of the artificial breeding associations indicate both the number of cattle bred and the breeding efficiency.

The level of efficiency of breeding and incidence of genital diseases in beef cattle and those herds not in the artificial breeding program are impossible to measure. The number of farm visits and requests for assistance with problems of reproduction may be a measure of progress in reducing the losses due to these conditions.

Miscellaneous

The emergencies which arise each year are varied and so can not be predicted. It is rather apparent that results or methods of measuring results in this phase of work can not be anticipated or devised.

A prime and important result to be expected in this phase of work is the continued good relations between the veterinary group and the pharmacy group as well as between the veterinary association and the veterinary science department at the college.

Close cooperation with the agencies listed in a previous section should lend emphasis to the programs being carried out as well as make it possible to recognize the problems that exist in the state relative to livestock diseases and parasites.

PROJECTED PROGRAM NEEDS

The need for intensifying some phases of the veterinary extension program becomes more apparent each year. In some areas it is a matter of meeting the demands of an already existing interest on the part of the livestock producer. In others it is necessary to create interest by making the livestock industry, or a certain segment of it, aware of the problem.

The fact that the immediate problems are greater in scope and number than the present personnel can adequately handle makes the organization of a program to increase interest in new problems a matter for the future rather than the present. Anything projected as a need in this phase of the extension program will have to wait until more personnel becomes available before anything can be done to supply that need.

The continued trends toward larger farms and a more concentrated livestock operation makes the need to prevent the introduction of animal diseases and parasites more pressing. Keeping the incidence of these conditions in the livestock population as low as possible is a necessity if Virginia livestock producers are to keep the cost of production low enough to remain in a favorable competitive position. The fact that the majority of disease and parasite problems encountered in the state are the result of failure to use available and recommended practices that would have reduced if not entirely eliminated the financial losses sustained, emphasizes the need for a program that will result in a more widespread adoption of such practices. While the present program includes

the teaching of preventative veterinary medicine, it should be a major effort in itself rather than part of the other major phases of the overall program. It should consist of three distinct parts.

One part should be directed to the livestock producer. This would utilize radio, T.V., newspapers, circular letters, leaflets, etc., to get information to the man in direct charge of the animal's relative to sanitation, cleanliness, hygiene, good feeding practices, isolation, proper and necessary use of the veterinarian, etc., that are his responsibility in a program of prevention.

Another part should emphasize the responsibilities of the veterinarian in such a program. Latest developments in preventative medicine should be sent to all members of the profession. Creating an attitude on the part of the veterinary profession as a whole so that it will assume the responsibility for the major share of such a program is a prime necessity.

The last part should be directed to the professional agricultural workers so that they may help disseminate the information and utilize their daily contacts with livestock producers to demonstrate and teach recommended practices as well as to create the necessary interest in such a program.

Sheep numbers are growing and they are becoming more significant in the overall livestock economy. Sheep husbandry is rather new in many areas of the state so that the need for education in this livestock enterprise is great. The nature, prevention and handling of common sheep diseases and parasites should be emphasized. Sporadic efforts

along this line have been made in areas from which requests for help in this area were received. It would be well to organize this as a state wide program and to prepare material for distribution through the county extension offices.

Recent developments in the swine industry such as the organization of swine committees and the beginning of a swine health certification program provide ample evidence that the interest and need to work with swine producers are present. Here again the effort has been sporadic in nature and confined to areas from which requests were received. Within the framework of the program proposed by the swine committee a short leaflet on swine diseases and parasites was prepared and is available. A program should be organized on a state wide basis to supplement the work of the committee. More written material for distribution through county extension offices should be prepared.

The work done with veterinarians and the veterinary associations both state and national should be increased. A good deal of time is spent on this project at present but an organized approach should be made including:

1. Evaluating of proposed programs, treatments, drugs, etc., within the field of veterinary medicine.
2. Intensified work with the veterinary-pharmacy committee to improve the relationship between the two groups. An excellent start has been made but more time should be

spent on it if the desired results are to be achieved.

3. Establishment of other Interprofessional committees. This would result in a better cooperative relationship and should include the organization of symposia on diseases of importance to allied professions as well as veterinarians.
4. Preparing and sending a publication to all veterinarians in the state at regular intervals. This would keep them informed of the latest developments in all phases of veterinary medicine and related fields.
5. The establishment of a joint veterinary-livestock producer committee that would aid in establishing better relations. It is hoped that this would result in closer cooperation between the 2 groups and thus would benefit the livestock industry.

There are many other things that could be done in this field but the above could serve as a starting point.

An organized program including material that could be utilized on radio, T.V., newspapers, etc., as well as distributed through county extension offices, designed to acquaint livestock producers and professional agricultural workers with the many diseases transmissible between animals and man is a pressing need. This problem has significance for the general population as well as the livestock producer.

The poultry industry constitutes a significant agricultural enterprise in the state yet the only extension work involving diseases of poultry being carried on is that which is done by members of the poultry pathology research and teaching staff. This is of necessity sporadic

and unorganized. The size and value of the poultry industry in Virginia warrants a well developed program in poultry diseases.

The civilian defense program in so far as it relates to the introduction of foreign or exotic diseases into the animal population has not been given proper emphasis. Information as to the possibilities, type of disease that may appear and primarily who to contact and when this contact should be made if one of these diseases is suspected should be prepared and distributed to all segments of the livestock industry.

The experiences of public health workers indicate that statistics including incidence, occurrence, mortality rates, etc., are a necessity if sound prevention, control and eradication programs are to be formulated. This is true whether they are to be applied to the entire nation, smaller areas or on individual farms. Such information is sadly lacking in the field of animal diseases. It would be justified to spend whatever time and effort is needed to get these statistics.

The utilization of research results is often delayed and in some cases applied incompletely or even misapplied because of the lack of opportunity to evaluate them under field conditions. It is within the province of extension to evaluate research results under the conditions in which it shall be used. The full time of a veterinarian could be used with extreme profit to the livestock industry as well as the veterinary profession in this type of work.

These are but a few of the most pressing of many problems that would justify increased time and effort. A mere beginning in any one of them can not be undertaken until the personnel becomes available.