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GRADUATE THESIS

FIELD EXPERIMENTS AT THE VIRGINIA EXPERIMENT STATION

PRESENTED

BY

JOHN HOUSTON SQUIRES

SESSION 1905-06.

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The work which has just been mentioned is being conducted on a section of the College farm. This section which comprises about 60 acres has been divided by 30 link roads running north and south into four smaller ranges, each 500 links in breadth. Other 25 link roads running at right angles to the roads which divide the ranges, cut the sections every 100 links, thus making 6000 ranges. The advantages of plots of this dimension is obvious, for with a range measuring 100 and 500 links, which makes it 1/2 acre, there is no trouble in cutting it up into plots of any desirable size, for a strip of land one link wide running across a range will measure just 1/1000 of an acre. Then all that has to be done to get a plot of a desired fraction of an acre is to measure off (along the side of a range a number of links which being divided into 1/1000 will give the fraction of an acre desired. If a long plot is desired the range is laid off in

FIELD EXPERIMENTS AT THE VIRGINIA EXPERIMENT STATION.

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The work which has just been mentioned is being conducted on a section of the College farm. This section which comprises about 60 acres has been divided by 30 link roads running north and south into four smaller ranges, each 500 links in breadth. Other 25 link roads running at right angles to the roads which divide the ranges, cut the sections every 100 links, thus making $\frac{1}{2}$ acre ranges. The advantages of plats of this dimension is obvious, for with a range measuring 100 and 500 links, which makes it $\frac{1}{2}$ acre, there is no trouble in cutting it up into plats of any desirable size, for a strip of land one link wide running across a range will measure just $\frac{1}{1000}$ of an acre. Then all that has to be done to get a plat of a desired fraction of an acre is to measure off along the side of a range a number of links which being divided into $\frac{1}{1000}$ will give the fraction of an acre desired. If a long plat is desired the range is laid off in

the other direction, that is running parallel to the roads which divide the ranges. This dimension of a range is 100 links, so one link represents $\frac{1}{2000}$ of an acre, and the area of the plat may be calculated as already described for the short plats, using $\frac{1}{2000}$ instead of $\frac{1}{1000}$. At present more than 1000 plats of various sizes are laid off on these ranges and under cultivation.

For the accommodation of the horses and mules used on the plats and for the store house for the harvested crops, a roomy barn has been built and equipped with a thresher, scales, fan and other devices for separating, cleaning, and testing the seed and their progeny.

A map showing the arrangement of the plats, ranges and sections has been appended to this paper. A chart of the method of laying off the plats has also been prepared which will show how the plats and paths are placed. All the paths dividing the plats are 5 links wide.

One large plat which is marked "X" on the map is to be used for testing those varieties which prove valuable on the small plats on a larger scale. If they continue to yield well there they will be tested further on the college farm on a much larger scale, though the average performance for five years on the plats will be sufficient to test their merits.

Among other experiments the following tests were made during the summer of 1905 and the following winter: Variety tests were conducted with 32 varieties of spring oats; 40 varieties of corn, 8 varieties of millet, 8 of Canada Field Peas and 8 of Field Beans. A comprehensive experiment was made to ascertain the best dates of seeding winter cereals. Twenty crosses of pedigreed Leaming corn were made on native corn; and quite a large amount of work was done on the clovers.

MANAGEMENT OF EXPERIMENTS AND RECORDS KEPT OF PLAT WORK 1905.

Care was taken to see that each series of experiments was lo-

One plot each of Fulcaster Winter Wheat, Union Winter Barley, Excel-
 sior Winter Rye, Culberson Winter Oats, was planted on September 15th, 30th
 and October 15th and 30th. All plots were prepared in the same way and
 seeding in the same manner; the plots were laid off running in the
 same direction and were of the same size. Each plot received an equal
 amount of seed, which was planted in the same manner.

Notes were kept of this preparation and seeding and of the time of
 germinating. In the corn the percentage of germination of the seed
 was taken. In the early stages of the growth of the crops on the plots
 observations were made and notes taken on the peculiarities of growth
 and the amount of smut, lodged stalks, and every thing that would tend
 to influence in favor of or against each of the several plots occu-
 pied in the test.

At maturity the plots were all harvested in the same way and
 in the case of the fodder crops both green and dry weights were re-
 corded. The harvested crops were taken to the barn and kept until
 threshed or chucked, or in the case of the hay crops until they were
 fully cured, when they were weighted and the percentage of grain to
 the entire crop worked out.

VARIETIES OF CANADA FIELD PEAS

One of the DATES OF SEEDING WINTER CEREALS.

Aside from the climatic conditions, soil fertility and fria-
 bility, seed selection, and cultivation, the success of a crop depend
 largely upon the time of seeding. If the date of seeding is too ear-
 ly for fall crops there may be great injury by the Hessian Fly or
 too much growth before winter and the crop may be damaged by the cold;
 by the large plants being frozen out; if too late the growth may be in-
 sufficient and the young plants may not be strong enough to stand the
 winter weather. Somewhere between these dates named there is a date
 that, under ordinary conditions, will give the desired result and allow
 a successful crop.

With these facts in mind the following experiment was planned:

One plat each of Fulcaster Winter Wheat, Union Winter Barley, Excel-
 sior Winter Rye, Culberson Winter Oats, was planted on September 15th, 30th
 and October 15th and 30th. All plats were prepared in the same way and
 aside from the difference in the time of seeding were at all times un-
 der the same conditions. With regard to yield the following results
 were obtained.

YIELD WHEN SEEDED ON

	Sept. 15th	Sept. 30th	Oct. 15th	Oct. 30th
Wheat	11.2	17.5	15.0	8.7
Barley	12.9	30.8	24.1	11.2
Rye	12.5	23.3	22.0	24.5
Oats	23.3	31.6	17.9	5.4

From these results we would conclude that of the different dates
 of seeding the best for Wheat, Barley and Oats was Sept. 30th and for
 Rye October 30th.

This experiment will be repeated.

VARIETIES OF CANADA FIELD PEAS

One of the crops that has not been thoroughly tested in this
 section and one in which there is great possibilities is the Canada
 Field Pea. It is under favorable circumstances a good yielder and as
 it does not occupy the soil long fits well in certain rotations of
 crops. Being one of the family of plants, legumes, which have on their
 roots, when properly inoculated, bacteria which have the power to col-
 lect nitrogen from the air instead of drawing on the supply that is
 already available in the soil, this crop is not exhaustive or soil fer-
 tility but on the other hand has an improving effect on the soil. Its
 use in this state has in some instances been attended with success, and
 in others instances it has proved to be a failure, from what cause we
 are unable to say, positively, but it was probably from lack of inno-
 culation with nitrogen fixing bacteria.

Six varieties were tested on the plats during the last summer.

The following proved to be the best yielders;

French June Wielding. .900 tons of hay and 7 bushels of grain.

White Canada Field " .675 German 3.6 " 8.3 " Barnyard 2.55 tons.

White Marrowfat 2 .485 " 1.75 tons " 8.00 " 1.65 " tons.

Millet is used entirely as a hay crop and as the above results show,

These yields were all extremely low but this may have been caused by the unfavorable season. The work will be repeated until following trucking crops, and it has, where thoroughly tried proved very satisfactory results are obtained either for or against the use of this crop in Virginia. Care must be taken that it is harvested before maturing.

for the hay when cut when the seeds are well formed has very undesirable qualities, in that it interferes with some of the vital organs of the animals fed.

On the farm in this section the Canada Field Pea can be used only as a hay or soiling crop, as the yields of seed that can be produced will not warrant its growth for seed alone. It can either be seeded alone or with oats, and if it can be thoroughly acclimated can be made a valuable crop in rotation.

Oats have long been regarded as one of the best feeds for

VARIETIES OF SPRING OATS.
horses raised on the American farm, and there is always a lively demand for

VARIETIES OF MILLETS.
In the East, and especially in the Southeast, where the production of livestock can only be accomplished profitably where there can be an abundance of forage grown on a small area great care must be taken in the selection of forage plants. In one respect the millets seem to have made an exceptionally good showing, that of yield per acre, which is heavy. The hay when properly cured is of good quality and nutritious. The objections to this crop for roughage, however, are hard to overcome. One objection is that it is a very heavy feeder and therefore hard on the soil in that so much plant food is removed by each successive crop. Unlike the peas and beans it has not the power to draw upon the air for its nitrogen but must use that which is in the soil already.

Of the eight varieties, which were grown on the plats under normal and similar conditions, Brecks Japanese made the largest yield, with German second, Japanese Barnyard also produced well, but the

yields from Turkish, Siberian, and White French were very low and it is not likely that they will be of any value in this region. The yields per acre of cured hay were:

Brecks Japanese 3.77 tons, German 3.65 tons, Japanese Barnyard 2.65 tons, Turkish 1.72m Red Siberian 1.75 tons and White French 1.65 tons.

Millet is used entirely as a hay crop and as the above results show, is excellent yielder. Its chief place in rotation in this state is following trucking crops, and it has, where thoroughly tried proved very satisfactory. Care must be taken that it is harvested before maturing, for the hay when cut when the seeds are well formed has very undesirable qualities, in that it interferes with some of the vital organs of the animals fed.

VARIETIES OF SPRING OATS.

Oats have long been regarded as one of the best feeds for horses raised on the American farm, and there is always a lively demand for good, clean oats, either threshed or in the sheaf. They are not adapted to all localities on account of the fungus and insect enemies which seem to thrive in some sections more than in others. Some of these enemies can be combatted successfully and it is hoped that the experts now at work will soon be able to devise means by which all these pests can be controlled.

Oats adapt themselves to almost any rotation, being off the soil early enough in many localities to be followed by ensilage and corn and in all places they can be followed by cow peas or some other useful soiling crop. They are light feeders and do not drain the soil of plant food to any great extent.

All plats were 1/50 acre and well cared for. Of all these varieties only one Winter Turft, proved a failure. This one did not even come to maturity. In this experiment much attention was paid to the

protein content of the grain produced and chemical tests were made of the seed used and of the dry crop. In several instances a chemical examination showed that there was quite a decided difference in the protein content of the several varieties. One instance was very noticeable, that of the Silver Mine, which was highest in Yield per acre and lowest in percentage of protein. 57 varieties were tested in this experiment

VARIETIES OF CORN

The varieties showing the heaviest yield of grain were Silver Mine, 39.37 bushels per acre, Texas Rust Proof 35.15 bushels, and New White Sensation 32.81 bushels, the poorest yielders were Champion 11.71 bushels and Common Country 11.71 bushels. As both Silver Mine and Texas Rust Proof were very low in percentage of protein it is a question if New White Sensation, which was third in both yields and protein content, and therefore had the greatest amount of protein of all the varieties, should not be given the preference if the oats are grown to be fed at home.

EXPERIMENT II.

In this experiment the plats were of the same size as those in the first trial, and received the same care, except in this case there was no protein test. Of the eight varieties White Shonen was first in yield of grain with White Beauty and Texas Rust Proof second and third. Texas Rust Proof did well in both trials. The heaviest yield of straw was made by Negro Wonder, a variety that yielded a heavy grain crop. Any of these four varieties might be selected for this section, as all seem well adapted to the soil and climate.

VARIETIES OF FIELD BEANS

To test the comparative values of the several varieties of this crop, and to find whether or not it is well adapted to this locality, 8 varieties were planted on 1/50 acre plats and their resulting growth recorded. Quite a variation was noticed in the yields as Choice Navy produced 23.7 bushels of marketable grain and White

Kidney only threshed out 4.16 bushels. Following Choice Navy in yield were Burlingams and Choice Medium.

As a producer of seed alone it is doubtful if this crop will ever prove a success in the South, but when we consider that the plant collects its own nitrogen under certain conditions.

VARIETIES OF CORN

The old principles of the selection of seed corn must be replaced by something more in keeping with the present growth along agricultural line or cannot hold its present supremacy as the greatest of all feed stuffs. It has been the custom of the general agricultural public to pay no attention to the new and improved varieties of corn that have been worked up to what was at one time considered impossible yields; and to go on using the same old varieties that have been grown in their immediate neighborhood for years. The seed selection if there has been any, has been in the crib, the object generally being to pick out the biggest ears. A number of improved varieties will out yield these common varieties utilized very considerably and it was for the purpose of obtaining reliable data relative to the varieties adapted to Virginia that the following tests were begun at the Virginia Experiment Station. The work was done with the same painstaking accuracy that was used in the other experiments.

Twenty-four $\frac{1}{50}$ acre plats were planted with as many varieties of corn from various sources. Of these one never matured but the results obtained from the others we find that Boone County White, led in the production of corn, the yield being 53.8 bushels of grain and 1.49 tons of stover per acre; but Virginia Golden Dent must be given first place, for though it fell below Boone County White .96 of a bushels in yield of grain, it made .90 tons more of stover. Next came Hickory King with 46.65 bushels of grain and 2.50 tons of stover per acre. Other good varieties were; Cockes Prolific and Blunts Prolific, which yielded 43.92, -40.35 and 40.35 bushels respectively.

BREEDING EXPERIMENT WITH LEAMING CORN

Corn is very easily effected by the influence of environments. Seed taken from one place to another often produce ears and stalks that would not be recognized as the progeny of the parent. The ears may be changed in size, shape and circumference, and the stalks may become either taller or shorter. The influences that bring these changes about, and which may be used in breeding up varieties of corn are, climate, soil, fertility of the soil, altitude, moisture present in the soil, cultivation, length of season, method of planting.

Beginning with seed selection we should first consider the origin and variety of the seed. No matter what the variety it would be nothing short of foolish to bring seed from the rich Mississippi delta and try to produce a good crop on the old tobacco soil of virginia. The conditions are too unlike, and consequently the plant would have to accustom itself to its new surroundings, which might require three years, or perhaps a longer time. The variety too has to be suited to the local conditions, as some are much more prolific on upland soils, while others are adapted to rich bottom soil. Some varieties are heavy feeders and very susceptible to the use of barnyard manure and commercial fertilizers, while other show little change under the same circumstances. A change from a moist to a dry locality will at once perceptibly effect the yield per acre and the character of the plant. A change from a short to a long season may result in the crop requiring longer to reach maturity. Again in selection we make use of the law of heredity namely, that like begets like.

Selection should be done in the field so that the type has been taken as ideal can be closely followed. In this way we see just what we may expect from the seed, which we do not do when selecting from the crib. After maturity the selected corn should be separated from the mass of the crop, dried and stored until time for planting.

In this way we may accomplish many things. The ear may be brought nearer the ground, we may breed up to a variety with four ears, or the work may be done with regard to the comparative yields of grain and forage according to the purpose for which the crop is intended.

The work at the Virginia Experiment Station to date consists, in breeding up the acclimated Leaming corn which had been badly crossed, with well bred leaming seed brought in from Indians. For this purpose twenty of the best ears of the native corn were selected to correspond with the twenty ears of pedigreed seed to be used in the crossing. Each ear was numbered, the native ears being the odd number and the Indiana ears the even number; Each ear was carefully scored with regard to its size, shape, color, circumference, number of rows, color of cob and density with which the seed were packed thereon. A chemical determination of the amount of protein was also made.

These ears were then planted in parallel rows and all rows were treated in the same manner. The rows planted with native seed being detasseled to insure crossing with the pedigreed corn. When the crop was mature the rows were harvested separately and the corn shocked in the field until it was thoroughly dry, when it was taken to the barn, weighed and shucked and the ears weighed again. Five of the best ears were selected from each plot and scored in the same way as the seed, and the test for the protein content was made in the usual manner.

The ears from the pedigreed rows were much larger and more uniform in size, shape and color, has a slightly higher protein content and a higher percentage of grain to cob, there were more rows of corn per acre and the seed was packed more closely on the cob. On the other hand there was a higher percentage of barren stalks in the pedigreed seed than in the native, but this may have been due to the rainy season or the fact that the corn was not thoroughly acclimated.

As a rule the ears selected from alternate rows contained

about the same percent of protein, showing the influence of heredity.

This was not always the case as several marked variations were noticed, especially in the ears from rows 8, 26, 28, and 29. Here we had brought out in contrast to the power of heredity, just described, the laws of variation, which however are not so strong as those of heredity. Just what the results from these two forces in breeding will amount to cannot be told, as the breeder has to wait and select from the progeny that which most nearly resembles his ideal and breed from that.

The yield from the native corn was slightly in advance of that from the pedigreed seed, but the pedigreed seed produced .32 ton more stover per acre. From 70 pounds, or one bushel of ears the native corn shelled out 58.77 pounds of corn and the pedigreed corn 59.42.

The long ears showed a tendency to produce long ears, but this characteristic was not so strongly marked with regard to the circumference of the ears.

A marked improvement was noted in the native corn, and the work will be carried on for four years more to thoroughly standardize the results. Definite conclusions of helpful nature to corn growers will then be available.

Georgia Bul. 58.

Bradberry Improved, Marlboro, and Sander Unproved were first second and third in 15 varieties.

Georgia Bul. 51.

Among 15 varieties Cocks Prolific, Sanders, Tennessee Yellow were the three best yielders.

Georgia Bul. 55.

Of 14 varieties "Marlboro" and "Albemarle" headed the list.

Kansas, Bul. 123.

Out of 81 varieties the following were found to be the leading varieties: "Hildreth", "Brazilian Flour", Mammoth, Mammoth,

BIBLIOGRAPHY

Mississippi, Bul. 83

White Majestic, and Major Berry were first and second.

CORN.

Mississippi, Bul. 79.

Mosby Prolific and Tatum Choice were first in a series of

Alabama, Canebrake Station, Bul. 22.

Of varieties tested "Welborn" ranked first in yield.

Alabama (Canebrake), Bul. 21.

These results show Shaw Improved, Blount Prolific, and Coker Prolific, as the best yielders.

Alabama College Station, Bulletin. 111

Of 36 varieties tested for five years no one variety was first two years. Mosby gave the highest average yield for the five years, Shaw for four years, Coker for three years.

Canada, Cent. Expt. Sta. Bul. 48

Of nineteen varieties on 5 year experiment "Superior Fodder" was first with an average yield of 39,020 pounds per acre.

Georgia Bul. 62.

Out of 16 varieties Marlboro Prolific and Henry Grady were first and second.

Georgia Bul. 58.

Bradberry Improved, Marlboro, and Sander Umproved were first second and third in 13 varieties.

Georgia Bul. 51.

Among 16 varieties Coker Prolific, Sanders, Tennessee Yellow were the three best yielders.

Georgia Bul. 65.

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CORN BREEDING

Griffin Calico, Klondyke, Cöcke Prolific, Bickers Choice.

Mississippi, Bul. 83

White Majestic, and Major Berry were first and second.

Mississippi, Bul. 79.

Mosby Prolific and Tatum Choice were first in a series of experiments conducted during a dry summer.

North Dakota, Rept., 1903.

North Dakota, Goldent Dent., and Northwestern Dent were first.

North Carolina, Bul. 171.

One-hundred -day Bristol, Delaware County Dent, and Leaming were the heavy yielders of a large number on test.

North Carolina, Bul. 23.

Weekly Improved was first in a series of experiments carried on in two different places.

South Carolina, Bul. 171.

Albemarle Prolific was the heaviest yielder of the seven varieties on test.

Tennessee, Bul. Vol. XVII, No. 2.

Out of 62 varieties under test Hickory King, Champion, White Pearl, and Improved Beaming were respectively the best yielders.

Describes work with corn which had a tendency to sucker and finds that some beneficial results had been obtained by selecting seed from stalks that did not sucker. Also, that rows planted from different ears of the same variety showed marked variations.

CORN BREEDING

Indiana, Bul. 105.

Points out the variations of yields of the same variety in different parts of the state, gives score card adopted for the state and points out the necessity of seed selection.

Missouri, Bul. 59.

Field selection with regard to size of kernel and the width between the rows, and the length, circumference and uniformity of ears, showing the ^{wide} variations from the parent stalk.

Tennessee, Bul. Vol. XVII, No. 2.

Calls attention to the variations of yields from separate ears from the seed of a well established variety, and gives method of improving seed to suit Southern conditions.

U.S. Dept., Year Book 1902.

The progeny of ears having a large kernel with a large germ were larger. The length of the seed ear has a direct bearing on the length of the ears of the progeny.

U.S. Dept., Year Book, 1901.

Discusses the extent of cereal breeding.

Wisconsin, Rept., 1904.

Describes work with corn which had a tendency to sucker and finds that some beneficial results had been obtained by selecting seed from stalks that did not sucker. Also, that rows planted from different ears of the same variety showed marked variations.

Maryland, Bul. 56.

Of the several varieties of winter oats tested Hatchett, Black Winter, and Virginia Gray, were first second and third in the order named.

Michigan, Spec. Bul. 28.

Of 15 varieties of spring oats Black Beauty was first with a yield of 21 bushels.

VARIETIES OF OATS.

Alabama, Bul. 95.

Of a number of varieties tested Red Rust Proof, Beardless, Hatchett Black, and Gray Winter were the heaviest producers. The yield of Red Rust Proof was 30.8 bushels, and of Gray Winter 19.5.

Iowa, Bul. 55.

Out of 35 varieties New Salt Lake was first with a yield of 58.8 bushels of grain, and following this were Silver Mine, Nebraska Gold Mine, and Green Mountain.

Illus. Landw. Ztg., 24 (1904).

"Most highly developed varieties of plants from regions having a favorable climate and a rich soil retain their qualities only under conditions similar to their origin."

Kentucky, Bul. 133.

Of 27 varieties tested in 1901, the leading varieties were; White Russian, Improved Welcome, Wonder, White Belgian and New American.

Montana, Bul. 32.

Thirty three varieties were on test and the following were selected as the best producers of grain and straw; Poland White, American White, White Wonder, and Nameless Beauty.

Michigan, Rept., 1901.

Of 7 varieties Big Four, yielding 67.7 bushels was the highest Yields.

Maryland, Bul. 56.

Of the several varieties of winter oats tested Hatchett, Black Winter, and Virginia Gray, were first second and third in the order named.

Michigan, Spec. Bul. 28.

Of 13 varieties of spring oats Black Beauty was first with a yield of 21 bushels.

North Dakota, Rept. 1901.

Minnesota 202, Silver Mine, Early Gothland, Siberian White, and Bow of Promise were the best producing varieties.

Oklahoma, Bul. 33.

Of nine varieties Texas Red, Negro Wonder, Lincoln, and Black Russian were the heaviest yielders, ranking in the order named.

Pennsylvania, Rept. 1901.

Of 19 varieties Sensation, Irish Victor, Silver Mine, Henderson Clydesdale, and Heavy Weight Champion were the most productive.

Tennessee, Bul. Vol. XVIV, No. 3.

Change of winter oats Culberson was found to be the most productive and the earliest to mature. The yield was 73.7 bushels per acre.

Utah Bul. 56.

American Banner, Canada White, Badger Queen, Wide Awake, and Clydesdale were the most productive.

Wisconsin, Rept. 1904.

Of 18 varieties tested Swedish Select, also known as Wisconsin No. 4, gave the best results for two years.

Mississippi, Bul. 84.

Of 12 varieties Whip-poor-will was found to be the best producer with 2.6 tons of hay per acre.

Mississippi, Bul. 83.

Of a number of varieties the following were found to be the best producers: Unknown, Whip-poor-will, and New Era.

North Carolina, Bul. 146.

Of 7 varieties Black ripened earliest and Unknown was the heaviest yielder.

New Jersey, Rept. 1903.

Red Ripper was found to be the heaviest producer with good yields made by South Down, Small Black and Taylor.

VARIETIES OF COW PEAS. *pt. Farm, Rept. 1900.*

The largest average yield per acre of peas grown for six years
Arkansas, Bul. 80. *led from White Wonder, New Zealand Field, Early Britain*

Cow Peas are very susceptible to climatic conditions, as a
Tennessee decided difference was noticed in the yields on different
plats of seed from different sources, but of the same variety.

Alabama, College, Bul. 118. *varieties tested.*

Virginia Among a large number of varieties tested New Era, Black and Red
Ripper produced the most seed, and Wonderful and Clay produced
the most hay. *and 14,000 pounds of green substance per acre*

Arkansas, Bul. 70. *the best of the varieties tested.*

Wisconsin Out of 14 varieties grown for 2 and 3 years in succession New
Era produced the largest average crop of grain and Lady the
largest average yield of hay.

Delaware, Bul. 46.

Whippoorwill, New Era, Black, Clay, Unknown and Black Eye led
in the variety test.

Illinois Station, Circ. No. 69.

Among 22 varieties Extra Early and Warren New Hybrid yielded
more than the others.

Mississippi, Bul. 84.

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ducer with 2.6 tons of hay per acre.

Mississippi, Bul. 83.

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New Jersey, Rept. 1903.

Red Ripper was found to be the heaviest producer with good
yields made by South Down, Small Black and Taylor.

Ontario Agr. Col. and Expt. Farm, Rept. 1900.

The largest average yield per acre of peas grown for six years were obtained from White Wonder, New Zealand Field, Early Britain Egyptian Mummy, New Zealand Brown and Tall White Marrowfat.

Tennessee, Bul. Vol. XIV. No. 1.

Taylor, Wonderful, Clay, Blackeye and Whippoorwill gave the best returns of all the varieties tested.

Virginia, Bul. 149.

Southern Wonderful, Iron and Clay produced respectively, 19,950, 16,400, 15,050, and 14,000 pounds of green substance per acre and were the best of the varieties tested.

Wisconsin, Rept. 1902.

Out of seven varieties Red Ripper and New Era gave the best returns.

North Dakota, Rept. 1900.

Of a number of varieties German was first with a yield of 45.9 bushels of seed, or more than either oats or barley for that season.

New Jersey, Rept. 1903.

From tests of a number of varieties it was concluded that it was not so profitable to grow White French, Hungarian, Red Siberian, Golden and German, as Barnyard and Pearl when a heavy yield of forage is desired.

South Dakota, Bul. 84.

Of five varieties tested, Siberian produced 5,410 pounds per acre and was first.

VARIETIES OF MILLET.

Canada, Expt. Farms Rept. 1903.

At four places the test of variety resulted differently in one year. Of these four tests the best producers were; Pearl, Algerian, White Round French, and Round Extra French.

Kansas, Bul. 123.

Among the millets German ranked first, with 3.6 tons of hay and 25.2 bushels of grain per acre. Siberian millet ranked next.

Massachusetts, Hatch, Rept. 1897.

Owing to the small size of the plats, 1 square rod, no comparisons were made, but three of the varieties; Japanese Broom corn, Japanese Barn Yard, and Japanese each produced 40 bushels of grain per acre.

North Dakota, Rept. 1900.

Of a number of varieties German was first with a yield of 43.9 bushels of seed, or more than either oats or barley for that season.

New Jersey, Rept. 1903.

From tests of a number of varieties it was concluded that it was not so profitable to grow White French, Hungarian, Red Siberian, Golden and German, as Barnyard and Pearl when a heavy yield of forage is desired.

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Of five varieties tested, Siberian produced 5,410 pounds per acre and was first.

VARIETIES OF CORN, 1905

NAMES	:Height: : of : : crop : : inches:	Yield per acre:		Yield per acre'		Yield per acre	
		Tons	Tons	Tons	Tons	Bushels	Bushels
		When	When	Stover	Ears	70lbs.	56lbs.
		cut	dry			of	Grain
						Ears per	per Bu.
						Bu.	Grain
						Grain	
Boone Co. White, Ind	114	8.25	3.35	1.49	1.76	50.35	53.80
Va. Golden Dent	108	7.10	4.05	2.39	1.66	47.50	52.84
Hickory King	114	8.25	4.00	2.50	1.50	42.85	46.65
Cockes Prolific	135	7.75	3.12	1.59	1.53	43.92	45.09
Blunts Prolific (Tenn)	117	4.80	2.50	1.09	1.41	40.35	42.42
Boone County White	120	6.65	2.95	1.54	1.41	40.35	41.51
Leaming (Ped. Seed)	99	7.12	2.52	1.27	1.25	35.71	38.61
Johnson Co. White Dent	105	6.80	3.00	1.68	1.32	37.85	37.94
Snow White Dent (Dent)	105	5.00	2.37	1.10	1.21	34.64	37.50
Farmer's Int. White	108	5.00	2.55	1.29	1.26	36.07	37.27
Iowa Gold Mine (Ind. F. C. P.)	83	4.05	2.02	.94	1.08	31.07	33.70
Reid's Yellow Dent	110	6.42	2.30	1.12	1.18	33.93	33.26
Leaming (common seed)	99	4.50	2.10	1.00	1.10	31.43	33.19
Imp. Golden Beauty	102	4.85	2.20	1.12	1.08	31.07	32.81
Riley's Favorite	110	4.80	2.25	1.18	1.07	30.71	32.81
Earlyn Leaming	96	4.87	1.87	.82	1.05	30.00	31.46
Iowa Silver Mine	98	5.00	2.12	1.12	1.00	28.57	31.25
Va. Ensilage Corn	105	7.25	3.25	2.20	1.05	30.00	30.58
I. S. W. Snow Flake	114	5.67	2.65	1.65	1.00	28.57	29.91
Drought Proff	93	4.67	1.72	.85	.87	25.00	27.45
McMackin's Gourd Seed	144	6.80	2.62	1.70	.92	26.43	26.56
Hilton's Prolific	132	6.65	2.50	1.62	.88	25.35	25.00
Minnesota No. 13	78	2.75	1.00	.62	.38	11.07	12.06
Huffman	129	6.25	2.97	**	**	**	**

VARIETIES OF SPRING OATS, 1905.

Name of Variety	Number of days Maturing	Condition of crop	% lodged	% sweet	Height in inches	Yield per acre		Ratio Grains to Straw
						Bu.	Tons	
1 -White Beauty	96	85	5	8	50	19.53	1.06	1:3.4
2 -Canada Giant	96	80	40	1	48	13.28	1.04	1:4.8
3 -Negro Wonder	100	80	25	5	50	15.62	1.67	1:6.3
4 -Impd. White Russian	100	80	50	4	48	14.06	1.12	1:5
5 -White Schouen	101	75	2	2	49	24.22	1.32	1:3.4
6 -Common Country	98	76	60	8	48	13.28	1.46	1:6.8
7 -Early Burt	90	60	85	2	42	10.15	1.06	1:6.5
8 -Texas Rust Proof	100	70	50	2	43	17.18	1.10	1:4

VARIETIES OF MILLET, 1905.

Plot No.	Name of Variety	Date of Ripening	Green		Yield per acre	
			Weight	Weight	Green	Hay
1	German	9/16	292	146	7.13	3.65
2	Japanese Barnyard	8/16	229	106	5.72	2.65
3	Hungarian	8/15	153	83½	3.82	2.08
4	Manotiba	8/14	160	77	4.00	1.92
5	Turkish	8/14	142	69	3.55	1.72
6	Brek's Japanese	9/4	290	151	7.22	3.77
7	Red Siberian	8/14	147½	70	3.67	1.75
8	White French	8/14	143½	66	3.58	1.65

FIELD TESTS

VARIETIES OF SPRING OATS, SEASON 1905.

Name of Variety	Condition of crop	Per cent Lodged	Per cent Sweet	Days Maturing	Height in inches	Yield Grain Bu.	Yield Straw Tons
66							
1 Silvermine	75	25	0	113	42	39.37	1.40
2 Texas Rust Proof	70	10	1	102	33	35.15	1.13
3 New White Sensation	85	0	0	111	42	32.81	1.10
4 Mam. Whiteside	70	40	0	114	38	26.56	1.37
5 Black Tartarian	70	0	0	110	36	26.17	.85
6 Green Mountain	80	0	0	112	36	25.39	.90
7 Golden Giant	80	0	0	121	39	24.43	1.10
8 Big Four	68	0	2	111	36	23.43	.88
9 Prosperity	65	15	1	101	38	21.87	1.00
10 American Banner	85	0	1	118	43	21.09	1.53
11 Early Burt	68	25	0	97	36	20.31	1.05
12 Lincoln	85	10	.5	122	44	20.31	1.68
Wisconsin No. 14	80	6	2	112	39	18.75	1.25
14 Welcome	65	60	0	117	42	17.97	1.21
15 Great American	70	0	2	110	38	15.62	.75
16 Black Spring	75	0	2	109	40	12.50	.81
17 Champion	70	12	0	113	38	11.71	.87
18 Common Country	80	0	1	112	40	11.71	.88
19 Winter Turf	90	0	1	114	45	8.59	1.13

SEED TESTS

VARIETIES OF SPRING OATS, 1905.

Name of Variety	No. of Seeds ; in. "g";	Seeds ; Barren:	Weight : true : seed : "g"	No. of : decayed : seed : in : gram	Per cent : before : seeding	Protein : after : seeding	Aver- : age : % pro- : tein	% : Hull
1 Welcome	41	2	.69	3	13.42	17.94	15.68	31
2 Wisconsin No.4	44	1	.70	1	14.38	16.31	15.33	30
3 New White Sen- (sation)	54	3	.59	0	13.66	16.75	15.20	41
4 Mam. White Side	61	4	.67	0	11.72	17.50	14.61	33
5 Prosperity	49	0	.72	0	13.37	15.56	14.46	28
6 American Banner	64	3	.60	1	11.94	16.88	14.41	40
7 Lincoln	68	2	.62	4	11.98	16.63	14.30	38
8 Black Spring					12.01	16.56	14.28	30
9 Common Country	70	4	.60	1	11.72	16.72	14.22	40
10 Early Burt	52	2	.70	0	12.47	15.56	14.16	30
11 Champion	60	1	.69	5	11.38	16.63	14.00	31
12 Winter Turf					15.00	12.81	13.90	32
13 Black Tartarian	55	1	.70	1	14.12	13.50	13.81	30
14 Texas Rust I (Proof)		2	.66	0	13.33	13.81	13.57	34
15 Green Mountain	59	9	.57	4	11.19	15.38	13.28	43
16 Great American	49	0	.70	1	11.34	14.62	12.98	30
17 Golden Giant	65	6	.64	2	9.65	16.31	12.98	36
18 Big Four	46	0	.65	1	10.05	15.75	12.90	35
19 Silvermine	41	2	.61	2	8.98	16.20	12.59	39

VARIETIES OF CORN, 1905.

Name of Variety	Per cent	Per cent	No. Ears.	Weight	Average	
	In Ear	in crop	Per acre	ears per acre lbs.	Weight ears oz.	Weight all stalk oz.
1 Boone Co. White (Ind)	85.49	44.96	66.50	35.25	8.46	7.50
2 Va. Golden Dent	89.13	36.58	70.00	33.25	1.60	6.65
3 Hickory King	87.08	32.65	66.50	30.00	7.21	6.00
4 Cock's Prolific	83.49	40.40	67.50	30.75	7.28	6.15
5 Blunt's Prolific	84.06	47.50	74.00	28.25	6.18	5.65
Boone Co. White (Tenn)	82.23	39.39	66.50	28.25	6.79	5.65
7 Leaming (Ped Seed)	86.58	42.82	64.00	25.00	6.25	5.00
8 Johnson Co. White Dent	80.20	35.41	58.00	26.50	7.31	5.30
9 Snow White Dent	86.60	44.22	66.50	24.25	5.86	4.75
10 Farmer's Int. White (Dent)	82.68	40.92	60.00	25.25	6.73	5.05
11 Jona Gold Mine	86.80	46.58	60.00	21.75	5.80	4.35
12 Reid's Yellow Dent (Int)	78.92	41.02	64.00	23.75	5.93	4.75
13 Leaming (Common Seed)	84.46	44.25	64.00	22.00	5.50	4.40
14 Imp. Golden Beauty	84.48	41.75	52.50	21.75	6.62	4.35
15 Riley's Favorite	85.45	40.82	57.50	21.50	5.98	4.30
16 Early Leaming	83.92	47.00	53.00	21.00	6.33	4.20
17 Jona Silver Mine	87.49	41.17	54.00	20.00	5.85	4.00
18 Va. Ensilage Corn	81.54	26.34	45.00	21.00	7.46	4.20
19 Imp S. White Snow F (Flake)	83.75	31.60	52.50	20.00	8.60	5.65
20 Drought Proof	87.72	44.48	54.00	17.50	5.18	3.50
21 McMockin's Grand Seed	80.40	28.33	34.00	18.50	8.70	3.70
22 Hilton's Prolific	78.87	28.00	50.00	17.75	5.68	3.55
23 Minnesota No. 13	87.09	33.72	45.00	7.75	2.75	1.55

VARIETIES OF FIELD BEANS, 1905.

PLAT NO.:	Names of Varieties:	Dates of ripening:	Total wt. of crop:	Weight of grain:	Yield per acre	
					Grain Bu.	Tons Straw
1	California wander	Aug. 15	34½	12¾	10.63	.543
2	Red Kidney	" 15	36	15 ¹ / ₈	12.60	.525
3	White Kidney	" 15	17	5	4.16	.300
4	Inpd. Prolific tree	Sep. 1	30	11 ³ / ₈	9.46	.465
5	Choice Medium	" 21	50½	17	14.16	.850
6	Choice Navy	" 17	44½	28½	23.75	.400
7	Boston Pea	" 1	41	15¼	12.70	.643
8	Burlingame	" 16	54	23	19.16	.775

VARIETIES OF CANADA FIELD PEAS

Name of Variety	Days Maturity	Height of crop in inches	Yield		Ratio Grain to Straw
			Grain Bu.	Straw Tons	
Black eye Marrow fat	93	35	3.3	.20	1:2
White Marrow fat	94	42	8.0	.48	1:2
Scotch Beauty	94	36	2.7	.30	1:3.7
French Jewel	86	26	7.0	.90	1.4:2
White Canada Field	93	38	8.0	.67	1:2.7
Green Canada	98	45	3.7	.41	1:1.3

DATES OF SEEDING WINTER CEREALS 1904-1905.

Date of Seeding	Condition of Crop	% of Fly	% of Lodger	Height in Inches	Days Maturing	Yield Bu. Grain	Yield Tons Straw	Ratio
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Fulcaster (Sep.15	35	68	20	40	280	11.25	1.70	2:1
W.Wheat)	" 30	65	54	18	44	265	17.50	1.42	2:7
" (	Oct.15	45	58	20	45	252	15.0	1.27	2:8
" (	" 30	45	36	16	40	239	8.76	1.06	4:0
Union (
W.Barley)	Sep.15	30	Free	1	26	273	12.91	.38	0:9
" (	" 30	60	"	2	27	256	30.83	1.22	0:7
" (	Oct 15	55	"	3	28	245	24.16	.68	0:9
" (	" 30	25	"	5	27	231	17.25	.46	1:4
Excelsior (	Sep.15	88	"	2	70	278	12.50	1.65	2:6
W.Rye)	" 30	90	"	0	72	264	23.33	1.63	2:3
" (	Oct.15	85	"	0	66	255	22.08	1.46	2:3
"m (	" 30	60	"	7	54	241	24.58	.67	1:9
Culberson (	Sep.15	70	"	0	40	277	23.33	.85	1:2
W.Oats)	" 30	80	"	0	44	263	31.66	1.05	1:1
" (	Oct.15	45	"	0	40	255	17.91	.88	1:6
" (	" 30	25	"	0	31		5.41	.53	3:0

**VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.**

VARIETIES OF COW PEAS--1905.

Variety	Growth		Date Ripe	Yield Per Acre of		
	Peas	Weeds		Green	Hay	Grain
				Tons	Tons	Bus.
Whippoorwill	70	20	Aug 30	7.5	2.55	7.75
Warren's Extra Early, Ten.	30	60	" 21	1.5	.65	7.75
" " " Ark.	25	80	" "	1.0	.30	*
" " " W.H.M.	20	80	" "	.75	.50	*
Taylor	50	80	Sep 12	1.95	.60	2.25
Clay	55	35	" 14	2.70	.87	3.35
Red Ripper	70	35	" 21	2.65	.88	2.00
Southern Yellow Eye	78	30	" 21	2.80	.93	2.00
Southern Black Eye	78	25	" 4	4.10	1.80	4.00
Large Black	72	30	" 4	7.30	1.82	4.68
Southern Blackeye	76	30	" 1	3.75	1.20	5.83
Wonderful	78	25	" 13	8.55	2.10	5.00
New Era	50	25	Aug 30	3.30	.95	4.68
Red Carolina	65	50	Sep 13	5.38	1.50	3.33
Lady	38	50	Aug 21	2.70	.55	2.56
Iron	70	60	" 2	4.80	1.56	4.68
Rice	35	35	" 20	4.05	1.50	2.54
Extra Early Buckeye	30	80	Aug 28	.90	.55	.50

All plats were seeded on May 9th, and were 1/50 acre. The rows were 3 1/3 links apart and the seed were planted four inches apart in the row. The varieties marked with an asterisk in the "Yield of Grain" column were abut killed by weeds.

VIRGINIA EXPERIMENT STATION

BLACKSBURG, VA.

C-1

Percentage of protein in Ears of Leaming Corn from Plats.

Ear No.	A	B	C	D	E	Average
1	9.34	10.48	8.62	9.42	7.64	9.10
2	9.34	7.86	9.21	7.01	8.73	8.44
3	9.380	9.42	8.41	9.48	9.88	9.31
4	11.51	8.49	8.67	9.25	8.81	9.34
5	10.01	8.49	11.18	9.09	9.87	9.73
6	8.32	8.49	8.69	8.92	8.74	8.63
7	9.16	9.30	9.34	9.77	10.00	9.51
8	11.31	10.92	10.14	10.63	7.90	9.98
9	8.88	7.63	9.13	8.42	8.74	8.43
10	8.99	7.33	9.34	8.62	8.81	8.62
11	7.89	8.27	10.53	8.76	10.47	9.18
12	8.72	8.36	8.69	9.48	9.17	8.88
13	9.16	7.67	7.81	8.85	9.71	8.64
14	8.21	8.49	8.81	8.77	9.59	8.77
15	9.98	9.78	8.85	7.10	10.00	9.14
16	8.28	8.67	7.65	7.19	9.63	8.28
17	7.70	8.97	8.44	8.25	7.25	8.12
18	9.98	7.34	9.01	9.89	8.65	8.97
19	8.37	8.92	8.59	8.99	8.48	8.67
20	8.15	7.25	7.75	8.40	9.80	8.27
21	8.90	9.31	9.91	7.92	8.26	8.86
22	8.45	9.05	7.00	8.09	7.90	8.10
23	9.85	10.36	8.47	8.37	9.41	9.29
24	8.72	8.89	8.79	9.19	9.20	8.96
25	9.13	9.28	10.12	8.81	9.14	9.29
26	7.58	8.32	9.65	8.76	8.47	8.55
27	9.32	9.50	8.68	8.61	8.89	9.00
28	9.85	10.15	8.89	9.08	8.50	9.09
29	10.30	9.35	9.20	7.41	9.50	9.15
30	9.20	8.82	9.52	8.20	8.14	8.77
31	8.79	8.68	9.37	9.14	9.57	9.11
32	7.36	9.40	8.20	8.43	9.08	8.49
33	8.53	9.52	10.16	8.83	10.47	9.50
34	10.40	9.48	9.71	7.98	9.53	9.42
35	8.88	7.87	9.31	8.11	10.10	8.65
36	8.83	8.66	8.66	7.98	7.91	8.41
37	8.82	7.27	8.13	7.99	10.04	8.45
38	8.95	8.14	9.96	8.97	7.79	8.72
39	8.93	6.85	8.44	8.49	8.12	8.16
40	8.76	7.82	7.18	8.28	8.79	8.16

This data was obtained from the analysis of five ears grown from the seed of the ears numbered in the first column.

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C2-

--Size of Grains in Ears of Leaming Corn, from Plat Experiments-1905

Ear No.	Thickness of 25 Grains					Average
	A	B	C	D	E	
1	4	4 4/8	4 1/8	4 4/8	4	4.22
2	4	3 4/8	3 7/8	4 4/8	4	3.97
3	4	4	3 6/8	3 6/8	4 1/8	3.92
4	4 5/8	4	4	4	3 7/8	4.12
5	4 2/8	4	4	3 7/8	4	4.02
6	4 1/8	4	4 6/8	4 2/8	4	4.22
7	4 4/8	4 4/8	4 3/8	4 1/8	3 6/8	4.25
8	3 6/8	4 2/8	3 6/8	4 4	3 4/8	3.85
9	4 2/8	3 6/8	4	3 4/8	3 7/8	3.87
10	3 6/8	4 2/8	4 7/8	4 2/8	4 5/8	4.22
11	4 1/8	3 7/8	3 7/8	3 5/8	3 6/8	3.85
12	3 7/8	3 5/8	4 3/8	3 7/8	4 2/8	4.00
13	4 2/8	4 1/8	4 4/8	4 1/8	4 1/8	4.22
14	4 1/8	4	3 6/8	4	4 1/8	4.00
15	4 5/8	5 1/8	3 6/8	3 7/8	4	4.27
16	4 2/8	4 2/8	4 6/8	3 6/8	4 3/8	4.27
17	3 5/8	3 6/8	3 7/8	3 4/8	4 1/8	3.70
18	3 6/8	4 1/8	4 2/8	4	4	4.02
19	4	4 4/8	4	4 2/8	4 5/8	4.32
20	3 5/8	3 7/8	4 2/8	4 2/8	4 2/8	3.95
21	3 7/8	4 4/8	4 2/8	4	4 1/8	4.15
22	3 6/8	4 5/8	3 6/8	3 6/8	3 5/8	3.90
23	4	4 3/8	3 6/8	4	4 4/8	4.12
24	4	3 6/8	4 3/8	4	3 6/8	3.97
25	4 1/8	4	4	4	3 6/8	3.97
26	4	4 2/8	4 2/8	4 3/8	3 5/8	4.100
27	3 6/8	3 7/8	4 1/8	3 6/8	3 7/8	3.92
28	3 6/8	4	4 2/8	5	3 5/8	4.12
29	3 7/8	3 5/8	4 1/8	4 1/8	3 4/8	3.85
30	3 7/8	4	4 1/8	4 1/8	4 1/8	4.05
31	3 4/8	4 1/8	3 6/8	3 5/8	4	3.80
32	4	4 2/8	4 3/8	4 1/8	4 2/8	4.20
33	3 6/8	4	3 4/8	4 3/8	4 1/8	3.95
34	4	4 2/8	4	3 7/8	3 4/8	3.92
35	3 5/8	3 7/8	4	4 2/8	4	3.95
36	3 6/8	3 6/8	3 6/8	4 5/8	4 2/8	3.87
37	3 6/8	4	4 2/8	3 6/8	4 4/8	4.05
38	3 4/8	4	4 1/8	3 7/8	3 4/8	3.80
39	3 4/8	3 7/8	4	3 5/8	4 2/8	3.85
40	3 4/8	3 7/8	4	3 5/8	4 2/8	3.85

Results obtained from experiments on 1/100 acre plats.

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C-3

Number of Grains of Leaming Corn Per Ounce--Yield of Plats L905.

Ear No.	A	B	C	D	E	Average
1	94	75	91	80	90	86.0
2	105	107	92	123	101	105.6
3	72	91	100	80	80	84.6
4	105	126	109	121	111	114.4
5	81	115	99	110	76	94.4
6	134	117	86	99	60	99.2
7	85	74	100	92	92	88.6
8	120	86	93	104	106	101.8
9	112	134	102	123	86	111.4
10	136	133	73	96	92	106.0
11	95	97	114	105	90	100.2
12	100	100	100	86	80	93.2
13	114	90	99	93	106	100.4
14	98	103	103	109	84	99.4
15	101	100	129	105	104	107.4
16	90	78	84	102	86	88.0
17	90	103	100	107	97	99.4
18	96	126	94	136	87	107.8
19	85	108	86	79	92	88.0
20	115	114	109	142	82	114.4
21	91	123	84	101	80	95.8
22	109	120	110	120	120	115.8
23	90	94	95	96	70	89.0
24	100	121	91	115	80	101.4
25	102	102	75	123	80	96.4
26	100	116	104	93	108	104.2
27	95	112	85	95	76	92.6
28	123	104	100	133	110	114.0
29	113	94	85	84	90	93.2
30	123	129	112	93	100	111.4
31	90	98	81	78	73	84.0
32	111	114	121	104	97	109.4
33	100	81	65	90	67	84.6
34	83	122	111	83	77	95.2
35	84	83	110	77	82	85.2
36	154	95	91	88	110	107.6
37	80	190	88	80	81	83.8
38	123	87	106	83	115	104.8
39	89	95	80	90	111	93.0
40	149	102	143	128	90	122.4

Results obtained from experiments on 1/100 acre plats.

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C94

Length of 25 Grains Leaming Corn-Plats 1905.

Ear No.	A	B	C	D	E	Average
1	11 10/16	11 4/16	10 12/16	11 11/16	12 12/16	11.61
2	11 14/16	12 6/16	13 4/16	10 4/16	12	11.95
3	11 11/16	11 11/16	11 5/16	11 6/16	11 4/16	11.48
4	10 14/16	10 12/16	11 10/16	11	11 12/16	11.20
5	11 10/16	10 8/16	11 8/16	11 6/16	12 3/16	11.43
6	11 6/16	11 10/16	11 4/16	11 4/16	12 14/16	11.67
7	11 4/16	11 12/16	10 10/16	11 8/16	12	11.42
8	11 14/16	12 2/16	11 2/16	10 5/16	10 8/16	11.18
9	10 10/16	11 4/16	11 4/16	11 5/16	11 10/16	11.13
10	10 10/16	10	12	12 4/16	11 7/16	11.26
11	11 3/16	11 8/16	11 2/16	12 10/16	12 1/16	11.70
12	12 8/16	12 6/16	10 4/16	12 14/16	12 13/16	12.16
13	12	12 6/16	10 8/16	11 10	10 8/16 ²⁷	11.27
14	11 10/16	12 12/16	11 8/16	13 2/16	12	12.27
15	10 10/16	10 4/16	11 10/16	11 6/16	11 2/16	11.00
16	11 8/16	12 9/16	11 8/16	12 4/16	12	12.96
17	11	12 14/16	12 6/16	12 3/16	11 7/16	11.97
18	14	11	11	10	12 4/16	11.65
19	11 6/16	11	11 12/16	11 6/16	11 4/16	11.35
20	11 10/16	11 5/16	11	11 10/16	13	11.73
21	11 6/16	10 8/16	12	10 10/16	11 2/16	11.12
22	11 6/16	11 6/16	11	10 12/16	10 10/16	11.02
23	12	12 1/16	12 6/16	12	12 12/16	12.23
24	12 2/16	12	11 12/16	10 8/16	10 11/16	11.41
25	11 4/16	11 11/16	11 8/16	11 9/16	11 8/16	11.50
26	11 6/16	11	12 11	11 8/16	11 9/16 ⁵³	11.53
27	12 10/16	11 7/16	12 6/16	11 14/16	11 11/16	12.00
28	12	11 3/16	12	12 8/16	10 12/16	11.63
29	10	12 6/16	11 7/16	11 10/16	11	11.31
30	11	11	11 10/16	11 3/16	11 12/16	11.31
31	12 12/16	11	12 4/16	12 7/16	11 6/16	11.96
32	12 8/16	11 13/16	11	11 10/16	12 14/16	11.96
33	11 12/16	11 12/16	12 3/16	10	10 10/16	11.46
34	12	11	12 6/16	12 2/16	13	12.10
35	11 10/16	11 4/16	11 12/16	12 4/16	13 4/16	12.02
36	11 5/16	11 4/16	12 5/16	13 4/16	12 8/16	11.92
37	13 2/16	11 10/16	12	11 8/16	12 1/16	12.06
38	13 2/16	12 10/16	11 8/16	13	11 13/16	12.61
39	13 5/16	11 5/16	12 3/16	11 4/16	12	12.01
40	10 4/16	12 14/16	10 10/16	13 3/16	11 10/16	11.71

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C-5

Width in Inches of 25 Grains of Leaming Corn

Ear No.	A	B	C	D	E	Average
1	8	8 13/16	8 8/16	8 2/16	8 8/16	8.38
2	7 8/16	8	8 12/16	6 10/16	7 11/16	7.61
3	9 12/16	8 4/16	9 1/16	8	9 10/16	8.95
4	8 11/16	7 3/16	8 10/16	7 8/16	7 5/16	7.86
5	8 10/16	7 3/16	8 5/16	8 14/16	8 4/16	8.45
6	6 8/16	7 13/16	8 4/16	7 11/16	8 8/16	7.75
7	8 8/16	8 10/16	8	7 14/16	7 8/16	8.10
8	6 9/16	8 14/16	8 8/16	8 12/16	8 2/16	8.16
9	7 2/16	7	7 14/16	8 5/16	7 12/16	7.61
10	7 12/16	7 12/16	9 10/16	8 7/16	8 4/16	8.36
11	8 3/16	8 4/16	7 13/16	7 12/16	7 10/16	7.92
12	7 8/16	7 9/16	8 4/16	8 8/16	8	7.96
13	8	7 6/16	8 5/16	8 2/16	7 6/16	7.83
14	7 14/16	8 3/16	7 3/16	6 10/16	8 2/16	7.41
15	8 4/16	8 4/16	8 3/16	7 14/16	7	7.51
16	8 14/16	7 12/16	8 10/16	8 10/16	7 6/16	8.45
17	8 9/16	9 8/16	8 4/16	7 10/16	7 12/16	8.33
18	7 4/16	7 3/16	8 4/16	7 12/16	8 5/16	7.75
19	8 5/16	8 6/16	8 10/16	8 10/16	8 13/16	8.55
20	7 4/16	7	6 8/16	6 4/16	8	7.00
21	7 11/16	7 10/16	8 10/16	8	9 10/16	8.31
22	7 5/16	7 3/16	8	7 8/16	7 2/16	7.42
23	9	9 14/16	7 6/16	8 10/16	9 2/16	8.80
24	7 14/16	7 4/16	8 13/16	8 5/16	8	8.05
25	8 2/16	8 3/16	9 8/16	7	8 4/16	8.22
26	7 8/16	6 14/16	7 8/16	7 12/16	7 9/16	7.44
27	8	7 15/16	8 6/16	7 8/16	9	8.16
28	6 9/16	8 3/16	7 14/16	7 4/16	7 8/16	7.47
29	7 14/16	7 13/16	7 10/16	7 15/16	9	8.05
30	7 7/16	8	7 2/16	7 7/16	7 10/16	7.75
31	8 2/16	9	9 11/16	9 1/16	9 2/16	9.00
32	8 2/16	7 8/16	8	7 8/16	7 12/16	7.79
33	7 7/16	8	9 8/16	8 14/16	9	8.56
34	8 8/16	7 7/16	7 8/16	7 10/16	8 8/16	7.91
35	8 6/16	8 10/16	7	8 5/16	7 8/16	7.96
36	6 8/16	7 12/16	7 12/16	7 10/16	6 6/16	7.20
37	8 10/16	8 7/16	8 3/16	8 6/16	8	8.30
38	6 7/16	7 15/16	7 7/16	7 9/16	6 8/16	7.37
39	8 7/16	8	8 12/16	8 8/16	7 11/16	8.27
40	6 8/16	7 6/16	7 6/16	7	8	7.25

Description of Ears of Leaming Corn used in the Breeding Experiments in 1908. Plate 1/100 Aere

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C-6

Notes on Ears of Leaming Corn from Breeding Plats, Season 1905.

Ear No	Source of Seed	Length of Ears	Circum. of Ears	No. Rows	Wt. of Ears	Wt. of Grain	% Grain In Ear
Va. 2	Exp. Station Va. J. O. Toland, Ill.	7	7	18	10.06	8.42	83.64
# 4	Va. Exp. Station J. O. Toland, Ill	10.25	7.30	18	18.25	12.30	67.39
5	V. E. S.	8	6.25	12	9.50	6.75	71.05
6	J. O. T.	9.75	7.25	20	17.060	12.06	70.69
7	V. E. S.	7	6	14	8.18	6.66	81.41
8	J. O. T.	9.75	7.25	20	16.60	12.36	74.46
9	V. E. S.	8.75	6.50	16	10.75	9.300	86.51
10	J. O. T.	8.00	7.60	20	16.25	12.60	77.54
11	V. E. S.	7.50	6.75	20	9.500	8.00	84.21
12	J. O. T.	8.75	7.75	20	16.18	12.66	78.68
13	V. E. S.	7.50	6.25	16	8.66	7.18	82.73
14	J. O. T.	9.50	7.25	20	16.06	13.12	81.69
15	V. E. S.	7.50	7.25	20	10.00	8.18	81.83
16	J. O. T.	9.25	7.12	22	16.06	12.88	80.19
17	V. E. S.	8.00	7.00	20	9.88	8.00	80.97
18	J. O. T.	9.25	7.50	20	15.94	13.18	82.64
19	V. E. S.	6.50	6.75	16	8.06	7.00	86.84
20	J. O. T.	9.50	7.50	16	15.94	13.56	85.07
21	V. E. S.	9.25	6.00	16	10.25	8.66	84.48
22	J. O. T.	9.00	7.50	18	15.94	13.06	81.93
23	V. E. S.	7.50	6.50	18	8.75	7.06	80.68
24	J. O. T.	9.00	7.75	22	15.87	13.31	83.86
25	V. E. S.	8.00	6.25	14	8.81	7.37	83.65
26	J. O. T.	9.25	7.37	20	15.87	13.87	86.95
27	V. E. S.	7.50	7.00	200	8.87	7.50	84.55
28	J. O. T.	9.00	7.12	16	15.56	12.25	78.81
29	V. E. S.	7.75	6.75	18	9.87	8.31	84.19
30	J. O. T.	9.25	7.25	18	15.36	13.00	84.55
31	V. E. S.	7.00	6.50	18	7.38	6.25	84.80
32	J. O. T.	8.75	7.12	22	15.00	13.00	86.66
33	V. E. S.	8.50	6.50	18	11.06	9.12	82.45
34	J. O. T.	9.00	7.00	18	14.87	13.31	89.51
35	V. E. S.	7.50	6.12	14	8.12	6.68	82.25
36	J. O. T.	9.00	7.31	18	14.68	13.62	92.76
37	V. E. S.	8.00	6.80	18	6.87	5.68	84.89
38	J. O. T.	8.50	7.50	22	15.62	14.37	92.00
39	V. E. S.	7.50	6.25	14	8.87	7.68	86.58
40	J. O. T.	8.50	7.37	18	14.37	12.94	90.04
		6.75	6.75	18	8.25	7.00	84.96
		8.50	7.62	20	14.37	12.18	84.76

Description of Ears of Leaming Corn used in the Breeding Experiments in 1905. Plats 1/100 Acre

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

Notes on Grains of Leaming Corn

Ear No	Thick-ness 25 Grains	Length 25 Grains	Width 25 Grains	No. Gr. to Oz.	% Protein	% Moisture	% Germination in Field
1	4.30	11.30	8.50	87	7.96	10.92	99
2	4.43	13	8.43	84	7.13	11.55	99
3	3.62	11.12	9.94	87	8.40	11.00	99
4	4.12	13.06	8.12	70	8.65	11/68	90
5	4.30	11.50	8.81	85	8.15	10.70	99
6	4.00	13.30	8.12	76	8.92	11.30	97
7	4.00	11.75	7.87	83	8.62	9.16	93
8	3.96	13.50	8.50	72	8.44	10.58	98
9	3.75	11.43	7.75	114	7.18	10.06	99
10	4.25	13.81	8.18	74	9.91	10.90	97
11	3.50	10.50	8.50	107	8.05	9.33	99
12	4.25	13.12	6.75	86	7.93	11.30	95
13	4.25	11.75	8.43	98	8.88	10.06	90
14	4.25	13.12	8.12	70	9.50	11.64	95
15	4.62	10.43	8.00	93	8.27	9.94	97
16	4.00	14.30	8.75	55	8.33	11.73	88
17	3.83	11.75	8.81	99	8.20	11.30	97
18	4.50	13.30	7.75	74	8.91	11.38	27*
19	4.75	12.00	8.12	81	9.94	10.70	96
20	4.37	14.06	7.81	76	8.20	11.39	50
21	4.25	11.00	8.25	93	7.70	10.01	98
22	4.25	13.87	9.12	72	8.31	11.30	96
23	3.87	10.94	9.50	90	8.58	11.00	96
24	3.81	13.12	9.50	56	9.83	11.65	95
25	3.75	11.87	7.25	106	9.60	10.74	98
26	5.00	12.56	8.75	84	8.88	11.22	96
27	3.75	11.62	7.75	99	8.21	11.29	93
28	4.00	12.50	7.37	87	8.87	11.27	98
29 *	3.87	13.37	7.87	73	8.43	11.10	98
30	4.50	11.75	8.75	75	9.10	11.18	97
32	4.25	13.50	8.12	76	8.89	11.15	96
33	3.75	10.16	9.00	100	8.10	11.25	99
34	4.25	14.22	8.25	72	9.30	11.40	96
35	3.87	10.37	8.37	104	8.20	11.30	98
36	4.62	13.96	8.00	74	7.62	10.35	97
37	4.00	11.75	9.30	83	8.36	10.91	98
38	4.25	14.12	8.00	74	9.31	9.71	94
39	3.62	11.75	8.37	102	7.65	10.58	94
40	4.00	13.50	8.62	65	7.41	10.85	95
* 29	3.75	10.87	8.87	118	8.59	11.00	92

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C-8

Leaming Corn on Breeding Plats--1905

Ear No.	Yield Crop	Yield Stover	Yield Ears	No. Ears Per Acre	No. Good Ears	No. Bad Ears
1	2.67	1.17	1.50	7000	5000	2000
2	2.85	1.29	1.56	7500	6000	1500
3	3.07	1.26	1.81	8000	7000	1000
4	2.55	1.37	1.18	6700	4700	2000
5	2.67	1.07	1.60	8200	6500	1700
6	3.12	1.55	1.57	7000	6300	700
7	2.67	1.10	1.57	7200	6200	1000
8	2.77	1.41	1.36	5800	5000	800
9	2.42	.94	1.48	6900	6600	300
10	3.12	1.57	1.55	7500	5900	1600
11	2.52	.97	1.55	7500	6900	600
12	2.90	1.30	1.60	7500	6100	1400
13	2.77	1.11	1.66	8200	6800	1400
14	2.96	1.18	1.78	7500	6500	1000
15	2.50	1.18	1.32	7800	5200	2600
16	3.10	1.89	1.21	7500	5900	1600
17	2.42	.94	1.48	7600	6000	1600
18	1.77	.75	.92	4800	3700	1100
19	2.67	1.17	1.50	7400	6400	1000
20	2.75	1.50	1.25	6200	5000	1200
21	2.37	.94	1.43	7400	6300	1100
22	2.35	1.15	1.20	6900	5400	1500
23	2.12	.72	1.40	7700	6000	1700
24	2.57	1.30	1.27	6800	5500	1300
25	2.60	1.13	1.47	7700	6200	1500
26	2.85	1.39	1.46	6500	6100	400
27	3.02	1.25	1.77	7700	6600	1100
28	3.10	1.62	1.48	7000	6000	1000
29	2.52	1.01	1.51	7500	6300	1200
30	2.95	1.25	1.70	7800	6600	1200
31	2.67	1.07	1.60	7200	6200	1000
32	3.00	1.50	1.50	6800	6400	400
33	2.72	1.02	1.70	7500	7000	500
34	3.15	1.38	1.77	7500	7000	500
35	2.90	1.10	1.80	8000	7400	600
36	2.92	1.40	1.52	7000	6300	700
37	3.25	1.35	1.90	8000	7500	500
38	3.25	1.74	1.51	6500	5500	1000
39	2.60	1.05	1.55	7200	6400	800
40	2.85	1.47	1.38	6600	6000	600

J. O. Toland, Ind., was the producer of all ears of even numbers and the Va. Exp. Station produced all odd numbered ears. All plats were planted May 3rd and all Virginia seed matured and were harvested September 14th and the Toland seed on September 18th requiring respectively 134 and 138 days to mature. All plats 1/100 Acre

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

G-9

Notes on Leaming Corn from breeding Plats 1905

Ear No	Percent of			Average Wt Ears Oz.		Grade Ears	White		
	Good Ears	POOR Ears	Barren Stalks	All Stalks	Producting Stalks		20 Large Ears	Ealer Ears	Cobs
1	71.43	28.57	12.50	6.00	6.85	9000	60	75	8
2	80.00	20.00	6.75	6.29	6.71	8.60	60	88	0
3	87.50	12.50	0.00	7.25	7.25	9.20	70	80	0
4	70.14	29.86	18.25	5.00	5.97	7.60	39	88	0
5	79.51	20.49	0.00	6.40	6.40	7.60	50	75	0
6	90.00	10.00	12.50	6.30	7.20	9.40	65	88	0
7	86.11	13.89	10.00	6.30	7.00	8.60	45	80	5
8	86.20	13.80	27.50	5.45	7.52	9.48	61	87	0
9	95.60	4.40	13.75	5.95	6.89	8.20	55	60	0
10	78.66	21.34	6.75	6.20	6.61	9.80	61	86	0
11	92.00	8.00	6.75	6.20	6.61	8.20	58	60	5
12	81.33	18.67	6.75	6.40	6.82	9.20	68	86	0
13	82.92	17.08	0.00	6.66	6.66	8.20	60	62	00
14	86.66	13.34	6.75	7.15	7.82	9.80	65	88	4
15	66.66	33.34	3.50	5.30	5.43	7.80	42	78	5
16	78.66	21.34	6.75	6.87	7.33	9.60	58	85	0
17	78.94	21.06	5.00	5.95	6.26	8.00	43	70	0
18	77.08	22.92	40.00	3.70	6.16	8.20	30	88	0
19	86.48	13.52	7.50	6.00	6.48	8.00	49	60	4
20	80.64	19.36	22.50	5.00	6.45	8.60	40	88	0
21	85.13	14.87	7.500	5.75	6.21	8.20	45	65	5
22	78.26	21.470	13.75	4.80	5.56	7.20	35	90	0
23	77.92	22.080	3.750	5.60	5.81	8.00	49	85	0
24	80.88	19.12	15.00	5.10	6.00	8.40	40	91	0
25	80.51	19.49	3.750	5.90	6.13	8.00	55	60	0
26	93.84	6.16	8.750	5.85	7.20	8.80	55	87	0
27	85.71	14.29	3.75	7.10	7.35	9.20	60	63	1
28	85.75	14.29	12.50	5.95	6.80	8.80	50	90	0
29	84.00	16.00	6.75	6.05	6.75	8.40	55	63	0
30	84.61	15.39	3.50	6.80	6.97	9.20	60	85	0
31	86.11	13.89	10.00	6.40	7.11	9.20	48	65	0
32	94.12	5.88	15.00	6.00	7.06	9.20	70	90	0
33	93.33	6.67	6.75	6.80	7.25	9.00	48	65	9
34	93.33	6.67	6.75	7.10	7.44	9.60	75	93	0
35	92.50	7.50	0.00	7.20	7.20	9.20	75	90	0
36	90.00	10.00	12.50	6.10	6.97	9.00	68	91	0
37	93.75	6.25	0.00	7.60	7.60	9.20	75	88	0
38	84.61	15.39	8.75	6.05	7.44	9.20	60	93	0
39	88.88	11.12	10.00	6.20	6.89	9.00	60	90	0
40	90.90	9.10	17.50	5.55	6.72	8.60	58	95	0

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C10

Notes on Leaming Corn from Breeding Plats

Ear No.	Yield Acre		Wt Ears to Bu. Grain	NO. Ears to Bu. Grain	Wt. Grain 70 lb Ears	Ratio Grain to Straw	% of Grain	
	70 lb Ears Bushel	56 lb Grain Bushel					In Ear	In Crop
1	42.85	43.18	69.47	162	56.42	1; .78	80.60	45.19
2	44.81	49.57	63.28	151	61.92	1; .93	88.46	48.68
3	51.78	53.23	68.09	150	57.56	1; .84	82.23	48.47
4	33.92	35.71	66.47	187	58.94	1; 1.37	84.21	39.21
5	45.71	48.44	66.08	169	59.32	1; .79	84.81	50.72
6	45.00	50.12	63.28	139	62.35	1; 1.10	89.11	44.91
7	45.00	46.66	67.76	154	58.06	1; .83	82.98	48.84
8	38.92	40.73	66.64	142	58.59	1; 1.23	83.70	41.09
9	42.50	45.75	64.96	150	60.28	1; .73	86.11	52.82
10	44.28	46.79	66.64	160	59.14	1; 1.19	84.51	41.92
11	44.28	46.53	66.64	161	58.84	1; .74	84.06	51.60
12	45.71	49.68	64.40	151	60.85	1; .94	86.93	48.00
13	47.62	50.71	65.79	162	59.58	1; .78	85.12	51.13
14	51.07	52.10	66.36	139	59.09	1; .78	84.39	50.91
15	37.85	39.53	67.06	197	58.75	1; 1.06	83.50	44.26
16	48.92	51.82	66.14	145	59.29	1; 1.30	84.67	46.77
17	42.50	44.64	66.64	170	58.48	1; .75	84.03	51.54
18	26.42	28.14	65.77	170	59.63	1; .95	85.14	44.36
19	42.85	45.53	65.88	162	59.33	1; .95	85.00	47.86
20	35.71	37.53	66.66	165	58.85	1; 1.42	84.00	44.66
21	41.07	41.96	68.51	176	57.56	1; .80	81.73	49.47
22	34.28	36.60	65.73	189	59.76	1; 1.12	85.20	43.50
23	40.00	41.73	67.10	184	58.40	1; .61	83.46	54.96
24	36.42	39.28	65.08	174	60.25	1; 1.18	86.04	42.60
25	42.14	44.96	65.61	171	59.75	1; .85	85.35	48.42
26	41.78	44.30	66.02	147	59.37	1; 1.12	84.82	43.52
27	50.71	53.89	65.93	143	59.31	1; .83	84.93	49.83
28	42.50	43.75	68.16	160	57.75	1; 1.32	82.15	39.41
29	43.21	46.21	65.30	162	60.03	1; .77	85.75	51.36
30	48.57	50.32	67.56	141	58.00	1; .88	82.88	47.76
31	45.71	46.43	68.92	155	56.87	1; .82	81.25	48.61
32	42.85	42.32	68.03	154	57.58	1; 1.21	82.32	41.16
33	48.57	50.68	67.11	148	58.41	1; .71	83.44	52.05
34	50.71	53.16	66.82	141	58.70	1; .93	83.80	47.22
35	51.42	54.94	65.57	146	59.28	1; .71	85.41	53.00
36	43.57	47.77	63.85	146	61.39	1; 1.05	87.70	45.72
37	54.28	57.26	64.74	137	59.08	1; .84	86.50	50.57
38	43.21	46.43	65.15	140	60.13	1; 1.34	85.95	40.00
39	44.28	47.57	65.19	151	60.13	1; .79	85.90	51.21
40	39.64	40.39	68.70	163	57.06	1; 1.30	81.51	44.35

Source of Seed	Color of Ears	No. of White Cobs	Length of Grains in.	Thickness of Grains in.	Width of Grains in.	% Protein
V. E. S.	55.10	70.75	11.50	3.05	6.87	87.50
J. G. S.	55.90	38.85	11.71	3.92	7.02	108.74

* These averages are of the 40 Ears used in the experiment, 20 from the Virginia Experiment Station and 20 from J. G. S. All Plats

VIRGINIA EXPERIMENT STATION
BLACKSBURG, VA.

C-11

Measurements of Ears and Seed of Leaming Corn Used on Plats 1905

Source of Seed	Average of 20 Ears of Each Kind of Corn Planted						
	Length of Ear Inches	Circumference Ear Inches	No. Rows of Grains	Wt. Ear Oz.	Wt. of Grains Oz.	Percent Grain In Ear	Percent Protein In Grain
V. E. S.	7.70	6.51	16.8	8.65	7.59	83.21	8.38
J. O. T.	9.13	7.35	19.4	15.80	12.97	82.55	8.58

Source of Seed	Average 20 Ears Used						
	Length 20 Grains	Thickness 20 Grains	Width 20 Grains	No. Grains to Oz.	Percentage Moisture	Field Germination	
V. E. S.	11.29	3.98	8.45	85.2	11.12	96.50	
J. O. T.	13.54	4.22	8.25	73.5	11.17	90.00	

Notes on Leaming Corn--Results an Average of the 20 Plats*

Source of Seed	No. Days Maturing	Yield per Acre Tons			Average Wt. Ears Ounces		
		Whole Crop	Stover	Ears	20 Largest	From Producing Stalks	From all Stalks
V. E. S.	134	2.70	1.08	1.58	10.63	8.51	6.33
J. O. T.	138	2.84	1.40	1.44	11.14	8.91	5.88

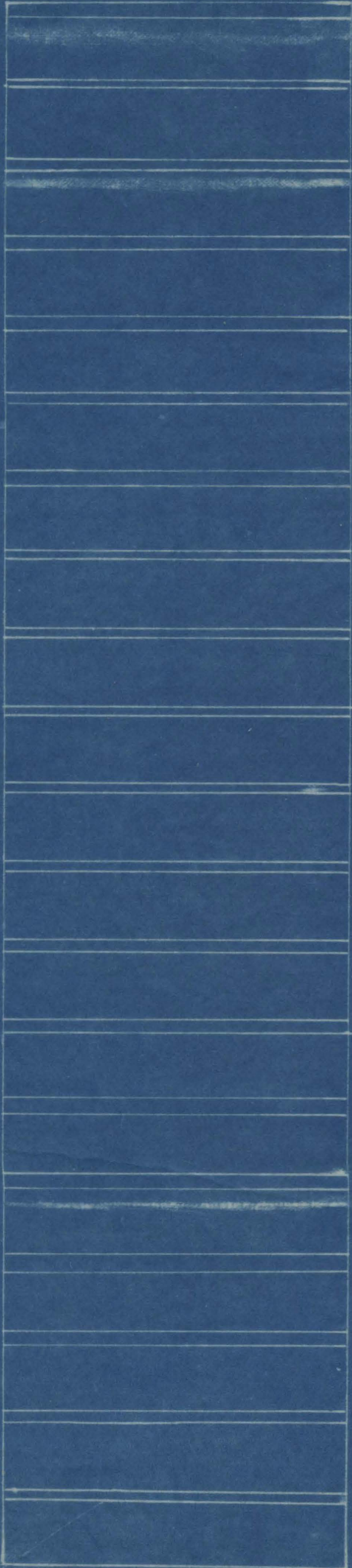
Source of Seed	Yield 70 lbs Ears to Bushel	Grain Bu. 56 lbs Grain to Bushel	Percent of Grain In		Ratio Grain to Stover	Weight Grain in 70 lbs Ears	Lbs Ears To Bu Grain
			Ear	Crop			
V. E. S.	45.21	47.49	84.05	50.08	1; .76	58.77	66.62
J. O. T.	41.19	44.01	84.67	44.79	1;1.33	79.42	66.04

Source of Seed	NO. Ears to Bu. Grain Acre	No. Ears To Acre	No Good Ears	No. Poor Ears	%		% Barren Stalks
					Good Ears	Poor Ears	
V. E. S.	167	7585	6425	1160	84.75	15.25	5.61
J. O. T.	150	6870	5795	1075	84.28	15.72	13.32

Source of Seed	Condi- tion of Crop	Color of Ears %	No. White Cobs	Length of Grains In.	Thickness of Grains In.	Width of Grain In.	NO. Grains To Oz.	% Protein
J. O. T.	55.90	88.85	.20	11.71	3.99	7.69	105.74	8.83

* These averages are of the 40 Ears used in the Experiment, 20 from the Virginia Experiment Station and 20 from J. O. Toland, Ill. All Plats L

METHOD OF LAYING OUT PLATS.



Short $\frac{1}{100}$ Acre.



Long $\frac{1}{10}$ Acre.

MAP
OF
EXPERIMENT PLATS.
Va. Exp. Station.

