

Virginia  
Agronomy Specialist  
W. G. Wycor  
Annual Report 1922

Index	Page
*6 a 6.4.....Plan.....	1
6 b 4.8.....Pairs.....	10 , 11
**8 a 3.3.....Seed Certification.....	1, 2, 3, 4
8 a 5.7.....Variety Tests.....	8
8 a 5.1.....Oats Certification.....	7
**8 a 8.3.....Wheat Certification.....	5, 6, 7
16 c 3.....Lime.....	8
Summary and Statistics.....	12, 13-14

ANNUAL REPORT - AGRONOMY DEPARTMENT *Va*

(Project No. 16)

Period July 1, 1921 - October 31, 1922.

W. G. Wycor, Agronomist.



Submitted to -

Jno. R. Hutchesson, Director

V. P. I. Extension Division, Blacksburg, Virginia.

November 1, 1922.

ANNUAL REPORT - AGRONOMY DEPARTMENT

Period July 1, 1921 - October 31, 1922.

Outline of Report

1. Introduction
2. Seed Certification Project
3. Lime Project
4. Variety Demonstration Project
5. Publications
6. State and County Fairs - State Corn and Grain Show
7. Statistical Summary

## I INTRODUCTION

The principal project undertaken by the Agronomy Department is Seed Certification. In addition to this undertaking plans were made to develop definite projects in Lime, Variety Demonstrations, Permanent Pasture Improvement, and Long Time Demonstrations of Systematic Methods of Soil Improvement. The Seed Certification work, however, gained so rapidly in popularity both with county agents and farmers that the demands on this project alone have required practically the entire time of the two men available for extension work in Agronomy. Some progress has been made, nevertheless, with the projects on Lime and Variety Demonstrations. Nothing has been done on the projects dealing with Permanent Pasture Improvement and Long Time Demonstrations of Systematic Methods of Soil Improvement other than to assemble as much information relating to the projects as possible. These projects will probably be started during the late fall of 1922.

## II SEED CERTIFICATION PROJECT

### (a) General

It is generally recognized that the most important factor in crop production that is within the control of the farmer is the quality of the seed he uses. With this fact in mind it is evident that the Agronomy Department can render no greater single service to the Agriculture of Virginia than to bring about the production and general use of high quality seed of adapted and superior varieties. In order to accomplish this object this Department in 1921 accomplished the organization of the Virginia Crop Improvement Association, which is a body of Virginia farmers cooperating with the

State College of Agriculture and Extension Division in the production of certified seed.

The Crop Improvement Association on June 30, 1933, had a membership of approximately 600 certified seed growers living in 90 counties. Some certified seed work is being done in every county where there is a county agent, and in practically all of the agricultural counties where there are no agents. On July 1st, 1931, The Association consisted of about 350 seed growers. Hence the number of growers has been increased by 350 or more than doubled during the fiscal year. The chief difficulty in this project has been to limit the number of growers of certified seed to the point where proper assistance and cooperation can be rendered. During the year more than 3000 applications for certified seed stock from farmers who wish to grow seed have been refused.

(b) Demonstrations in Certified Seed Production

The demonstrators in Certified seed production may be divided into four groups as follows:

1. Producers of certified wheat, oats, rye and barley
2. Producers of certified corn
3. Producers of certified soybeans and cowpeas
4. Producers of certified peanuts

Some of the producers of certified small grain were supplied with registered seed stock developed by the Virginia Experiment Station. Forty farmers were thus supplied with certified seed wheat and twenty-three with certified seed oats. A summary of the results of these demonstrations is given in a circular accompanying this report. Other demonstrators in the production of certified small grain made head selections of their own grain for the production of

certified seed in accordance with regulations made by this Department.

A large number of farmers have undertaken ear-to-row breeding work with corn in order to produce strains eligible for certification. No strain of corn can be certified except one produced from the ear remnants corresponding to a limited number of the highest yielding rows in an ear-to-row test. A great deal of interest has been aroused in corn breeding and many counties have six or more ear-to-row demonstrations.

Seventy farmers were supplied with certified seed stock of Silver King corn from the State Experiment Station during the spring of 1922. Most of the fields of this corn are very promising but no definite data showing yields, etc., has yet been compiled.

Certified strains of soybeans, and cowpeas were obtained in 1921 by hand-picking the seed planted to eliminate all-mixture. About 3000 bushels of certified seed was produced in this way, most of it being used for the production of certified seed in 1922. The total production of certified soybeans during the present year will probably amount to between 8,000 and 10,000 bushels.

The 1921 crop of certified soybeans sold readily at \$1.00 per bushel above the prevailing market price of common seed. It is expected that the 1922 crop will move at prices about \$.50 above the market. In addition to their increased yields from certified seed, the farmers who are growing certified soybeans received \$5,000.00 more for their crop than they would realize for ordinary seed.

Breeding work to establish certified strains of peanuts was started by a few farmers in the peanut growing section of the state and is being carried out in accordance with regulations made by

the Department, and supervised through the Crop Improvement Association.

The following table indicates the approximate number of demonstrations in certified seed production now in progress with each of the groups previously referred to:

Small grain	225
Corn	250
Soybeans	1
Coopess	125
Peanut	10
Total	610

(c) Method of Instruction

Complete and detailed instructions are furnished each of the 600 farmers who are growing certified seed through personal visits, by members of the Department, circular and personal letters, bulletins, newspaper articles and through the county agents, who are provided with all necessary information.

A rigid inspection system of all certified seed crops is conducted by the Association under the supervision of the Agronomy Department. This inspection system serves to train the growers and acquaint them with the high standards of purity and quality required, and at the same time prevents any seed of inferior quality or purity being sold as certified seed.

The crops are inspected in the field and the threshed grain is subject to a second or final inspection after which a seed list is published by the Crop Improvement Association giving a complete analysis of each grower's seed, number of bushels he has to sell and price per bushel.

COOPERATIVE EXTENSION WORK  
IN  
AGRICULTURE AND HOME ECONOMICS  
STATE OF VIRGINIA

Virginia Agricultural and  
Mechanical College and Polytechnic  
Institute and United States Department  
of Agriculture, Cooperating.

EXTENSION SERVICE

V. P. I. No. 131 WHEAT

Thousands of Virginia farmers are interested in the two new varieties of wheat developed by the Virginia Experiment Station. These varieties, V. P. I. No. 131 (bearded) and V. P. I. No. 112 (smooth) are pure lines each descended from a single strain of wheat. Before these varieties were distributed to farmers, the Experiment Station made exhaustive tests over a period of several years to determine whether or not they were superior in yielding ability and other characteristics to varieties commonly grown in Virginia. During a four year period V. P. I. No. 131 and V. P. I. No. 112 averaged in yield 21% more than the three higher yielding commercial varieties grown in the state.

These facts having justified the Experiment Station in distributing the new varieties to farmers, such a distribution was made in 1921 through the Virginia Crop Improvement Association, this organization first having certified or registered the seed in accordance with existing regulations. Forty members of the Association were furnished with two bushels each of certified seed stock of one of the varieties.

Field inspections were made of the wheat before harvest by members of the Agronomy Department or by agents of the Virginia Crop Improvement Association. In nearly all cases the V. P. I. No. 131 (or No. 112) was so much better than other varieties growing beside it that the difference was clearly evident. Reports on threshed yields have been received from a number of farmers who grew these wheats and the following facts are evidenced by these reports:

Average yield per acre of V. P. I. No. 131 on all farms reporting	26.8 bu.
Average yield per acre of other varieties of wheat on similar land on these farms	20.8 bu.
Average increase per acre in favor of V. P. I. No. 131	5.8 bu.
Lowest increase per acre of V. P. I. No. 131 over other varieties	2.5 bu.
Highest increase per acre of V. P. I. No. 131 over other varieties	12.0 bu.
Number of instances in which other varieties yielded more than V. P. I. No. 131	None
* (Note: One crop of V. P. I. No. 131 was a complete failure due to scab. Other wheat on this same farm also failed)	

The highest yield of V. P. I. No. 131 reported to date was made by Mr. F. L. East at Hutton in Amelia county. Mr. East made a yield of 40 bushels per acre from a seeding of one bushel per acre. He states that Lopp's Prolific wheat on similar land yielded 28 bushels per acre.

One of the best yields of V. P. I. No. 112 was made by Mr. W. F. Lewis at Runover in Hanover county. Mr. Lewis reports a yield of 27.8 bushels per acre from the V. P. I. No. 112, 24 bushels per acre from Lopp's Prolific and 18 bushels per acre from Storer. He states that the V. P. I. No. 112 and Lopp's Prolific were on equally good land and that the Storer was on better land than either of the other two.

No detailed report is given on the average yields of V. P. I. No. 112 because only a very limited quantity of seed was distributed last year. However, this variety appears to have yielded quite as well as V. P. I. No. 131.

The average yield of wheat in Virginia is about 13.6 bushels per acre. It will be observed that V. P. I. No. 131 on the farms from which reports have been received made more than twice this average. The yields made by this variety are especially remarkable in view of the fact that practically all seedings were at the rate of one bushel per acre whereas this wheat, for the best results, should be seeded at the usual rate of about 1 1/2 bushels per acre. In many instances the yield was reduced by the light seeding.

The Experiment Station has a limited quantity of certified seed of the two varieties which will be distributed to farmers for fall seeding in quantities not less than 1 bushel and not exceeding four bushels. This distribution will be made through the Virginia Crop Improvement Association, and the farmers who obtain seed must agree to grow certified seed in accordance with Association regulations.

Farmers who wish to obtain certified seed stock of these wheats should write or see their county agents. In counties where there is no agent, applications may be made direct to the Virginia Crop Improvement Association, Blacksburg. Only a small fraction of the demand can be supplied, and it will be necessary for many to wait until the present small supply of seed has been increased.

If the entire wheat crop in Virginia were seeded with V. P. I. No. 131 or V. P. I. No. 112 the wheat crop of the state would be increased approximately 4,000,000 bushels at no additional cost to the growers except that of harvesting. These pure and high yielding varieties of wheat serve to illustrate the importance of using quality seed and the superior value of such seed as compared with the commonly used.

#### V. P. I. NO. 1 OATS

A variety of oats, V. P. I. No. 1, was developed and tested by the Experiment Station in such the same way as V. P. I. No. 131 and V. P. I. No. 112 wheat. During a four year period this variety of oats averaged 4.5 bushels more to the acre than an average of the three best varieties generally grown in the state. Twenty-five farmers in the state who furnished with certified seed of this variety in 1921, had reports received to date from these seed growers indicate that V. P. I. No. 1 gave from 10% to 50% higher yields than common seed of other varieties. Some yields of more than 70 bushels per acre have been reported.

Certified seed of this variety will be distributed in quantities of from 6 to 30 bushels to farmers who wish to grow the crop for certified seed production. Applications for this seed should be addressed to the County Agents or if there is no county agent in the county area which the application is made, to the Virginia Crop Improvement Association, Blacksburg, Virginia.

III. LIME

Within recent years farmers have realized much more generally the value and importance of lime in Agriculture. In the limited time which the Agronomy Department could devote to this project an effort has been made to obtain and disseminate information as to where lime can be best and most cheaply obtained and to developing new and accessible sources of cheap lime rather than to undertake demonstrations of results from the use of lime.

A list of lime plants in Virginia together with necessary facts relating to their products was compiled and distributed. The information thus obtained is in frequent demand and has encouraged the more general use of lime.

A number of lime storage bins have been built as a result of work carried on in cooperation with county agents.

IV. VARIETY DEMONSTRATION PROJECTS

Very little is known as to the best varieties of farm crops for various parts of the state. In a period of a few years some valuable information on this important problem may be obtained by having variety tests or demonstrations made by farmers in various localities and on various types of soil.

While this project is yet in its infancy, a start has been made by securing a few farmers to make variety tests of wheat, oats, and rye. In each case tenth-acre plats of each variety will be grown and the yields carefully compared. Several of the standard varieties are being compared in each demonstration and certified seed of high quality is being tested with common seed. This project should serve,

not only to determine the best adapted and highest yielding varieties for a given section, but will demonstrate the superiority of pure bred seed over the poor seed commonly used.

The project is being broadened to include variety tests of corn and soybeans.

#### V. PUBLICATIONS

##### (a) Bulletins

Two bulletins dealing with seed certification were prepared and distributed during the year. Of the first of these "A Manual of Seed Certification", two thousand copies were distributed. Four thousand copies of the second bulletin, "Certified Seed Production in Virginia" were distributed. These bulletins served a very useful purpose in giving necessary information on plant breeding and requirements for the certification of seed to seed growers. They also helped to gain desirable and necessary publicity with reference to the importance of using good seed.

A bulletin setting forth a brief summary of data on Agronomy with especial reference to the application of such data to Agricultural conditions within the state was prepared. This bulletin is rather unusual as to contents, and should prove very helpful to farmers and county agents. In it more than thirty subjects relating to soils and crops production are briefly dealt with. A few typical subjects follow: "Varieties of Farm Crops for Virginia", "Legumes and Cover Crops", "Liming", "General Fertilizer Formulas Recommended for Virginia", "Phosphates", "Lerage and Average Yields of Principal Crops by Counties". This bulletin was written and printed but not distributed during the current fiscal year.

9

A fourth bulletin prepared and distributed by the Agronomy Department during the year dealt principally with the State Corn and Grain Show, but was partially devoted to a treatise on good seed and a discussion of the plant breeding accomplishments of the State Experiment Station.

(b) News Letters

The "Agronomy News Letters" containing timely articles on crops, soils, and seed production was distributed monthly to approximately fifteen hundred readers. This news letter was discontinued in August 1922 and is now carried in the Extension Division News.

(c) Newspaper articles

Twenty-seven articles were published in newspapers and agricultural papers. In addition to these specially prepared articles, portions of the monthly news letters were reproduced in many of the local papers.

VI STATE AND COUNTY FAIRS - STATE CORN AND GRAIN SHOW

(a) Judging

Twelve fairs were assisted by being furnished with judges for farm crops. These fairs were as follows:

London County  
Roanoke  
Alleghany County  
Staunton  
Galax  
Fairfax  
Rockbridge County  
Amelia County  
Culpeper County  
Fredericksburg  
Orange County  
Henry County

(b) Educational Exhibits

Educational exhibits were prepared and displayed, attended by a representative of the Agronomy Department, at the following fairs and meetings:

Staunton  
 Rockbridge County Fair  
 Amelia County Fair  
 Culpeper County Fair  
 Virginia State Fair (1921 and 1922)  
 Annual Meeting Virginia Crop Improvement Association  
 State Farmers Institute  
 V. P. I. Semi-Centennial  
 Orange County Fair  
 Henry County Fair

(c) State Corn and Grain Show

The State Corn and Grain Show held in Roanoke in connection with the joint annual meeting of the Crop Improvement Association and Corn Growers Association was fostered and promoted by the Agronomy Department. This was the first Utility Corn Show ever held in Virginia and aroused a great deal of interest. Seventy-two exhibits of corn were sent in ten days prior to the show and each ear was tested for germination and disease conditions, the judging being done in accordance with a new corn score card allowing consideration to germination and disease conditions as well as to the show points ordinarily considered. Each exhibit was returned to the owner with each ear of corn marked and accompanied by a report on germination and disease. Many of the exhibitors planted the ears separately as a field test of the germination record. An ordinary corn and grain

44

show was held in addition to the Utility Corn Show. One hundred and fifty farmers, representing nearly every part of the state, attended the meeting and corn show.

STATISTICAL SUMMARIES

1. W. G. Wysor, Agronomist.

Miles travelled -----	15,367
Counties visited -----	57
Meetings attended and addressed -----	36
Attendance at Meetings -----	5,448
People met or visited -----	688
Fairs visited -----	10
Press articles written -----	26
Circular letters written -----	25,000
Personal letters written -----	4,200
Days in office -----	198
Days in Field -----	155
Days sick leave -----	45
Days annual leave -----	15

Per cent time in field - 43.6

2. G. A. Jackson, Asst. Agronomist  
Sept. 14, 1921 to October 31, 1922.

Miles travelled -----	12,727
Counties visited -----	98
Meetings attended and addressed -----	3
Attendance at meetings -----	150
People met or visited -----	660
Fairs visited -----	11

Press Articles written ----- 1  
Personal letters written ----- 435  
Days in office ----- 117  
Days in field ----- 198

Per cent time in field 62.9

3. T. C. Maurer - Employed for special Field Work  
Aug. 10, 1922 to Sept. 12, 1922.

Miles travelled ----- 2,100  
Counties visited ----- 15  
People met or visited ----- 125  
Days in field ----- 25

4. T. K. Wolfe - Special Work (2 weeks)

Miles travelled ----- 1,800  
Counties visited ----- 11  
People met or visited ----- 80  
Days in field ----- 18

5. H. B. Redd - Special Field Work (2 weeks)

Miles travelled ----- 800  
Counties visited ----- 4  
People met or visited ----- 40  
Days in field ----- 12

SUMMARY - GRAND TOTAL ALL WORKERS

Miles travelled ----- 32,794  
Counties visited ----- 185  
Meetings attended and addressed ---- 39  
Attendance at meetings ----- 5,598

People met or visited -----	1,593
Fairs visited -----	21
Press articles written -----	27
Circular letters written -----	25,000
Personal letters written -----	4,635
Days in office -----	315
Days in Field -----	408

Per cent time in field, all workers - 56.4

