HOME COURSE IN SCIENTIFIC AGRICULTURE

SIXTEENTH ARTICLE. FARMERS' CORN TESTS.

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THE purpose of the farmers' corn tests is to emphasize the importance of proper curing, storage and planting of good seed corn and the value of using high yielding varieties. This was accomplished by germination and growing tests on the demonstration farms of each farmer's corn, showing the great losses sustained by farmers with present practices. Samples of farmers' seed corn as planted by them were secured from twenty-five farmers surrounding each demonstration farm. Each ear of this was tested for germination and a record kept of the same at the station at Madison. One hundred and fifty kernels of each farmer's corn were planted in duplicate rows in different parts of one of the demonstration fields.

The land was carefully selected so as to be uniform in fertility and drainage and as free as possible from animal and insect enemies. The corn was planted after May 15 to avoid cold rains and packed soils. The exact stand was determined from the number of stalks appearing from the 150 kernels planted, and later the yield of each man's corn was secured. Samples of station bred, kiln dried corn were planted beside the farmers' corn and were taken as standards for comparison.

Considering the relative yielding power of different varieties, Farmer A. at Oshkosh found that his sample, a mixture of flint and dent, with a stand of 87 per cent, gave a yield of 27.6 bushels per acre, while his neighbor's Golden Glow corn, with a stand of 91

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POOR METHOD OF CURING SEED CORN.

per cent, gave 77.1 bushels, a difference of 49.5 bushels per acre, due to a low yielding variety. At 50 cents per bushel Farmer A. lost $24.75 per acre.

It has been demonstrated that yield corresponds very closely to stand and that stand depends largely upon the vitality of the seed as shown by the germinating test. One of the factors determining the vitality and yield is storage.

The effect of storage of seed corn was strikingly illustrated by two samples of Silver King corn grown side by side at Oshkosh. Farmer B.'s Silver King corn, field cured and stored on the outside of a pump house, gave a stand of 60 per cent and a yield of forty-one bushels per acre. A fire dried sample of Silver King from the station grown next to it, with a stand of 90 per cent, gave a yield of 85.7 bushels per acre. Farmer B. lost forty-four bushels, or $22 per acre—in other words, he secured only half a crop because of poor care of seed.

One bushel of corn will plant six acres. For every bushel of this corn that Farmer B. used he suffered a loss on six acres of $132. Had Farmer B. cured and stored the five bushels of seed corn used by him in 1909 according to the best method he would have increased his income from this thirty acres by $660. This sum therefore represents the value to him of curing five bushels of seed corn, or a value of $132 per bushel.

Considering the average results of the five best and five poorest samples, we find that the five best samples averaged 78.3 bushels, or $39.15 per acre, while the five poorest samples averaged 39.7 bushels, or $19.85. The average loss sustained by each of the farmers using the five poorest samples was therefore $19.30 per acre.

The lowest germination, 1% per cent, was that of corn standing in shock during the winter. This did not dry out well in the fall. The cells of this corn were therefore subject to frequent freezing and thawing while distended with water. As a result of this many of the cells burst, thus killing the germ and lowering the germination. It is noticeable that fire dried corn did not suffer so much, nor corn cured in well ventilated garrets or rooms in houses, the germination of the former being 90 per cent. This corn had the high percentage of moisture removed immediately after coming from the field and could therefore withstand freezing and thawing without injury. The average germination of seed corn throughout the state for 1909-10 as shown by these samples is 65.9 per cent. The average stand secured from this corn was 59.5 per cent.

Seed corn dried with artificial heat in well ventilated rooms during the first two or three weeks after picking gives the highest germination, an average of 91.5 per cent for the two years. Next to this is corn cured in furnace rooms with open windows where the heat was applied immediately after bringing the corn from the field. Well ventilated rooms and garrets with more than one window gave germinations of 86.5 per cent and 84.5 per cent respectively. Corn cured under porches protected from rains gave 70 per cent; corn in barns, tool houses, etc., 69 per cent.

The granary has proved a snare and delusion to many a farmer who thinks this is a good place for drying seed corn. The moisture from the grain in granaries, like the moisture from animals in barns, enters the cells of the corn, and the freezing weather which follows destroys its vitality. Windmills and the outside of buildings and corneribs proved the poorest places to cure seed corn.

In this study of seed curing much corn was found which was destroyed by lying in piles or standing in sacks for a short time after husking. The only safe way of curing seed corn is therefore to place the corn immediately after picking in a well ventilated room and apply artificial heat for from one to three weeks.

The grading of the seed, the calibration of the planter and the weather and soil at planting time are, of course, other factors which have their influence. The greatest variation, a difference of 15 per cent, is found in the case of corn stored in granaries. The average germination of all kinds of corn for 1909-10 is 65.9 per cent, and the average stand is 59.5 per cent, a very close parallel.

The methods for securing good seed corn and obtaining a good stand are, briefly, using a high yielding variety sufficiently early to mature in the locality where grown; selecting only well ripened, perfect ears from vigorous stalks before the entire field is ripe; storing each ear separately; drying with artificial heat in a well ventilated room immediately after picking; testing each ear for germination; grading the seed and calibrating the planter to suit each grade of corn; growing seed corn from well selected seed in seed plots where barren stalks may be removed.

The spacing of rows and hills of corn and the number of kernels per hill vary with latitude and soil fertility and the variety. The richer the soil the closer can the corn be planted.

Special emphasis has been placed upon harrowing corn several times soon after planting and in cultivating corn with single horse cultivators, when the corn is tasseling and setting ears. Care has been exercised at this cultivation to run the cultivators shallow to avoid cutting the roots which at this time come very close to the surface. Shallow, level cultivation practiced at a number of places particularly after showers during the drought of midsummer formed dust mulches and conserved the soil moisture for the use of the corn.

Inquiries at farmers' meetings showed that only 20 per cent of the farmers in the state owned fanning mills. The losses from weed seeds annually introduced on a farm through uncleaned grain would amount to more than the cost of a fanning mill.

A sufficient supply of grains for seed purposes should be carefully cleaned soon after thrashing and stored in small bins, where danger of heating is removed. Too often the seed is prepared immediately before seeding time, taken from the bottom of large bins, where heating and bin burning have lowered the vitality, and sown without cleaning.

"Pin oats," the small kernels of oats, multiply much more rapidly than the larger kernels. Where the small kernels are not removed from the seed by sieves and wind the size of kernel thus rapidly diminishes. Grains thus "run out" by a lack of care and cleaning of the seed rather than from the causes to which this condition is commonly attributed.

At all of the farms the method of treating seed grains with formaldehyde for the eradication of smut was demonstrated by actual application to grain at the meeting and to seed grain used during the season. The solution used consisted of one pint of 40 per cent formaldehyde mixed with thirty-six gallons of water. The solution was placed in a barrel or tank, and the grains placed in gunny sacks were submerged in this for ten minutes. After being removed and allowed to drain for ten minutes the grain was placed in a heap on a barn floor and covered with wet blankets. The formaldehyde gas being held in the pile by the wet blankets makes the treatment more effective. After two hours the grain was spread on the floor and shoveled over at intervals until dry.

Growing tests at various places with seed furnished by the station containing 20 per cent of smut demonstrated clearly that this can all be removed by the treatment. At Oshkosh the field sown with treated seed was entirely free from smut and yielded ten bushels more per acre than an adjoining field sown with untreated seed.

A study and demonstration of crop rotation have been taken up to show that a good system of crop rotation increases plant life, secures a desirable protection of the different crops and supplies good seed beds.

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PIGEON NESTS AND NAPPIES.

Much of the success with squabs depends on how the birds are nested, and it is strange how many do stick to the old style stationary nest when the style we show is so easily made, moved and cleaned.

Here the nests are arranged in batteries set up like a bookcase, the size

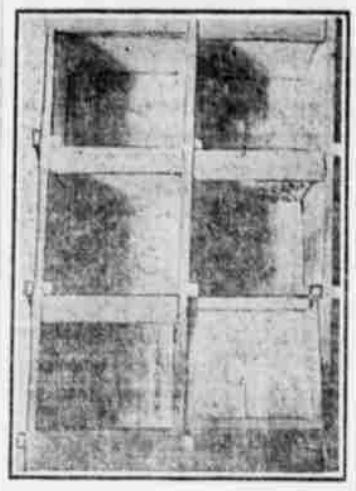

Photo by C. M. Barnitz.

A NEST BATTERY.

of the nest box made to fit the nappy, different sizes of the latter being made for Runts, Carneaux and Homer. The bottom of the nest box pulls out like a drawer, and the whole arrangement can be removed tier by tier and quickly cleaned and sprayed with bug killer and the walls of the loft may be whitewashed.

Thorough cleaning is impossible with the old style nailed up nest boxes, and bugs, especially the bloodsucking ticks, can hide in safety behind them, where no spray can reach.

Then, if it is desired to remove the birds to another building it is no task at all to carry the battery of nests along and set them right up without the trouble of ripping out the old nests or knocking up new. The earthenware nappy is a great convenience.

It holds the nest material right in place, and the eggs and squabs do not

Photo by C. M. Barnitz

SQUABS AND NAPPY.

tumble down on to the floors as with the old careless way, where eggs are so often broken and squabs fall down, get killed or chilled or mixed up.

The parent birds like the nappy and are not so apt to nest on the floor or tear up some other Homer's nest. They stick to the clean, roomy nest, and there are no bugs to drive them out.

The squabs stick to the nappy and are not compelled to sit on a hard, dirty board and thus get sore, swollen hocks and crooked toes.

Then the nappy is so easy to clean. Just a dip in scalding water and all filth and vermin are washed away. These two conveniences cost but little, but count much for success.

DON'TS.

Don't have eyes and see not and ears and hear not. Nature now is at her loveliest. To love nature is to become lovely and to love nature's God.

Don't expect fertile eggs from overfat breeders. Feeding much corn few chicks born.

Don't pack eggs too tight in the incubator. If you equal the capacity advertised you do well, for they are often a sell.

Don't give the chick more eggs than she can cover comfortably. If you crowd the chick you have bad luck.

Don't pile eggs on top of each other in the egg tray. The top eggs overheat, the germs sizzle, then fizzle.

Don't buy a cheap, claptrap incubator and then get a fit if it hatches nit.

Don't inbreed your stock. Breeding in a family circle makes disease targets, especially of turkeys.

Don't use an incubator lamp that's a chronic smoker. But study the same; perhaps you're to blame.