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AGRICULTURAL ENGINEERING, - 1926.

Sub-Project V.

RURAL ELECTRIFICATION

OBJECT: To demonstrate the best methods of securing electricity on the farm, and the use of electricity in improving living conditions on the farm, and for performing various farm operations.

IMPORTANCE: Electric energy on the farm offers a means of reducing some of the farmer's labor and power costs. Electricity in the farm home will be a Godsend to the farm housewife and will be an important factor in improving living conditions on the farm.

PROCEDURE: Promote the project in the county by means of meetings, demonstrations, bulletins, newspaper articles, and other publicity means. The men and women agents should co-operate on this project.

The Agricultural Engineering Department Will:

(1) Furnish the agent with instructions on methods of handling this project; supply bulletins or data for distribution; furnish educational publicity material for use in the county papers.

(2) Send an engineer to the county to make a survey of the community and advise on the best methods of securing electrical service; Give an estimate of the cost; and advise on method of securing and maintaining the service; secure the co-operation of the electric power companies, if necessary.

The County Agent will:

(1) Promote the project in the county by distributing the publicity material, etc. furnished by the department.

(2) Select a group of farmers in a community who are interested in securing electricity on their farms, and arrange for the engineer to visit their farms. Arrange for meetings of the interested farmers.

(3) Obtain a record of the results gathered in the county due to the work on the project. Keep records over a series of years.

RESULTS: Results will be measured by the number of farms securing electric service; labor saving equipment and other conveniences installed; reduction of labor and power costs by the use of electricity, etc.

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AGRICULTURAL ENGINEERING

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Plan of Work, 1926

OBJECT: To make the farms of the State more productive, efficient and prosperous, and the farm homes more attractive and more fit places in which to live.

To offer technical information and assistance to any taxpayers of the State who are interested in the development and the increase in the efficient use of the agricultural resources of the State.

To promote a better understanding of the value of the science of engineering as applied to agriculture.

METHOD OF PROCEDURE.

The methods of teaching the subject matter under Agricultural Engineering are by:

A. Short Courses and Meetings, which are given when scheduled, and consist of illustrated lectures, moving pictures, laboratory work and talks at meetings.

B. Publicity and Propoganda, which is handled through correspondence, bulletins, circular letters, newspapers and farm journal articles, and exhibits at fairs.

C. Field Projects and Demonstrations, which consist of supplying technical information and service to individuals, communities, and organizations of the state.

Individuals, county or home demonstration agents, or community organizations make application to the department for the services of the specialists. The individual project is visited, in company with the county agent, surveys and other notes are made and a detailed report, plans and suggestions furnished. Demonstrations consist of visits and meetings at projects under construction and at finished projects, in order to instruct on methods and show results obtained. The specialist endeavors to instruct in such a way that those in attendance at the demonstration can carry out the practice recommended without further assistance. Many of the projects are self-advertising, such as improved farmsteads, farm home or other buildings, new operating equipment, water systems and other conveniences in the home and reclemation projects, such as drained fields terraced hillsides and cleared land.

The following listed sub-projects are to be emphasized during the year, 1926.

Sub-Project - 1 - Farm Drainage Demonstrations.
Sub-Project - 11 - Terracing Demonstrations.
Sub-Project - 111 - Land Clearing.
Sub-Project - 1V - Farm Water Supply and Sanitation.
Sub-Project - V - Farm Structures and Farmstead Planning
Sub-Project - V1 - Meetings.
Sub-Project - V11 - Short Courses

Outlines of these sub-projects are appended hereto.

PROJECT # 1, FARM DRAINAGE DEMONSTRATIONS

OBJECT: 1. To demonstrate the right methods of draining farm lands by the use of tile and open ditches.

2. To impress upon farmers the value of their marsh or other lands too wet to cultivate.

3. To guide land owners in the steps leading up to the organization of drainage districts for the drainage of large areas.

IMPORTANCE: Practically every farm has some cultivated land that could be greatly increased in productive value and made safe by drainage. Farmers loose thousands of dollars annually by working land improperly drained. Tile drainage increases the productive value of land at least $20.00 per acre.

2. Virginia has 1,038,000 acres of land unfit for cultivation without drainage improvements, and 1,446,000 acres in need of community drainage. In addition to the above, there are thousands of acres under cultivation that should be tile drained if economical production is to be secured.

PROCEDURE: Promote drainage through demonstrations, meetings, bulletins, circulars and other publicity methods.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Furnish County Agents with educational publicity material for use in their county papers; supply the agent with drainage circulars, bulletins and other material for distribution.

2. Send an engineer to the county to make a survey of the land to be drained. Furnish a map showing the proposed drainage system, prepare a report on the project, giving indtructions, amount of tile, estimate of cost, etc; stake out the system and demonstrate the proper methods of construction when the tile has been delivered.

3. In counties where there is sufficient interest in drainage, help organize a ditching machine company or secure a contractor with ditching machine to do ditching work in the county.

THE COUNTY AGENT WILL:

1. Promote the project in his county by distributing the publicity material, bulletins, etc, furnished by the Department.

2. Select reliable farmers in different sections of his county who have land in need of drainage and who agree to follow instructions.

3. Arrange for holding drainage demonstrations when the engineer makes the second trip to stake out the system and start the ditching work; advertise these demonstrations.

4. Obtain a record of the results gotten in his county due to the work of this project.

RESULTS: 1. Results will be measured by number of acres drained as a result of demonstrations; increased returns from the land after drainage, as compared with the return before the land was drained.

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PROJECT - 11 - TERRACING DEMONSTRATIONS.

OBJECT: 1. To demonstrate the method of preventing soil erosion by the use of the broad base, or magnum, terrace.

IMPORTANCE: Soil erosion occurs to some extent in every county of the state and in some counties it constitutes a very serious problem. Soil erosion results in a tremendous loss of fertility as well as the soil itself. If not checked in time, it will necessitate the ultimate abandonment of the land.

In twelve of the Southern Piedmont counties, erosion occurs extensively on about 10% of the farm land, or on 300,000 acres. The value of terracing improvements can be figured at from $5.00 to $50.00 per acre. Figuring conservatively at $10.00 per acre, the value of the project should be estimated at $3,000,000.00 in these twelve counties.

PROCEDURE: Promote terracing through demonstrations, meeting, bulletins and other publicity methods.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Furnish county agents with educational publicity material for use in their local papers; supply bulletins and other material on terracing for distribution; furnish agents with complete instructions on methods of handling projects.

2. Send an engineer to the county to assist the agent in making surveys for and laying off terracing systems; construct one model terrace on each farm laid off; instruct interested persons in the use of the level in laying off terraces; give talks at meetings.

THE COUNTY AGENT WILL:

1. Promote the project in his county by distributing the publicity material etc, furnished by the Department.

2. Select reliable farmers in different communities who have land in need of terracing, and who agree to follow instructions.

3. Make all the necessary arrangements for holding the terracing demonstrations, such as having terrace drags ready, advertise the demonstrations, arrange for at least three demonstrations, one each day.

4. Obtain a record of the results gotten in his county due to the work of this project.

RESULTS: Results will be measured by number of feet of terraces laid out and constructed; number of acres terraced; number of farmers attending demonstrations; spread of influence etc.

SUB- PROJECT - 111 - LAND CLEARING

OBJECT: To demonstrate the use of explosive in clearing land (Distribution of Government Explosive).

IMPORTANCE: There are, in the aggregate, great areas of good cut-over land in Virginia farms, lying idle, not growing farm crops, timber, or anything else of value. Practically every farm has fields in cultivation which contain stumps, rocks, etc. Such land cannot be worked efficiently. The clearing of this cut-over land and the removal of stumps, rocks, etc. on the cultivated land is an important factor in the Agricultural Economics of many farms, yet probably no feature of farm life is so little understood or so blindly pursued.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Send agents complete information as to the use of explosive in clearing land and the method of distributing the Government Explosive.

2. Send a specialist to the county to give demonstrations in blasting stumps.

3. Furnish order blanks for explosive.

4. Order this explosive from the government and arrange for the distribution of it at cost to the farmers.

THE COUNTY AGENTS WILL:

1. Arrange for and advertise the demonstrations through the papers and by posters, etc.

2. Advise the farmers as to cost, amount of material needed for clearing land, how to order.

RESULTS: Results will be measured by the number of stumps removed, acres cleared, value of land before and after, increased yield per acre, etc.

PROJECT - IV - FARM WATER SUPPLY SANITATION

OBJECT: 1. To demonstrate the most practical methods of securing running water and other conveniences in the farm home.

To improve the sanitary conditions around the home and thereby help the health of the whole family.

As the ultimate object of Extension work is to improve the farm home life, this project should be the most important in Extension work.

IMPORTANCE: According to the best figures available, only approximately 10,000 of the 182,242 farms in the State have running water in the home. The lack of water and other conveniences entail great hardships on the farm women. By installing inexpensive water and sewage disposal systems, the women can be relieved of a lot of drudgery and the health and happiness of the whole family improved. Good helath in fundamental to progress in all activities.

PROCEDURE: Promote the project in the county by means of meeting, demonstrations, bulletins, newspaper articles and other publicity means. As this project deals directly with the farm home, it should be handled by the home demonstration agent where one is available.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Furnish the agent with instructions on methods of handling this project ; supply bulletins, plans, etc. for distribution on water supply, sanitation and home conveniences; furnish educational publicity material for use in the county papers.

2. Send an engineer to the county to visit the farm homes and advise on the most practical water system, sewage disposal system of other home conveniences; give an estimate of the cost of installing such conveniences and advise where equipment can be secured, etc.

THE COUNTY HOME DEMONSTRATION AGENT WILL:

1. Promote the project in the county by distributing the publicity material, etc. furnished by the Department.

2. Select a number of farmers or farmers' wives who are interested in getting home conveniences; arrange for the engineer to visit these homes (Several visits can be made in one day)

3. Obtain a record of the results gotten in the county due to the work of the project.

RESULTS: Results will be measured by number of water systems, sewage disposal plants, conveniences, etc. installed in the county.

PROJECT - V - FARM STRUCTURES AND FARMSTEAD PLANNING

OBJECT: 1. To demonstrate the use and value of modern farm buildings.

2. To demonstrate the value of proper arrangement of buildings, fields, etc., so as to conserve labor.

IMPORTANCE: The farmers of the State have $268,000,000.00 invested in farm buildings, or more than the combined value of implements and livestock. Thousands of dollars are spent annually by farmers for new buildings. In most cases, these buildings are constructed without plans and the farmer often finds, after he has finished the building, that it is not what he wanted. By using a good plan, he can usually save money and get a building suitable to his needs.

PROCEDURE: Promote better buildings through the distribution of standard building plans, bulletins, etc.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Furnish the agent with educational publicity matter for use in local papers; supply bulletins on farm buildings, concrete constructions, etc.

2. Furnish the agent with blue prints, specifications and bills of material for any farm building needed by any of his farmers; prepare new plans when requests cannot be filled from plans on hand.

3. In cases of community buildings, such as packing houses, county fair buildings, etc. send an engineer to the county to lay off the grounds, buildings, etc.

4. Answer all requests for information on the farmers' building construction problems.

THE COUNTY AGENT WILL:

1. Promote the project in his county by distributing the publicity material, etc. furnished by the Department.

2. Select farmers who intend to build and send to the department for plans and other information relating to the proper construction of the structure in question.

3. Obtain a record of the results gotten in his county due to the work of this project; cost of structures and changes made in plans, if any.

RESULTS: Results will be measured by number of new buildings constructed, of buildings remodeled, value of new structures constructed, rearranged farmsteads, etc, and the spread of influence.

PROJECT - V1 - MEETINGS

OBJECT: To promote a better understanding of some of the more important agricultural engineering subjects.

PROCEDURE: Promote and spread information on certain subjects by means of meetings.

FOUR SUGGESTED SUBJECTS FOR MEETINGS

1. Water Supply and Sanitation: Methods of getting running water in the home. Types of water supply systems. A discussion of the selection, arrangement and cost of various fittings. Improving lighting and heating systems and other home conveniences. Lantern slides and moving picture films will be used when possible. From one to two hours will be required for this talk.

2. Concrete Construction on the Farm: A discussion of aggregates, quantities and proportions of materials; construction of forms; mixing and handling; principles of reinforced concrete; surfacing and water proofing and typical applications of concrete on the farm, where possible, this lecture will be illustrated with lantern slides. One to two hours required for this talk.

3. Land Reclamation: A general discussion, covering the general principles of practical farm drainage, terracing or land clearing as applicable to the community; benefits to be derived from drainage, terracing or land clearing; costs, construction etc. This talk will be illustrated with lantern slides and movie films whenever possible. Time required, one to two hours.

4. Farm Structures and Farmstead Arrangement: The need for better planned and arranged building on the farms; standard types of construction; materials; estimating; costs; laying out field and buildings so as to conserve labor. Lantern slides will be used when possible. One hour required for this lecture.

THE AGRICULTURAL ENGINEERING DEPARTMENT WILL:

1. Provide the lecturer.

2. Furnish all charts; lantern slides, etc. needed for the lecture.

THE COUNTY AGENT WILL:

1. Advertise the course and provide place of meeting.

2. Obtain a record of the number of farmers attending meetings.

RESULTS: Results will be measured by number of farmers attending lectures and number applying what they have learned.

PROJECT - VII - SHORT COURSES

OBJECT: To give instructions in the operation, care and overhauling of farm power and operating equipment.

IMPORTANCE: The farm power and operating equipment projects are best handled through short courses. The farmers of Virginia have over $50,000,000 invested in farm machinery. Thousands of dollars worth of new equipment is purchased annually, and there is need for still more use of labor-saving farm machinery. Thousands of dollars can be saved the farmers of the State by more intelligent care and operation of their equipment, which can best be learned at short courses.

PROCEDURE: Short courses (one to four days) will be given as scheduled and will consist of chalk talks and illustrated lectures, moving pictures and practical work on the following general subjects as desired by communities:

Single Cylinder Gas Engines:
Farm Tractors:
Automobiles and Trucks.

THE AGRICULTURAL ENGINEERING DEPARTMENT will:

1. Provide and instructor.
2. Send a complete set of teaching equipment, such as charts, sectional models, tools and all necessary supplies.
3. Send out mimeographed programs and, when desired, assist with the publicity.

THE COUNTY AGENT will:

1. Make arrangements for a well lighted, warm room for handling the course. (It is suggested that these courses be put on in cooperation with the Agricultural High School Instructors and the school shop be used).
2. Provide for demonstration a used engine, tractor, automobile or truck, according to the course given.
3. Advertise the course and sign up the required number of farmers.
4. Obtain a record of the results gotten in his county due to the short course.

RESULTS: Results will be measured by number of farmers attending the course: number applying what they have learned to the operation of their own equipment, etc.