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The Oat Crop.

EXTRACTS FROM AN ADDRESS BY S. A. BEDFORD.

Oats are a despised crop for the simple reason that, as a rule, they are not what might be termed a *cash* crop, and, as a result, are sown on poorly-prepared, dirty land, and often late in the season. Oats should be sown in good time, one reason being that late-sown oats rust readily. The soil should be strong and moist. The variety to be selected as seed should depend on its characteristics, a medium oat with a thin hull, bright stiff straw being preferable. It is not advisable to select an oat having a coarse straw, as it is more liable to rust; neither should the straw be too fine, as it crinkles or breaks down easily. The oats selected for seed should be taken from the top of the bin, as oats heat readily, thus destroying their germinating power. Sow *always* oats of good quality. In this connection it is a good plan to sow sufficient for next year's seed on backsetting. All seed used should be well cleaned, especial care being taken to get rid of noxious weed seeds. Ball mustard is very common in the western oats being offered for sale this season. A good fanning mill will take this small round black seed out. It is practically impossible to get the wild oats out of seed oats of the tame variety.

A Yankee's Opinion.

Being a new subscriber to the ADVOCATE, have given it a careful reading. It seems to be O. K., but I cannot agree with S. A. Bedford on sowing 40 to 80 pounds of flax per acre where the crop is not intended for fiber, but for seed. The most reliable experience and experiments in N. Dakota place the amount of seed required at one bushel for three acres. The flax plant does not stool at the root as does other grain, but branches at the top as does a bush. The sowing of too much seed renders the plants too thick, and retards the branching and greatly hinders the formation of seed bulbs. Then, too, the heavily-seeded crop is much more difficult to harvest, there being a greater number of plants to be cut, while experience demonstrates that it does not yield as much seed, for reasons given above. Some say, sow flax very shallow, but from observation the past dry season, I would say, don't sow it too shallow.

ERNEST HUTTER.
North Dakota.

Smut.

There has not been very much complaint of late about smut; in many districts there was little or no damage done last season: but let no one be the less vigilant in treating the seed grain on that account. The smut spore seems always to be present, and only requires suitable conditions and neglect of precautionary measures on the part of the farmer to make itself felt on the market value and yield per acre of the grain. Chief Grain Inspector Horn considers that on the average smut does more damage to the grain crop of the West than frost. While a good deal can be done to avert danger from frost, it is not wholly under our control: but the man who grows smutty grain has himself to blame for it, as it can be prevented with little outlay of expense or trouble. Smut is a fungus, the spores (or seeds) of which are very minute and attach themselves to the kernels of grain. Even if there is no smut in the crop, the grain may become contaminated by contact with it in threshing machine, elevator, granary, bags, etc. The same heat and moisture that causes the seed to germinate in the soil causes the smut spore to grow also, and it immediately attacks the young plant, entering its tissues, where it lives and grows and in time reproduces itself in the kernel of grain. Treating the seed with bluestone or other effective remedy simply destroys the smut spores that may be attached to the seed. Methods of treatment are so simple and so well known that repetition is unnecessary; but let no one neglect to apply preventive measures. The following is the report of the smut tests at the Brandon Experimental Farm, by which it will be seen that bluestone treatment is quite effectual for wheat and formalin for oats:

THE TREATMENT OF GRAIN FOR SMUT.

For some unexplained reason, this fungus was almost entirely absent in the wheat crop of 1899 on the Experimental Farm. Even the most smutty sample procurable failed to produce any noticeable quantity of smut. In 1900, however, very satisfactory results have been obtained. As bluestone has increased in price considerably during the past year, and in some parts of the Province has been difficult to obtain, a test has been made with formalin, and, as will be seen from the accompanying table, the results have been excellent. The wheat used for seed was a very smutty sample.

RED FIFE WHEAT, 1900.

How Treated.	Good Heads.	Smut Heads.
Not treated	452	59
Steeped 5 minutes, 4½ ozs. formalin to 10 gals. water	550	0
Steeped 15 minutes, 4½ ozs. formalin to 10 gals. water.	529	0
Steeped 1 hour, 4½ ozs. formalin to 10 gals. water	531	0
Sprinkled, 4½ ozs. formalin to 10 gals. water	528	0
Sprinkled, 9 ozs. formalin to 10 gals. water	474	0
Sprinkled, 1 pound bluestone to 1 pail water to 8 bushels of wheat	481	0
Steeped, 1 pound bluestone to 3 pails water to 8 bushels of wheat	433	2
Treated with Massal powder	504	0

Results of tests for the five years previous to 1899 show the difference in number of smutty heads in treated and untreated wheat:

Year.	Treated.	Untreated.
1898	0	151
1897	84	435
1896	32	3,685
1894	0	112
1893	10	396

TEST OF SMUT PREVENTIVES FOR OATS, 1900.

The seed for this test was a very smutty sample, as is evident from the resultant fifty-one per cent. of smut from the untreated seed.

Formalin has again proven itself an exceedingly useful preparation for this purpose, and its general use each year would save thousands of dollars to the Province.

Massal powder has again proven itself useless as a treatment for oats.

DONCASTER PRIZE OATS, 1900.

How Treated.	Good Heads.	Smut Heads.
Not treated	428	66
Steeped 5 minutes, 4½ ozs. formalin to 10 gals. water	233	3
Steeped 15 minutes, 4½ ozs. formalin to 10 gals. water	188	5
Steeped 1 hour, 4½ ozs. formalin to 10 gals. water	241	0
Sprinkled, 4½ ozs. formalin to 10 gals. water	196	5
Sprinkled, 9 ozs. formalin to 10 gals. water,	262	0
Treated with Massal powder	186	108

When a large quantity of wheat has to be treated, it is not always convenient to have boiling water to dissolve the bluestone. Mr. Wm. Sharman gives us the following plan, which he discovered by a mere accident a year or so ago, and has found quite as effective for dissolving bluestone as boiling water. Place the amount of bluestone required to make a barrel of pickle in an old sack and suspend the sack by a stick across the top of the barrel filled with water so that the bluestone is all just under the surface of the water. Thus suspended, the bluestone will dissolve completely in half a day; whereas, if allowed to lie in the bottom of the barrel it is almost impossible to [illegible]

The Ottawa Tuberculosis Conference.

EDITORIAL CORRESPONDENCE BY A MEMBER OF OUR STAFF.

1st. Consumption is a contagious disease communicated from one person to another by means of germs.

2nd. It is not hereditary, but the weak and poorly nourished offer less resistance to its attack.

3rd. Germs are conveyed from diseased lungs in moist particles expelled in breathing and in the matter (sputa) cast off in coughing, which, when dried, floats like dust particles in the air.

4th. Its spread can be checked by separating the diseased from the healthy, and preventing the spread of the germs.

5th. In its earlier stages it is curable.

6th. The best preventive and remedial measures for the individual are pure air, sunlight and ample nourishment.

7th. The immediate needs in the crusade against consumption are to educate the people on the foregoing six points, and provide sanatoria for cases in earlier stages and hospitals for advanced cases.

The foregoing are the practical deductions drawn from the papers, addresses and discussions at the conference for the prevention of tuberculosis, on February 14th, in the Ottawa Normal School, to all of which we attentively listened. Exclusive of the Normal School students in the galleries, over one hundred persons were present, representing all the Provinces of Canada, though the bulk were from the Ottawa and Montreal districts, and mainly medical and professional men. To the Rev. Dr. Eby, formerly a well-know Methodist missionary, is chiefly due the credit of the conference, which one enthusiastic physician declared at its close to be the most important event in Canada since Confederation. At the inaugural session, His Excellency the Governor-General, Earl Minto, who has given it his cordial support, delivered the opening address, wishing the movement godspeed. Sir James A Grant, M. D., Ottawa, ably discharged the duties of chairman. The various printed resolutions were introduced by papers or prearranged addresses. The lack of sufficient opportunity for questioning speakers on doubtful points was regrettable, though it saved time, but it would have been preferable to have covered fewer points and done it more thoroughly.

The first motion cited the magnitude of the disease, causing probably one-fifth of the deaths in the Dominion, or 8,000 per year, which, estimated, as some have coldly put it, said Dr. A. J. Richer, of Montreal, at $1,000 each, means an annual aggregate loss of $8,000,000. Hence the need and demand for individual and organized effort, and for aid from governments and municipalities. A great deal was said about how the microscopic germs are spread. Sleeping-cars, in which so many consumptives travel, were especially denounced by several as a prolific source of disease. Consumptives occupying the same rooms with others: indiscriminate spitting in homes, on the street, in public halls, hotels, etc., and carelessness regarding the sputum, which should go into spittoons containing antseptics or be burned: bank bills carried the germs, and the long trains ladies wear, and street-railway sweepers, whirl them about. There was unanimity that the disease was not hereditary, but contagious, and curable in the early stages. It was not confined to lungs, but appeared in bowels, liver, bones, and even on the lip. Nearly every man who spoke bore testimony to the remedial efficacy of pure air, sunlight and wholesome food, and one declared that the day of remedies like Scott's Emulsion had passed away.

Again and again the appalling fact was disclosed that practically every hospital in the country has shut its doors upon the tuberculous patient, so that the very first and most important work this new organization can do is to devise plans for sanatoria of moderate cost, and get individual, municipal and government machinery at work to provide for their erection.

Sir William Hingston, M. D., Senator, Montreal, pointed out that the disease was less prevalent in the country than in the cities, and discredited the idea of people sending their friends to Florida or other distant places to die.

Dr. Lofferty, of Calgary, said Alberta was being thronged in places with consumptives from other provinces, attracted by the superior climate. Hence the Dominion Government should aid in the erection and control of sanatoria there.

Hon. Dr. Guerin, of Quebec, said the autopsies made in a long hospital practice demonstrated to him that consumption was actually curable. The lungs of patients dying of other diseases showed that the former had been arrested and cured. Great corporations should be compelled to take better sanitary care of their employees, and insurance companies would benefit by helping the present movement.

James Stewart, M. D., Professor of Medicine in McGill University, declared his faith in the spread of knowledge in the press of the nature of the disease, but protested against the publication of quack advertisements. Sanatorium treatment was the best, and had proved wonderfully successful in Germany. Cures were effected in about three months, 75 per cent. of workers being able to resume their work. Insurance companies there treat their tuberculous insured in sanatoria.

Hon. Dr. Borden, Minister of Militia, favored