

Resumé of Report (annual)

AGRICULTURAL ENGINEERING EXTENSION

1933

PREVENTION OF SOIL EROSION

More attention than ever before has been focused on the problem of soil erosion. The Federal Government has appropriated \$10,000,000 for soil erosion control work under Public Works. The Extension Division made an application for funds to conduct erosion control work in some 30 counties of the state and while this application was not approved funds will be allotted the state for a soil erosion control area demonstration consisting of around 200,000 acres. On this land all methods of erosion control will be practiced.

The agricultural engineer of the Extension Division conducted terracing demonstrations in ten counties where 515 acres were terraced and 234 farmers instructed in this method of erosion control. Two county terracing schools and a 4-H Club short course in terracing were also held. It is generally assumed that terracing increases the value of land an average of about \$8.00 an acre. The value of this service on the demonstration would, therefore, be about \$4120. The county agents report 7391 acres terraced on 1149 farms or \$59,128 increased value of land terraced.

FARM BUILDING PLANS

With cash resources on the farm less if anything in 1933 than in 1932 the demand for farm building plans continued to be heavy. 2412 plans were furnished upon request in 1933, as compared with 2641 in 1932, and 2570 in 1930. The new State Dairy Inspection law and new and more stringent regulations on the principal city markets partly accounted for the heavy demand for plans in 1932. Such was not the case in 1933 and the unusually large volume of construction could be credited only to abnormally low costs, both of material and labor.

An accurate estimate of the value of buildings erected from plans furnished is difficult, but even at present low costs the value would be at least \$1,000,000. A conservative estimate of the value of this service or savings to the farmer by using these plans would be 10% or \$100,000. The county agents report the savings or value of service on 536 buildings constructed as \$18,882.

With complete and detailed plans available, prepared in such a simple manner that the average farmer with a minimum of skilled labor can erect his own buildings, many have taken advantage of low costs on lumber and necessary building materials, or cut their own timber to provide such needed, up-to-date and convenient buildings.

In the case of poultry buildings, particularly, much emphasis has been placed on the utilization and remodeling of existing buildings. Old tobacco barns, of which there are so many no longer in active use, make, with little cost, excellent quarters for 200 laying hens, or satisfactory brooding space for 600 broilers. The use of the homemade brick brooder substitutes home grown fuel for expensive coal or oil. And unused portions of stock barns frequently make a very satisfactory place for a profitable farm flock. Plans and suggestions along these lines have proven most welcome.

While dairy and poultry requests continue to lead the list, there is a constantly growing interest in fruit and vegetable storage. Common or air cooled storage has made possible successful storage of off-grade and orchard run fruit, which through the rapidly developing truck trade has made the marketing of such fruit over the entire season as profitable as the high quality fruits placed in cold storage at greatly increased expense. Interest in small cold storage plants on the farm is also increasing.

The back-to-the farm movement and a trend toward subsistence farming while unemployment is so general, has resulted in much small house construction. To meet the demand for inexpensive homes which may later be added to until adequate, carefully planned homes of attractive design are obtained, the Extension Service is now giving much time and thought to the preparation of carefully worked out plans to replace present slipshod construction.

STATIONARY SPRAY PLANTS

The orchard man's chief concern today is the production of high quality fruit at the lowest possible cost. One of the most expensive and important parts of such a program is spraying. Results on a number of orchards in this state bear out the experience in other states, that very material savings result from the use of the stationary or central spray plant. As a rule, such plants have cost no more than portable equipment to adequately care for the same job, and the expense of teams or tractors to move portable equipment is saved. Application of spray materials is timely regardless of weather conditions, the job is usually more thorough, and labor requirements only one-half to one-third. The life of the plant is also much greater. Such advantages readily account for the rapidly growing interest in this method of spraying, and the many requests for help along these lines. The agricultural engineers have designed a number of stationary spray plants for orchards this year and there is a constantly growing demand for this service. Stationary spraying demonstrations are being conducted on about 12 orchards.

IRRIGATION

Irrigation is becoming more and more a subject of great interest in the state as evidenced by the growing demand for information on this subject. This is especially true of orchard irrigation. A number of orchard irrigation demonstrations have been under way now for several years. The results of irrigation in these orchards have been strikingly successful.

For example, a gravity irrigation system was installed in the High Peaks Orchard in Amherst County. At a cost of about \$116.00, 2000 feet of pipe lines were installed and water carried by gravity to water about 300 trees. The manager of this orchard writes as follows in regard to the results of irrigation:

"I can only say that the results to me were amazingly good, so marked as to be plainly seen even before one got close to the watered trees--not only the fruit but the whole tree showed it. The foliage was darker, larger and more vigorous and the fruit was on the average twice as large and as harvest time approached the color on the watered trees was remarkable--on saps deep red and practically solid even up into the blossom end long before fruit on unwatered trees had enough color to harvest.

"From our results I am convinced that any orchardist who has even a moderate supply of water could use it most profitably for irrigation, especially if the water can be run to a dry ridge such as we watered here.

"On the 300 trees watered I estimate there was at least an increase of 1 bbl. per tree and the quality was much improved. If we estimate this fruit (mostly Winesaps) to be worth 40¢ per bushel on the trees we will have an increased value from irrigation of \$360.00, which amount would show a handsome profit over the total cost of the system plus its operation."

RURAL ELECTRIFICATION

Demonstrations of all kinds of electrical uses of farm equipment have been conducted in cooperation with the agricultural engineers of two power companies. These eight agricultural engineers worked with 4377 farmers on all kinds of engineering problems. They were responsible for the construction of 89 miles of new rural lines during the year which made electric service available to 795 rural customers, most of whom were farmers.

In addition to the cooperation with power companies 27 surveys were made in 14 different counties by the extension agricultural engineers for farm water power development. Several of these projects which will develop electric power for the individual farm, are now being constructed.

FARM DEVELOPMENT PROJECT

The excellent results obtained from the farm development project on 17 farms in Central, Piedmont and Eastern Virginia, together with the interest in the Tennessee Valley project, led to the selection of eight additional farms for this project in the Tennessee Valley watershed of Virginia. Farms typical of farming practises in that section were selected and carefully mapped. Soil surveys on the individual farms are being made. A farm management survey of each farm to determine the strong and weak points of the business has been made and recommendations have been made by all interested specialists, treating the

farm as a single business project, and placing the individual projects in their proper place with relation to the farm business as a whole. The primary purpose of this project is to improve the farm income by strengthening those phases which result in profit and eliminating those resulting in a loss. The reduction of costs by more careful planning, and re-arrangement, the proper use of labor saving equipment, and prevention of costly erosion are other features of the project. Results from the farms already cooperating on this project justify us in believing it can be developed into a very popular and effective part of the Extension program. This project is being conducted in cooperation with the Bureau of Agricultural Engineering, U. S. D. A., the Department of Agricultural Economics and Agronomy Department of V. P. I.