

VIRGINIA AGRICULTURAL EXTENSION SERVICE

DAIRY SCIENCE PLAN OF WORK  
(Name of Project)

for

Calendar Year 1959

Major phases of project or subdivisions of project covered	Name of Worker*	Percentage of time devoted to entire project by each worker
Dairy Science	M. F. Ellmore	100%
	V. L. Baldwin	100%
	G. J. Nageotte	100%
	W. N. Patterson	100%
	W. S. Griffith	100%
	G. C. Graf	33-1/3%
Date submitted: <u>1-24-59</u>	. 195	Signed: <u>M. F. Ellmore</u> Project Leader
Date approved: <u>1/26/59</u>	. 195	Signed: <u>G. C. Graf</u> Head of Department
Date approved: <u>1/28/59</u>	. 195	Signed: <u>S. H. Doughty</u> State Director of Extension
Date approved: <u>MAR 31 1959</u>	. 195	Signed: <u>G. N. Johnson</u> Administrator, Federal Extension Work U.S.D.A.

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

A CHALLENGE TO THE VIRGINIA DAIRY INDUSTRY

To provide for the people of Virginia an adequate supply of wholesome milk and milk products at a price consistent with the price of food nutrients from other sources.

To provide for the people engaged in this industry the means to enjoy a standard of living equal to that enjoyed by other segments of the population and the opportunity of developing a way of life accordant with their individual desires.

To promote an atmosphere of good will and understanding among those within the industry and between the industry and the consuming public.

To provide encouragement and assistance to the youth of the state in the development of superior leadership and skills necessary for useful, prosperous and happy citizenship.

#### ORGANIZATION OF THE DAIRY EXTENSION PROGRAM

The organization of the Dairy Extension program and activities will be carried out in accordance with the project agreement, dated November 10, 1954, between Virginia Polytechnic Institute and the United States Department of Agriculture. That portion of the agreement dealing with the various administrative procedures is quoted below:

- (a) The director of Extension is responsible for organizing, staffing, financing, reporting and otherwise administering this project.
- (b) The work will be conducted with adults and young people through the organization and personnel of the Cooperative Extension Service, including supervisors, specialists and county extension agents.
- (c) The personnel employed under this project will be responsible to the project leader for field activities results and subject matter. The project leader will be administratively responsible to the Director of Extension (or to a member of the extension administrative or supervisory staff designated by the Director) for program, field activities and results, and to the Head of the Dairy Husbandry Department, for the subject matter used in this extension project. The final decision in the employment of personnel for this project rests with the Extension Director. It is incumbent upon the project leader (who is responsible administratively to the Extension Director) and the head of the subject matter department to collaborate and to mutually agree in the recommendation to the Extension Director of any prospective candidate for any dairy extension staff vacancy."

The successful execution of an extension plan of work in a specialized subject matter field depends upon full cooperation between all personnel within the subject matter department and between subject matter departments whose objectives and programs are associated, inter-related, or coincide in certain areas. It is, therefore, necessary and desirable, that a free flow and exchange of ideas prevail between Research, Resident teaching and Extension.

The Head of the Dairy Science Department, Dr. G. C. Graf, will coordinate the subject matter activities between these three fields, devoting 1/3 of his time in each of these fields. He shall foster an atmosphere of good will and a free exchange of ideas between all personnel, agencies and organizations.

In addition to the above, the Department Head will assist and counsel with the Project leader and with the dairy extension specialists in their various subject matter fields throughout the year.

Through these efforts, there will exist a knowledge and appreciation of the problems, needs and results in research, resident teaching and extension, which will be understood, shared and discussed by all personnel for their mutual benefit.

### THE DAIRY INDUSTRY SITUATION AND OUTLOOK

Virginia's dairy industry is in a good relative position at the beginning of 1959. There are, however, interacting forces at work which constantly challenge those engaged in the production, processing, and distribution of milk and its' products. Careful planning and good business management are essential if reasonable margins are to be maintained under these changing conditions. The complexity of these forces can be appreciated when the implications seen in the following trends are understood.

1. Virginia's potential dairy products consumers are increasing at the rate of about 2% per year. Consumption per person is below the national average. The expanded promotion to increase consumption has not yielded the expected results except in the case of cheese consumption, which has shown a significant increase. It may be that consumers are substituting the protein of cheese for the proteins of meats which were relatively high during the past year. It appears that the consumption of milk increases with rising income up to a point and then tends to level off. This may be partially responsible for the fact that per capita consumption did not increase during 1958. Consumer prices for milk and milk products have not increased as much as have the prices of other foods. Milk in all forms is a good buy. Even if the increase in per capita consumption is small, total consumption is expected to rise with the increase in population.
2. The price received by Virginia Grade A producers has held steady. Class I prices have increased slightly but the proportion of total production going into surplus channels has increased. This has resulted in a lower blend price for some individual producers. The cost of most input items has increased. This has resulted in a greater pressure between cost and returns. It puts an added premium on management.
3. The production of milk for manufacturing purposes continues to be a source of supplementary income on many farms. This milk represents about 25% of the total production. The total volume has remained fairly constant, but the % has decreased slightly due to the increase in the proportion of Grade A. New producers have been acquired rather slowly, because of relatively low margins. Changes in other types of agricultural production are making production of this class of milk more attractive. Expansion of new processing plants into the southeast may result in slightly higher producer prices during the next decade. Incentive payments to producers to encourage a more even year round production will strengthen this segment of the industry.
4. Total milk production is still greater than consumption although the stock pile of surplus dairy products is smaller than at the beginning of 1956. High beef prices have en-

couraged closer culling of dairy herds, in fact, numbers of milk cows declined more than in any year since 1946. In the years immediately preceding 1956, increased production per cow more than offset the decrease due to declining cow numbers. In 1956, however, the production per cow tended to level off. For the first time since 1953, total production failed to increase.

5. Dairy farms and plants are decreasing in number. Various reasons are evident; high overhead, old age, labor difficulties and inefficiency are examples. Inefficiency is probably responsible for most of the reduction in farm numbers. Dairymen generally do not recognize inefficiency as a reason for quitting the business. They either fail to or are unable to make adjustments and attempts to maintain "status-quo" actually results in regression.

6. The remaining dairy farms and plants are expanding. It appears that this is an attempt to spread high overhead and operating charges over more producing units. A large proportion of the increased cost of operation is due to the many technological changes which the dairy industry is experiencing. These are generally desirable from the standpoint of improved quality and/or from the effect on labor costs. On the other hand, these changes may have an adverse effect on net profit. The effect of changing technology on the individual operation may be evaluated only by careful analysis based on records of performance of that individual operation.

7. The average level of production of dairy cows in Virginia is too low for continued economic stability. This is not true of all herds in Virginia as evidenced by the top herds participating in the MIL program. Failure on the part of dairy-men to follow the basic recommended practices in feeding, breeding and herd management is the primary cause of low production. Dairyman generally recognize that each of these dairy husbandry phases is a limiting factor. If this were not so, average production per cow would not have increased over the years. Lack of knowledge and/or lack of a felt need for improvements are responsible for the fact that the rate of increase has not been faster.

8. The dairy industry is suffering from unfavorable public relations, not only between various segments of the industry, but also between the industry and the consuming public. MIL and its products have been much in the public eye. Dissension within the industry has been partly responsible. Poor communications between the industry and those who influence public thinking is a contributing factor. A lack of understanding, by the consuming public, of the complex marketing and distribution systems has contributed to adverse public opinion.

9. It is becoming increasingly difficult for young people to get into dairy production due to the high capital require-

ments. With the tendency toward fewer and larger herds there is less opportunity for new dairymen. This is true largely for Grade A production. There is ample opportunity for expansion in the production of manufacturing milk, particularly as it provides a source of supplemental farm income.

To an ever increasing extent rural youth are facing a future that will provide fewer opportunities for on the farm sources of income. There will be opportunities for well trained youth in related agricultural fields.

#### MAJOR DAIRY INDUSTRY PROBLEMS

1. Low consumption of milk and milk products by the people of Virginia.
2. Industry tardiness in making the orderly adjustments necessary for economic stability. This is further complicated by limited research results in most dairy fields.
3. Too few youth are being developed for positions of responsibility and leadership in a progressive and dynamic agriculture economy. (The dairy industry shares this problem and responsibility with all segments of agriculture)
4. Adverse publicity is generated by lack of information on and understanding of the industry by those who influence public thinking.

#### PROBLEMS WITHIN EXTENSION

In developing a specialist plan of work, it is necessary to recognize problems within extension which will affect the methods used by specialists in the execution of their plan of work. The major ones are listed below.

1. Rapid turnover of extension personnel.
2. Lack of dairy trained county workers.
3. Lack of information on specific needs of county workers in time to adequately incorporate these in the state plan.
4. Competition between subject matter departments for county extension time.
5. Competition for the time and participation of rural people.
6. Time and distance between headquarters and field.
7. Insufficient research results from the state level.
8. Inadequate communication methods and techniques.

## THE DAIRY EXTENSION PROGRAM AND 1959 PLAN OF WORK

### THE PROGRAM

Recognition of the broad objectives of the industry is a prerequisite to the design of an effective extension program. These broad objectives encompass many fields of activity. The dairy specialist staff must recognize those fields in which their specific skill may be most effectively utilized. Historically, the function of the specialist has been to reinforce the educational program of the county staff. This is still the primary function. The growth of state wide industry activities and organizations desiring extension assistance has, however, broadened the field of opportunity for the specialist staff.

The program must outline an organized approach to the solution of major problems revealed through a knowledge of the existing situation. It must be recognized that interacting forces, present in a dynamic technological age, have and will cause change. Evaluation of these eminent, economic, physical and social forces will materially affect the method of approach to the attendant problems. The program must be flexible to meet changing situations.

### THE 1959 PLAN OF WORK

The present dairy extension staff consists of five full time specialists. In addition, the Department Head spends 1/3 of his total time on extension activities. This plan of work attempts to recognize the specific problem areas which may benefit from the application of extension methods. Within these areas the most urgent problems have been selected for concentrated effort. At present this priority is determined by the specialist staff. Ideally, this should be determined on the basis of needs expressed through county program planning procedures. The degree to which all areas may be given consideration is limited by the size of the dairy extension staff and by the above mentioned limitations within the extension system.

## ACTIVITY AREAS

The activities of the dairy extension staff will be expanded in 6 major areas for the current year as follows:

### I Dairy Business Management

This area will be concerned largely with the economic principles which are essential to efficient dairy enterprise management.

### II Dairy Production Practices

This area will deal with information pertinent to the promotion, evaluation and adoption of improved practices in feeding, breeding and herd management.

### III Dairy Records - Procuring and Processing

This is largely a service area. It will be concerned with collecting dairy records and processing them as resource material for use through areas I and II.

### IV Dairy Technology

This area will be concerned with providing educational assistance on technical problems to processors of milk and dairy products.

### V Consumer Education

This area will be concerned with providing information to the consuming public on the importance of milk in the human diet; and to provide information which will lead to a better understanding by the public of industry problems.

### VI Youth Development

This area will be concerned with assisting rural youth in developing qualities necessary for good leadership and citizenship.

### VII Allied Activities

This area recognizes the responsibility and opportunity for extension to assist with non-specific agricultural programs which affect other segments of agriculture as well as dairy.

## AREA I DAIRY BUSINESS MANAGEMENT

Supervised by M. F. Ellmore, Extension Dairy Specialist

Allotment of time - M. F. Ellmore 35%  
V. L. Baldwin 5%  
G. C. Graf 20%

### The Purpose:

To prepare and disseminate information and subject matter which will lead to a better understanding of the economic principles of dairy enterprise management. An understanding of these principles is basic in the development, evaluation and application of possible alternatives. This is essential for continued efficiency in a changing economy.

### The Situation:

Dairy farming is big business. No other agricultural enterprise has a larger capital investment per worker. Increased production costs and shrinking margins have placed a premium on good business management.

Herd size and output per farm have increased. However, bigness in itself is no guarantee of adequate net return. Increases in total overhead, feed costs, labor costs and other costs are natural results of increased scope. Unwise choice in the selection of these input items can easily result in a decreased net return per unit of output.

Dairymen may find themselves in one of several different situations:

1. Adequate resources fully utilized.
2. Adequate resources but not fully developed.
3. Limited resources with additional resources available.
4. Limited resources but no chance for expansion.

There has been an increase in the amount of research in this field. The principles involved are known, however, simple and practical methods have not been developed to create in dairymen a felt need for learning and applying these. Scientific application of these principles is a prerequisite to sound decision making when changes or new opportunities are presented.

### Problems:

1. Shrinking margin of profit.

### Objective:

1. To assist the dairy industry in the development and use of simple and practical business management techniques.

### EXTENSION PLAN OF WORK

Need 1 For more dairymen to become aware of the importance of a scientific approach to business management.

Plan A Develop circular designed to stimulate an awareness of the need for an interest in the subject.

Plan B Prepare an article for the Extension Service News and 4 radio tapes stressing the need for evaluation, aimed at the awareness and interest stage of the audience.

Plan C Develop lecture that will attempt to stimulate interest by illustrating the principles involved in the evaluation of alternatives.

Plan D Forward to all agents, new material as they are developed. Make an effort to discuss the subject with agents at county visits and advise with them on techniques that may be used to stimulate interest among their dairymen in general and Farm and Home development families in particular.

Need 2 Simplified record forms designed for enterprise analysis.

Plan A Cooperate with the Agricultural Economics Department in a survey study for the purpose of developing suitable record forms, and for obtaining realistic information that may be used in illustrating principles.

### Related Activities

I - Heifer calf marketing and procurement program.

### The Situation and Problems:

1. Dairy production is increasing rapidly in Southwest Virginia.
2. There is a need for additional animals.
  - (a) The normal heifer crop will not provide needed numbers.
  - (b) A fairly large percent of existing foundation stock is of poor dairy breeding.
3. Producers of manufacturing milk cannot justify the purchase of high producing mature animals at the current high prices.
4. Producers of manufacturing milk could raise high quality heifers with a minimum of initial cash outlay. Ready cash is not available, feed and labor are available.
5. Dairy animals are being imported from outside of the area.
  - (a) A high proportion are being secured through dealers.
  - (b) The quality of these is open to question.
6. It would appear that there are surplus heifer calves of good quality in Northern Virginia being sacrificed to the slaughter pens.

### Objective:

1. To improve the quality of dairy cows in Southwest Virginia.

### Purpose:

Based on these observations and on observations of agents, fieldmen and others, it would appear that there is a need for a marketing program with two purposes.

1. Insure a supply of high quality replacement animals for Southwest Virginia.
2. Provide an outlet for surplus heifer calves, if there is a surplus of high quality calves, from Northern Virginia.

### EXTENSION PLAN OF WORK

During the year of 1959 activity will be of a preliminary nature.

1. Develop a program to submit to the industry.
2. Survey more completely the situation.
3. If conditions warrant, initiate a pilot program in one county during the fall of 1959.

## II - Dairy Industry Survey

### Plan of work:

Continue to cooperate with the Virginia Department of Agriculture in the survey of the dairy industry. During 1959, the Grade A survey analysis will be completed and results published. Work will be continued on the plant survey and the manufacturing milk production survey.

## AREA II DAIRY PRODUCTION PRACTICES

Supervised by V. L. Baldwin, Associate Extension Dairy Specialist

Allotment of time - V. L. Baldwin	80%
W. F. Ellmore	10%
W. S. Griffith	20%
W. H. Patterson	5%
G. J. Negette	5%
G. C. Graf	10%

### The Purpose:

To develop an educational program that will promote the adoption of improved practices in dairy cattle feeding, breeding and herd management that will lead to higher production per cow. The degree to which specific practices should be applied to the individual operation depends upon the economic justification for that practice in the enterprise.

### The Situation:

Virginia dairy farms are capable of producing all of the forage needed and a good deal of the grain. Unfortunately, the quantity and quality of the forage being produced is inadequate to feed the herds at levels recommended for greatest economy. Consequently, grain makes up a high proportion of the ration. Feed cost represents the greatest single item in the cost of production. There is much room for improvement.

Breeding offers the only method by which permanent improvement may be made in the dairy herds of Virginia. The development and expansion of artificial breeding has made superior inheritance available to the dairy cows in 85 Virginia counties. In 1958 an estimated 76,000 cattle were bred artificially. This represents about 19.8% of the 384,000 cows in the state. Many dairymen use well bred bulls of their own selection, however, there are still at least 150,000 cows in Virginia being bred to scrub bulls, or bulls of doubtful worth. Progressive improvement in the level of production through breeding requires that dairymen gain a greater knowledge of the transmitting ability of the; (1) sires being used; (2) prospective new sires and (3) brood cows in their herds. The development of long lived, high producing cows is an economic necessity for maximum efficiency.

Good husbandry is an art. It can be developed to a high degree through training and experience, provided these are based on native ability and a desire to learn. Much of the advantage of herd improvement through improved feeding and breeding may be lost if the details of good day by day husbandry are neglected. In many Virginia herds, these details are left to unskilled labor with the result that preventable diseases, avoidable injuries, irregular schedules and poor milking practices are resulting in low production.

Problems:

1. Low production per cow on many Virginia dairy farms.

Objective:

1. To assist the industry in raising the average level of production through an educational program in feeding, breeding and herd management.

EXTENSION PLAN OF WORK

First Section-Feeding

- Need 1 Higher intake of total feed nutrients by the Virginia dairy herd.

Plan A Use results of DHI's to demonstrate that adequate levels of feeding are a necessary prerequisite to high production. This summary information to be released through the usual communication channels as it is prepared.

- Need 2 Increase in the quantity and improvement in the quality of forage fed to Virginia dairy animals.

Plan A Solicit the assistance of the Agronomy and Agricultural Economics Departments in the promotion of economical forage production plans.

Plan B Solicit the assistance of the Agricultural Engineering and Agricultural Economics in promoting improved methods of harvesting, storing and feeding forage.

Plan C Provide to agents and others teaching materials on the principles of concentrate supplementation.

- Need 3 Larger heifers at two years of age.

Plan A Develop and present materials designed to pinpoint the advantages of adequate size for age of the dairy heifer.

Plan B Present to agents and others alternative methods for raising well grown heifer calves.

Second Section-Breeding

- Need 1 Higher level of inheritance for milk production in Virginia dairy herds.

Plan A Teach principles of selection within available A. I. Sires.

Plan B Provide sire proofs as needed through the facilities of U.S.D.A. and breed clubs.

Plan C Teach proper use of information from pedigrees, sire proofs

and evaluation studies, and type classification programs.

Plan D Teach advantages and principles of artificial breeding.

Plan E Assist in evaluation of breeding programs in individual herds.

Plan F Cooperate with artificial breeding organizations, such as Virginia Artificial Breeding Association, in preparation of information for sire book and in teaching technicians and leaders.

Plan G Offer 2 Artificial Insemination Short Courses during the year to train Artificial Insemination technicians and herdsmen.

Plan H Assemble materials for bulletin on "Breeding For Better Herd Replacements."

Plan I Prepare lecture outlines and visual aids.

Need 2 Increased longevity and beauty in Virginia dairy cattle.

Plan A Cooperate with breed clubs in their respective type classification programs and with Artificial Insemination breeding centers in using this information.

Plan B Teach selection for type characteristics which improve dairy cattle in relation to standards of beauty, utility, and longevity.

### Third Section-Dairy Herd Management

Herd management deals with the organization of dairy husbandry practices.

Need 1 A greater appreciation of the importance of good husbandry practices.

Plan A Develop and present materials designed to stimulate interest in good management practices. These materials shall emphasize the importance of good management as a necessity for high production.

Need 2 For more dairymen to keep and use dairy herd records as a herd management tool.

Plan A Offer program outlines to County Agents that are designed to teach the value of records in herd management.

Plan B Develop written materials on the kinds or types of records that would be most useful for management purposes. (such as breeding charts, health charts, etc.)

Need 3 A positive herd health program.

Plan A Cooperate with the extension veterinarian in the development of a program that will emphasize the basic principles of disease prevention.

Plan B Participate with the industry committee in the development and promotion of a state wide mastitis control program.

### AREA III PRODUCTION RECORDS-PROCUREMENT AND PROCESSING

Supervised by W. S. Griffith, Assistant Extension Dairy Specialist

Allotment of time - W. S. Griffith	70%
M. F. Ellmore	15%
G. J. Haggotte	10%
V. L. Baldwin	5%
G. C. Graf	5%

#### The Purpose:

The purposes of the Dairy Herd Improvement Program are to:

1. Maintain a uniform system of recordkeeping to guide the cooperating members in their herd improvement program and to supply reliable records to the Bureau and to the County Agricultural Extension Services for scientific studies, result demonstrations and other educational programs.
2. Establish sources of superior dairy inheritance as a means of improving the producing ability of all dairy cattle.
3. Maintain a high standard of integrity in the record keeping program that will give reliability to scientific studies and educational demonstrations, provide authentic information to dairymen who use these records as a basis for breeding, sire selection, feeding and management and to provide accurate factual information on production, feed costs, reproduction and other herd data.
4. To summarize, analyze and publish dairy herd improvement program results and make them available to all research, educational and extension agencies and cooperating dairymen and others.
5. To demonstrate the fundamentals of dairy herd improvement to the cooperating members and through the use of the results of this demonstration to teach all interested dairymen in Virginia the value of these practices.

#### The Situation:

The following table shows the extent of the production record-keeping program in Virginia as of December 1, 1958.

Type of Test	No. Herds	No. Cows	No. Counties
Standard DHIA*	1,109	55,380	92
Owner-Sampler	30	565	3
Weigh-A-Day	22	590	14
Official Test	72	3,607	--

\*Includes herds on both official test and DHIA.

These herds contain 14.7% of Virginia's dairy cattle population. They also represent 32.6% of the herds producing Grade A milk. The average cow in the DHIA program produced an average of 9,518 pounds of milk and 378 pounds of butterfat. In contrast, the average cow kept for dairy purposes produced approximately 5,570 pounds of milk and 226 pounds of butterfat.

A total of 32,890 lactation reports were received during 1958. This is 4,344 more than were received in 1957.

Annual herd summary cards were received from all but two associations. These associations were currently without supervisors. There were 945 annual herd summary cards received involving 46,614 cow-years.

Within the extension service there is a lack of a clear understanding of responsibilities regarding the national cooperative dairy herd improvement program.

Many DHIA supervisors receive inadequate compensation for their work. They are inclined to attempt to handle more cows and herds than they can properly supervise in an effort to improve their income. Expansion of the program is slow because of a lack of enthusiastic, capable, adequately paid supervisors.

The hiring of a fieldman by the Virginia Federation of Dairy Herd Improvement Associations, Incorporated, promises to improve field supervision of supervisors.

Three associations are without supervisors. They did not locate replacements to be trained.

Five supervisors have been trained to use the new DHIA-EDPM program. Fifty-four men have not received instruction in this procedure.

#### Problems:

1. Fully 85.3% of the dairy cows in Virginia are not enrolled in any of the extension sponsored production testing programs. Not all County Extension personnel are convinced of the desirability of promoting dairy recordkeeping.
2. Herd summary cards were not received from all of the herds that had completed a year's recordkeeping.
3. There is a lack of a clear understanding of responsibilities in the program within the extension service.
4. There is a lack of a clear understanding of responsibilities within some local DHIA Boards of Directors. (Agent's problem??)
5. Fifty-four supervisors do not know how to use the DHIA-EDPM program.
6. There is a lack of training materials and reference manuals for DHIA supervisors.

### Objectives:

1. Provide general supervision of the National Cooperative Dairy Herd Improvement Program in Virginia.
2. Distribute all record forms needed by County Agents and supervisors in carrying out the National Cooperative Dairy Herd Improvement Program.
3. Assemble and forward to the Dairy Husbandry Research Branch of the United States Agricultural Research Service records of all herds and cows enrolled in the program for use in proving sires and other analyses.
4. Summarize and analyze records received in the National Cooperative Dairy Herd Improvement Program to supplement and complement results received from the Dairy Husbandry Research Branch.
5. Make published results available to County Agricultural Agents, other extension workers and other interested parties.
6. Assist the County Agricultural Agents in the organization, development and supervision of the National Cooperative Dairy Herd Improvement Programs.
7. Training of Dairy Herd Improvement Association supervisors, County Agricultural Agents and other personnel working on the program.

### Extension Plan of Work

- Need 1 Increased awareness of responsibilities toward the program within the extension service.
- Plan A Publish quarterly letter to all county agents in charge of DHIA's issued in February, May, August and November.
- Plan B Consult with the district agents as frequently as conferences can be arranged to develop a better appreciation of the problems in the program and to seek their advice in developing solutions.
- Plan C Prepare a statement of responsibilities with special reference to county extension personnel for use by the district agents.
- Plan D Provide quarterly reports to the county agents on the number of lactation reports submitted by the supervisors.
- Plan E Cooperate fully with district agents in planning and conducting district schools for county extension personnel on the subject of dairy recordkeeping.
- Plan F To endeavor through letters, meetings and personal contacts to persuade county agents of the need for more production recordkeeping by their dairymen.

Need 2 A staff of high caliber, adequately trained and paid supervisors.

Plan A Conduct 3 training courses - March 16-April 4  
July 6-24  
October 5-23

Plan B Through the Federation Fieldmen provide on-the-job training for new supervisors.

Plan C Publish 11 monthly newsletters for supervisors and county agents to keep them informed of problems and progress within the program.

Plan D Hold 7 district dairy herd improvement conferences for county agents, supervisors and DHIA members during the first two weeks of September.

Plan E Conduct a tour to West Virginia to visit outstanding farms to study calf raising and dry cow management for at least supervisors and county agents.

Plan F Develop a comprehensive outline for the supervisors training course and to distribute copies to county agents.

Plan G To visit each new supervisor within 60 days after he goes on the job.

Need 3 Expanded use of DHIA-EDPM program.

Plan A To assist supervisors, county agents and the Federation Fieldmen in getting at least one herd on DHIA-EDPM in as many associations as possible.

Plan B To continue to cooperate with the extension dairymen of the southeast region in further development and refinement of the DHIA-EDPM program by (1) attending twice yearly conferences of this group to discuss and (2) assist in the preparation of a regional manual for supervisors and county agents regarding policies and procedures.

Plan C Prepare display for dairymen's convention promoting DHIA-EDPM.

Need 4 Expanded use of DHIA data now being received from cooperators.

Plan A More intensive study of annual summary data.

Plan B Preparation of outline for program summary for 1959.

Plan C Provide summaries and analyses of data to Virginia dairymen through county agricultural agents, mass media and meetings.

Need 5 Emergency assistance of technical nature to county agents.

Plan A Answer and act on all requests promptly.

Calendar - W. S. Griffith

<u>Month</u>	<u>Week</u>	<u>Major Activity</u>
December 1958	1	Preparation of DNIA Honor Roll
	8	Preparation of Annual Report
	15	Field Work Starting New DNIA-EDRW Herds
	22	DNIA Annual Summaries
	29	DNIA Annual Summaries
January 1959	5	Preparation of Plan of Work
	12	Dairy Herd Management Short Course
	19	Annual Dairy Conventions - Knoxville
	26	Annual Local DNIA Meetings
February	2	Southern Agriculture Workers Meeting - Memphis
	9	Annual Local DNIA Meetings
	16	Annual Local DNIA Meetings
	23	Annual Local DNIA Meetings
March	2	Annual Local DNIA Meetings
	9	Annual Local DNIA Meetings
	16	DNIA Supervisors Training Course
	23	DNIA Supervisors Training Course
	30	DNIA Supervisors Training Course
April	6	Field Work
	13	Annual Leave
	20	Annual Leave
	27	Complete Comprehensive Supervisor Training Course Outline
May	4	Analysis of DNIA Annual Reports
	11	Analysis of DNIA Annual Reports
	18	Field Work
	25	DNIA Supervisors Tour
June	1	Plan Annual DNIA Summary for 1959
	8	Plan Annual DNIA Summary for 1959
	15	American Dairy Science Meeting - Urbana
	22	
	29	Field Work
July	6	DNIA Supervisors Training Course
	13	DNIA Supervisors Training Course
	20	DNIA Supervisors Training Course
	27	Institute of Rural Affairs

Calendar - W. S. Griffith (continued)

<u>Month</u>	<u>Week</u>	<u>Major Activity</u>
August	3	Field Work
	10	Annual Leave
	17	Extension Conference
	24	Preparation for DHIA District Conferences
	31	DHIA District Conferences
September	7	DHIA District Conferences
	14	Compile Evaluations Conducted at District Conf's.
	21	Atlantic Rural Exposition
	28	Preparation for Supervisors Training Course
October	5	DHIA Supervisors Training Course
	12	DHIA Supervisors Training Course
	19	DHIA Supervisors Training Course
	26	Field Work
November	2	Field Work
	9	Annual Report
	16	Annual Report
	23	Annual Leave
	30	Annual DHIA Summary Work and Preparation of Honor Roll

## AREA IV DAIRY TECHNOLOGY

Supervised by G. J. Hageotte, Associate Extension Dairy Specialist

Allotment of time - G. J. Hageotte 50%  
M. F. Killmore 5%  
G. C. Graf 5%

### The Purpose:

The perishable nature of milk and milk products require that production, processing and distribution be carried out under rigidly controlled conditions. It is the purpose of this activity to provide educational assistance to the industry in this field, that the consuming public may be assured of adequate supplies of high quality milk and dairy products.

### The Situation:

Continuous changes due to technological advances in the fields of production, handling, storage, processing and distribution of milk and milk products characterize the situation. The numbers of dairy farms and processing plants are decreasing while their size is increasing. Milk storage time is increasing because of every-other-day farm pick-up and every-other-day delivery of milk to the consumer. The importance of good sanitation and quality control programs is increasing because of these changes. Industry personnel is finding it difficult to develop the new skills and knowledge necessary to keep pace with these trends.

### Problems:

1. Lack of facilities and adequately trained personnel in some dairy plants to carry out well planned quality control programs for milk procurement and product processing.
2. Too much milk, produced and processed in Virginia, fails to meet high standards of quality and flavor for acceptance by the consuming public.
3. Inefficiency in handling, processing and distribution of milk is resulting in low profit margins within the industry.

### EXTENSION PLAN OF WORK

Objective I - To cooperate with dairy plants in the establishment and/or operation of quality control laboratories.

Need 1 To establish in one additional plant a quality program based upon laboratory control with field supervision.

Plan A To survey plants having no quality control programs and to counsel with them for the adoption of sound quality control programs based upon laboratory control with field supervision.

Need 2 To continue the cooperation with dairy plants that have established laboratory control programs.

Plan A To counsel with at least 20 dairy plants on special or general laboratory methods and processing procedures.

Plan B To conduct a 4 day laboratory technician short course at V. P. I. to teach fundamental laboratory methods.

Objective II To encourage producers to maintain high standards of quality and flavor in milk produced in Virginia.

Need 1 To develop, among producers, a greater appreciation of the need for clean methods in the production of high quality milk.

Plan A To prepare 3 radio topics, 3 newspaper releases and 10 subject matter talks on subjects related to the production of high quality milk.

Plan B To assist county agents, in cooperation with the Extension Veterinarian, with mastitis control demonstrations.

Plan C To counsel with individual dairymen on quality problems upon request of county agents.

Plan D To cooperate with Virginia Dairy Fieldmen in the promotion of their quality production programs.

Need 2 To promote the adoption of methods for controlling milk off-flavors in Virginia produced milk.

Plan A To prepare 2 radio topics, 2 newspaper releases and 4 subject matter talks on the control of milk off-flavors.

Plan B To conduct, upon requests from county extension personnel, milk flavor clubs for groups of dairymen.

Objective III To promote greater efficiency in the handling, processing and distribution of milk.

Need 1 To develop well-planned dairy plant plans and equipment arrangements that will facilitate economies in milk and milk product processing.

Plan A To cooperate with the V. P. I. Department of Agricultural Engineering in the development of dairy plant plans upon request.

Plan B To counsel with and advise dairy plant personnel on selection, placement and operation of new equipment as the need or opportunity arises.

Need 2 To encourage the adoption of economical methods for handling processing and distributing milk and dairy products.

Plan A To promote, at every opportunity, the adoption of high-temperature-short-time pasteurization, in-place pipeline cleaning, bulk handling of milk, bulk dispensing of milk and the use of automatic milk and ice cream vendors.

Plan B To cooperate with the Virginia Dairy Products Association in organizing and conducting a Dairy Plant Manager's Conference on problems associated with economical operations of dairy plants.

Problems in the field of dairy technology that are recognized, but cannot be active parts of the program of work due to shortage of time and project personnel.

1. Unfelt need for the adoption of dairy plant waste disposal systems.
2. The trend towards the production of milk containing lower percentages of solids-not-fat.
3. Uneconomical, unjustified and out-of-date laws, rules, and regulations governing the production, processing and testing of milk and dairy products.
4. Low quality and poor handling of cream produced for buttermaking.

## AREA V CONSUMER EDUCATION

Supervised by G. J. Hageotte, Associate Extension Dairy Specialist

Allotment of time - G. J. Hageotte 25%  
M. F. Ellmore 5%  
G. C. Graf 5%

### The Purpose:

Milk is nature's most nearly perfect food. It supplies, in perfect balance, most of the food elements essential for good nutrition. Children need at least 1 quart of milk or its equivalent per day. Adults should consume the equivalent of at least 3 glasses daily. It is the purpose of this activity to promote adequate consumption of milk and dairy products in the interest of better health and well-being of the people of Virginia.

### The Situation:

Supplies of milk in Virginia are more than adequate to meet the needs at the present low fluid milk consumption rate of  $\frac{1}{2}$  pint per person per day. The average homemaker is not fully aware of the nutritional value and economy of milk and dairy products as sources of food nutrients; nor is she fully aware of all the ways these products may be used in the menu.

Past and current adverse publicity frequently distorts the true picture of facts surrounding the industry. Disharmony within the industry contributes to adverse public thinking.

### Problems:

1. Low consumption of milk and milk products by the people of Virginia.
2. Adverse publicity generated by lack of information on and understanding of the industry by those who influence public thinking.

## EXTENSION PLAN OF WORK

Objective I - To increase the per capita milk equivalent consumption rate of Virginia people toward recommended dietary standards.

Need 1 To create awareness by more people of the nutritional values of milk and dairy products.

Plan A Prepare 5 radio topics and 5 newspaper releases on subjects related to the nutritive qualities of milk and milk products.

Plan B Cooperate with other departments in preparation of an educational exhibit at the Atlantic Rural Exposition.

Plan C Support local Dairy Councils in their educational activities.

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Plan D Provide assistance to industry and civic organizations in the planning and execution of June Dairy Month promotional activities.

Need 2 To develop variety in consumer use of milk and dairy products.

Plan A Cooperate with the Virginia Dairy Products Association in the execution of a cottage cheese promotional program. Provide printed materials on recipes for using cottage cheese for distribution to consumers.

Plan B Prepare subject matter materials for Home Demonstration Clubs on uses for dairy products and methods for making and storing dairy products in the home.

Plan C Prepare and present demonstrations on making of dairy products in the home upon request from home demonstration agents.

Objective II Encourage better relations within the industry; and between the industry and the consuming public.

Need 1 Develop desirable public understanding of the problems of the dairy industry.

Plan A Prepare 3 informative radio tapes and 3 news releases on subjects designed to foster consumer understanding of industry problems.

Plan B To assist industry organizations in developing publicity and educational programs.

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## AREA VI YOUTH DEVELOPMENT

Supervised by W. H. Patterson, Associate Extension Dairy Specialist

Allotment of time - W. H. Patterson 75%  
M. F. Ellmore 10%  
G. C. Graf 5%

### The Purposes:

Rural Youth will become the future leaders of the Virginia Dairy Industry. The primary purpose of this activity is to provide opportunities for Rural Youth to develop those qualities of leadership, sportsmanship, character and personality that contribute to happy and prosperous citizenship. Additional purposes are:

1. The development of basic knowledge and skills in the selection, feeding, care and management of dairy animals.
2. To emphasize the nutritional importance of milk and dairy products as basic foods in the human diet.
3. To help youth understand the complex problems of the dairy industry.

### The Situation:

The number of opportunities in managerial, operational, and professional positions in the Dairy Industry are numerous. Too few dairy trained young people are available to fill the demand for replacements and new positions developed. Dairy farming has become such a high capital investment enterprise that few young people can hope to become established as owner-operator dairymen except through inheritance.

The enrollment of 1675 4-H Club members conducting dairy animal projects during 1958 is a decrease of 6.5% compared to the previous year. However, more completions were recorded with a state average of 69.9% of the enrollees satisfactorily completing the year's work with 1586 animal projects. Enrollment in the new introductory dairy project and Milk and Milk products projects is small.

Leadership in the conduct of youth activities at the local level is vested in volunteer local leaders and a limited number of professional Agricultural workers. The supervision of project work, teaching and demonstration of dairy practices, conduct of local fairs and shows and participation in district or state-wide youth activities is under the direction of these key leaders.

### Problems:

1. Insufficient numbers of dairy trained youth are available to fill important positions in Dairy Industry and associated service organizations.

2. Enrollment in organized youth training programs is small.
3. Local youth program leadership lacks technical dairy "know how".
4. Demands upon the time of youth made by the public schools, extension educational programs, churches, and recreational activities create many conflicts in the conduct of dairy programs for youth.
5. Financial support of local, district and state youth activities must be through solicitation and voluntary donation. Limited public funds or facilities are available for use by or awards for youth programs.

#### EXTENSION PLAN OF WORK

Objective I A sufficient number of inspired volunteer local leaders and professional agricultural workers to insure the conduct of a high quality Dairy Youth Program.

Need 1 Training programs and opportunities for local leaders, extension agents, and professional agricultural workers to increase their knowledge and skills in approved dairy practices.

Plan A Schedule planning meetings and conferences on an area or district basis to develop county subject matter and activity programs for 4-H Dairy Club work.

Plan B Prepare subject matter materials for insertion in the 4-H Dairy Project manual and record book.

Plan C Encourage leaders and agents to attend dairy meetings, judging schools and clinics, and other activities.

Plan D Present at least 4 timely radio programs and/or news releases on 4-H Dairy project work.

Need 2 More Junior leadership activity in the conduct of local and county Dairy Youth activities.

Plan A Encourage agents to use older club members in the conduct of the Dairy Youth activities.

Plan B Provide specific Junior leadership training during the state 4-H Club Short Course and in area or county meetings as requested.

Objective II Increase the number of Youth enrolled in Dairy projects.

Need 1 Make it easier for Club members to obtain high quality heifers for animal projects.

Plan A Advise with Breed Club Junior committees on their programs

for Youth enrolled in Dairy project work.

Plan B Encourage agents and leaders to solicit help from key dairymen, State Breed clubs and all available sources in locating animals for 4-H Club members.

Need 2 Provide opportunities for Youth to develop a better understanding of the Dairy Industry and its complex problems. Also to appreciate the nutritional value of milk and milk products as a food.

Plan A Encourage agents to increase enrollment in the "Introduction to Dairying" and "Milk and Milk Products" projects.

Plan B Prepare at least one radio tape program on the subject matter included in each of the above projects.

Objective III Maintain a series of competitive activities such as fairs and shows, judging contests, incentive contests, and similar events in which Youth enrolled in Dairy project work may participate.

Need 1 A system of high quality, uniform dairy shows.

Plan A Work with agents and leaders in planning shows that will permit club members to exhibit at local, district and the state show.

Plan B Conduct fitting and showmanship clinics for agents, leaders and club members.

Plan C Advise with agents, leaders, and fair officials on standard show procedures for dairy shows.

Need 2 Increased participation of well trained club members in competitive activities.

Plan A Conduct a series of area clinics to instruct club members, agents, and leaders in the fundamentals of dairy cattle judging.

Plan B Conduct Dairy Cattle Judging contests for each of the extension districts, the State Contest, and the Interstate Invitational contest at the Atlantic Rural Exposition.

Plan C Arrange special training for the members of the State 4-H Dairy Cattle Judging team selected to represent Virginia in regional and national contests.

Plan D Advise with club members, agents, and leaders on special incentive award and achievement recognition programs.

Objective IV Increase support of dairy and related industries who are or may actively support some phase of the rural youth dairy program.

Need 1 Liaison activities to keep dairy and related industries informed about youth dairy work.

Plan A Assist with Junior and Adult programs included in activities of state and national dairy breed clubs and other agricultural organizations.

Plan B Release notices of incentive awards, scholarships and other activities sponsored by agricultural and related organizations.

Plan C Cooperate with other departments in the conduct of activities relating directly or indirectly to rural youth work.

### AREA VII ALLIED ACTIVITIES

Supervised by M. F. Ellmore, Dairy Extension Specialist

Allotment of time -	M. F. Ellmore	20%
	W. M. Patterson	20%
	V. L. Baldwin	10%
	G. J. Hegotte	10%
	W. S. Griffith	10%
	G. C. Graf	50%

It is inevitable and desirable that the dairy staff participate in activities that are of concern not only to the dairy industry, but to all agriculture. There are activities of a miscellaneous nature that can not always be anticipated. It is the purpose of this section to recognize the major areas which will utilize extension time and talent.

- A. Headquarters activities: This time will be spent in administrative duties, program planning, special subject matter preparation, extension service activities, faculty and staff meetings, short courses, joint activities with other departments, giving assistance to V. F. I. students, and assisting with Dairy Science Department programs.
- B. Work with organizations: Many organizations call on the Dairy Extension staff for counsel and advice in the development and execution of their programs. A partial list of these organizations which will receive assistance follows:
1. Virginia Federation of DHIA's
  2. The Virginia State Dairymen's Association
  3. The Virginia Milk Producers Federation
  4. The Virginia Artificial Breeding Association
  5. The Virginia Dairy Council
  6. All the purebred cattle associations
  7. Atlantic Rural Exposition and
  8. The Virginia Dairy Fieldman's Association
- C. Out of State Activities: Some time will be spent out of state attending special conferences, participating in cooperative farm tours, assisting sire selection committees and accompanying 4-H Club dairy judging teams.
- D. Professional Improvement: It is desirable that all staff members attend as many professional improvement functions as time and financial assistance is available. Included in these are the American Dairy Science Association and Southern Agriculture Workers annual meetings.