

Bean-growing.

A. B. Cook, of Owosso, Mich., a farmer and an ex-senator, gave a practical talk on bean-growing at the bean-growers' convention, at Ridgetown, May 14th. Twenty years ago there was no official record of beans being grown in Michigan; now it is the leading bean-producing State in the Union. As in Canada, a small belt of country seems to be specially suitable for the crop.

VARIETY.

The small pea-bean is most commonly grown. Its season is shorter, and it is a surer cropper than others, some of which occasionally yield heavier. Seed should be selected from part of field where plants seem healthiest. Some years ago he selected a specially productive plant, and all his crop is now the progeny of that one specimen.

PREPARATION OF SOIL.

A well-drained clover sod is the best possible place on which to plant beans. It should be plowed early in spring, and kept well surface-worked until, at planting time, which is from the 1st to 10th of June, this makes a fine, firm seed-bed. He believed in deep plowing, but at this the audience strongly dissented, Kent growers preferring a moderate depth of 5 to 6 inches. Sow in drills 28 inches apart, and as shallow as possible, and yet have the seed in damp earth, as an even and rapid germination is most desirable. Three pecks of seed per acre is about the right quantity.

FERTILIZERS.

Mr. Cook strongly advised the Kent farmers to begin the use of commercial fertilizers. He had spent \$1,300 or \$1,400 on them, and believed that he had received back the double. He uses a fertilizer drill, and applies about 200 pounds per acre. He warned against a mistake which can be made by using fertilizer, and not getting the land back to sod frequently, so as to keep up the supply of humus.

CULTIVATION.

Before beans are up, cultivation can be begun, said Mr. Cook. To run the drag once lengthwise and once crosswise at that time will kill many weeds, and lessen the work later. After the beans are up, three cultivations will usually be sufficient. The cultivator should not be run deeply, but just deep enough to stir the surface thoroughly.

HARVESTING.

A very good time to begin harvesting beans is when two-thirds of the pods are ripe. Those that are still green will ripen after being pulled. The bean-puller, which pulls and slides two rows together, is followed at once with the side-delivery rake, and this again by men who bunch the beans into forkfuls. When dry enough so that leaves will powder in the fingers, they are hauled in.

To thresh as soon as possible, and sell at once, has been Mr. Cook's practice, and he believes a better average price can be got by doing so than by holding.

With the exception of the deep plowing recommended, and of the use of fertilizer, which has not yet been begun in Kent County, the methods of the best farmers there coincide with those described by Mr. Cook. While no special fertilizer has yet been used by the Ontario bean-growers, yet great interest is taken in the question, as they realize that something ought to be done to check steadily decreasing average yields. Much information is hoped for from the tests to be conducted at the bean experiment station.

Insects and Diseases of the Bean.

(Summary of an address by J. E. Howitt, Lecturer in Botany and Entomology, O.A.C., Guelph, before the Bean-growers' Convention, Ridgetown, May 14th.)

It was fortunate that there were comparatively few insects attacking beans in Canada. In some sections of the United States they had become so numerous that bean-growing had to be discontinued.

BEAN WEEVIL (*Bruchus obtectus*).

The first in importance and destructiveness is the bean weevil, a small, grayish-brown beetle, about half the size of the pea weevil. The larva is a small, grub-like insect, passing its entire life in the bean. Eggs are laid in the pods, and the grubs, on being hatched, penetrate the beans and feed there. The adult insect may appear in the fall, or remain over winter in the bean. An after-brood may be produced in stored beans, if not disturbed. Bean growing has been stopped in sections where the insect became plentiful. The remedy is simple, and consists in fumigating the beans, as soon as possible after threshing, with carbon bisulphide, or in poisoning with seed peas.

PALE-STRIPED FLEA BEETLE.

This little beetle attacks the young bean leaves both above and below, and makes the leaves appear as if full of shot-holes. In some seasons it does considerable damage. As the larva of this

little insect feeds upon the roots of weeds, cleaning these up, and also keeping down rubbish in fence-corners, will lessen their numbers.

CUTWORMS.

These pests do great damage at times to beans, as well as to many other crops. Poisoned baits of green clover or of bran will destroy great numbers. To prepare "poisoned bran mash," mix dry half a pound of Paris green with 50 pounds of bran, then moisten with water which has been sweetened with sugar or molasses till the mixture will crumble through the fingers. This mash is scattered in the evening among the plants, and cutworms are very fond of it.

ANTHRACNOSE OR POD SPOT.

The worst and commonest disease to which beans are liable is pod spot or anthracnose. It is a fungous disease, which passes the winter in the seed. It develops on being planted, and attacks seed leaves, later leaves and pods. It is most serious on the pods, where it develops dark, sunken spots, and, working through, causes discolored or spotted beans. The remedy is to get clean seed. This can be done not by hand picking the grain, but by hand picking the pods, or by securing seed from elsewhere. Spraying a seed plot thoroughly with Bordeaux would also be effective.

BACTERIAL BLIGHT OF BEANS.

This disease also does a large amount of damage at times. It produces brown, dead patches on the leaves, and on the pods also, irregular, watery-looking spots are developed, which become discolored, but never sunken. Seeds, also, are sometimes discolored. The disease is carried over in the seed, in the soil, and in the diseased tops. Rotation of crops and securing seed from clean fields are the main remedies.

BEAN RUST.

This is seldom serious enough to require attention. Most of the so-called bean rust is really anthracnose. Rust attacks the under side of leaves principally, forming small, dark spots. Black spots, with yellow borders, sometimes appear on the upper surface, also. Burning diseased straw, and spraying with Bordeaux, can be practiced in severe cases.

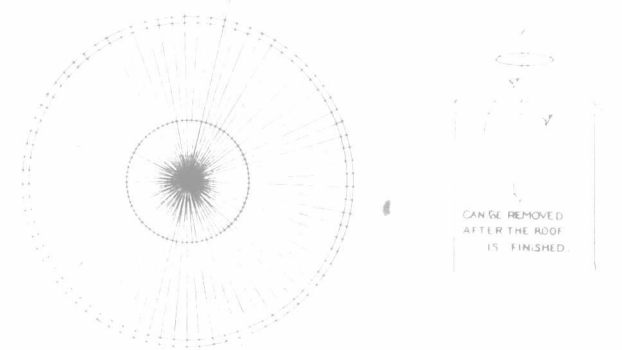
Mr. Howitt recommended that a strict watch be kept for all insects and diseases, and assured remedies applied, all could be controlled. In answer to a question, Mr. Howitt said that no treatment of seed would destroy bacterial blight.

Mr. Newan, a bean-buyer, or Ridgetown, said that the only bean pest of any account in Kent County was the bean weevil.

Another Silo Roof.

Editor "The Farmer's Advocate":

In reading "The Farmer's Advocate," I noticed an inquiry as to silo-roofing, and, having roofed mine last fall by a somewhat different plan than usual, which seems to do this trick very well, and is cheap and, I think, durable, I will describe it. My silo is 11 x 30 feet, stave type. In the accompanying diagram, I have endeavored to show the inside appearance of roof, as well as the center support, which can be removed after the roof is finished. Sheathing was of lumber 1 in. x 8 in. x 10 ft., ripped cornerwise at the saw-mill, making it 1 x 8 in. at one end, and tapered



to nothing at the other. In building the roof, I did not use any rafters, as you will notice in diagram No. 2. For a center support, I used the rim and tire of light wheel, about 4 ft. 8 in. in diameter, and, as the lumber was about 3½ inches wide where it crossed the wheel rim, I wired each board securely to the rim, hammering the wire outside down smoothly. Nearer the top, where the lumber was about one inch wide, I nailed one into the other, so that when finished the one side supported the other. Any person wanting to put a weather-vane on, could leave the hub and spokes in the wheel for a bottom support. At the eaves the lumber was wired to the silo, as well as nailed. I put the wire through holes in the roofing about three inches apart, the ends passing down inside the silo, at 1 foot through the side, one above the top hoop, and the other out under the hoop, and twisted together, which makes blowing off out of the question. The following is an estimate of the cost:

225 ft. of 1-inch hemlock, at \$14 per M.....\$ 3.15
2½ rolls of felt-roofing, at \$2.50 per roll..... 6.88
1 sash and glass60
10 pounds wire, at 3 cents per pound30
1 man, 3 days 6.00

Total\$16.93
Leeds Co., Ont. T. G. K.

Cement Silo with Hollow Wall.

Editor "The Farmer's Advocate":

I have noticed a number of articles appearing in your paper at different times, describing different kinds of silos, which proves that silo-building is interesting a large number of your readers.

As I built a silo during the summer of last year, different from any yet described, I thought it might be of interest, and probably of value, to some of your readers. While they may not build one like mine, yet it may suggest something even better, for I do not consider we have reached perfection in silo construction. Yet, I can honestly state, after eighteen years' experience in feeding silage, and with different kinds of silos, the one I recently erected is proving the most satisfactory.

It was built with the intent to keep out frost, for my past experience with a "tub" and other kinds of wooden silos taught me that the freezing was a great disadvantage. I do not know whether the freezing of the silage affects its feeding value or not. But I do know that it makes it very difficult to take out, and, if fed in any quantity in a frozen condition, is decidedly injurious.

To describe my silo briefly, it is simply a round concrete silo, 14 x 35 feet, built with steel curbs. The difference between this and other concrete silos is that the walls are not entirely solid. They are partly hollow, having a dead-air space. It was built in the following manner: The base is sixteen inches thick, and two and one-half feet high. The inside of base is flush with the rest of silo, and forming part of silo. The curbs were then taken up, and the outer ones placed in five inches. This 11-inch wall was continued five feet. This wall, with the base, making 7½ feet, is under ground, where no frost protection is required, and is solid. When the curbs were taken up, the outside one was again taken in five inches, building a wall of six inches, which was continued fifteen feet.

Elm strips, 3 x 1 inch, sawed nearly through every four inches, were placed around this wall, and slightly tacked with nails, until a wire was placed on outside of strips, when a handy jack wire-stretcher tightened the wire until the elm hoops fitted closely. The ends of the wire were then fastened, holding the hoop in place. These hoops were placed every two and a half feet apart. Hemlock sheathing was then placed around the silo and tacked to these hoops, thus leaving a space of one inch all around the silo. An elm hoop, constructed in the same manner as those already described, was placed around almost even with the top of the eleven-inch wall. On this the outer curb was lowered. On tightening the curb, we found that, as the lumber was not all the same thickness, and the curbs not exactly true, we had not an even space of three inches, as was desired. The curbs, however, were tightened a little away from the eleven-inch wall in places, to give the desired thickness. It would have been better if the solid eleven-inch wall had been one inch thicker.

This three-inch wall of concrete was continued until it was even with the other six-inch wall. They were then joined together, making one solid wall, tapering to about seven inches at the top.

The lumber, previous to being placed in position, was well soaked with water, and allowed to swell all that it would. It was placed no higher around silo than we expected we would be able to build concrete wall during that day. Strands of No. 9 soft wire were placed in outer three-inch wall about a foot apart. The gravel for the same passed through a screen previous to being used. Wire was also used in the other wall of silo. Field stones were used in building the lower 7½ foot wall, and the top twelve and one-half foot wall. I did not consider it necessary to continue the air-space any higher, as a silo of this height will easily settle eight feet if filled, and I expect to feed out more than four feet of silage before the cold weather sets in. I had no trouble with frost during cold weather of last winter. The following is estimate of cost:

To contractor, for building\$ 95.00
Wire for reinforcing 4.50
42 barrels of cement, at \$1.35 56.70
700 feet hemlock, at \$15 per M 10.50
50 feet elm, at \$20 per M 1.80
50 yards gravel, at 25c. per yard 12.50
Hauling gravel 20.00
Board 4 men, 10 days 22.00

Total\$223.00

The 42 barrels of cement do not include amount used in plastering. W. B. STRUTHERS,
Perth Co., Ont.

(Note.—Why not hollow cement block?—Editor.)

Editor "The Farmer's Advocate":

Of the soil, this is any crop we start was that therefore trade. piece of light drive to manure to every piece of soil, I might have a piece of soil, will have a load of harvest. ing: One part to the a cows. this mix seedling. our sup- feed, we time, as increased the fence to wasteful than the We always think is allowed. Better to much feed say, the fodder c silage is another hogs and has grown largest at the h for a long year, and spring j neglecting mostly a could al hogs. should b seemle being the stall in turnip and can rate of more th need this feeder, a the lamb first wee as it is. Septemb clover a if you w on a co pounds. liber co able to very q when th laubs h left in f off, or a they can. The a and one stored n grain, ha It is following fying. brother crops, an ducing c from. Prince

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