PRELIMINARY WORK ON OAT SMUT IN BOX BUTTE COUNTY

The Box Butte Farmers' Association realizing that there was more or less loss by oat smut in Box Butte county every year, decided to work along this line. The first step was taken on March 23, when the county agent sent out a circular letter to the majority of farmers throughout the county calling attention and giving directions for the treatment of seed oats to prevent smut. The letter also enclosed a blank to be filled in as to the number of acres the cooperators would treat and leave untreated. An envelope was enclosed for the return of this blank to the office of the county agent. As result of this circular letter several farmers throughout the county either treated all of their oats or at least a portion. The cooperators were asked to leave a portion untreated a nd to treat another portion so as to carry on a cooperative demonstration. Many men treated all of their oats, while others treated a part in one field that had been cropped different than the other untreated portion on another field.

This would not permit a bushel per acre comparison, but nevertheless has shown the effectiveness at any rate of formalin treatment for oat smut. A few men were found whose treated portion and untreated portion were of the same variety on the same kind of land, cropped previously in the same manner.

These fields were carefully measured by the county agent with the assistance of the instructor of Agriculture from the Alliance high school. At present time one or two of the demonstration fields have not been threshed, while in other cases damage from stock, trouble in threshing, etc., have made it impossible to get a correct demonstration on the bushel per acre basis. Oat smut counts were made on 118 untreated fields in the county and sixteen treated fields. This shows the extent to which oat smut was prevalent in Box Butte county, and also shows the effectiveness of the formalin treatment for oat smut as done by the cooperators themselves.

It was the observation of the county agent as well as all of the cooperators that the treated oats was either entirely free from smut or else a very low per cent as compared to the untreated oats. In addition to this the treated oats showed a stronger vitality than the untreated oats. On the ordinary year the plants affected with smut are much more stnuted and consequently not so plainly visible. They are found lower down than the healthy oats.

The fact that smut was entirely eliminated in many of the treated portions of the field while the untreated portion showed a high per cent of smut has demonstrated to many of the cooperators that smut is a disease controllable by proper treatment and not a pure development of the weather. One cooperator stated that a conservative estimate on the amount he saved by treating his oats for smut would be at least $150. At a later date when the result from threshing of the treated and untreated oats are in, a more complete report will be made.

This work was not carried on under project form during 1915 but will undoubtedly be carried on as one of the active projects for 1916.

BOX BUTTE COUNTY OAT SMUT DATA

Per Cent Smut in Oats in Untreated Fields by Precincts

PRECINCT	NO. FIELDS	PERCENT SMUT
Lawn	6	7.80
Dorsey	16	5.34
Running Water	6	9.13
Liberty	2	7.15
Nonpareil	12	5.64
Box Butte	28	6.53
Snake Creek	0	0
Wright	11	13.47
Lake	20	8.24
Boyd	17	4.43

Per Cent Smut in Fields Treated for Smut

	NAME	PERCENT SMUT
1.	J. A. Keegan	0
2.	L. D. Blair	1.4
3.	Powell and Atz	1.1
4.	D. E. Purinton	0
5.	*F. H. Kaufford	0
6.	*F. H. Kaufford	0
7.	*Robert Anderson	.1
8.	*Robert Anderson	.1
9.	Theo. Colvin	0
10.	E. W. Purinton	0
11.	F. H. Nason	0
12.	J. L. Wiltsey	0
13.	*A. S. Enyeart	0
14.	*A. S. Enyeart	0
15.	*A. S. Enyeart	0
16.	J. B. Leith	0

*Total Field Treated.

OAT SMUT COMPARISONS—TREATED VS. UNTREATED

	NAME	PERCENT SMUT TREATED	UNTREATED
1.	J. A. Keegan	.0	2.0
2.	L. D. Blair	1.4	8.6
3.	Powell and Atz	1.1	33.1
4.	D. E. Purinton	.0	7.3
5.	Robert Anderson	.1	11.1
6.	Theo. Colvin	.0	6.4
7.	E. W. Purinton	.0	1.4
8.	F. H. Nason	.0	1.1
9.	J. L. Wiltsey	.0	.6
10.	J. B. Leith	.0	6.8

Oat Smut Totals in Box Butte County

	No. Fields	Percent Smut
Untreated Fields	118	5.73
Treated Fields	16	.16

	Treated	Untreated
Direct comparisons of Treated and Untreated Fields	.26	7.84

CO-OPERATIVE FIELD TEST OF NORTHERN VS. HOME GROWN EARLY OHIOS

In eastern Nebraska it is easily demonstrated that the Northern grown Early Ohio seed potatoes give greater profits than the Native Ohios.

This is something that had not been tested systematically in this county, or under western Nebraska conditions. Northern Ohios normally cost when laid down here about twice the price of the native Ohio seed potatoes. Furthermore, it was known that these Northern seed potatoes were practically no more free from disease than the native Ohios.

The Northern grown potatoes in general represent a truer Early Ohio shape and type than the native potatoes. But the real questions confronting the potato growers of this county were whether is was profitable to pay the difference in price of the seed, and would the difference in yield and shape warrant this practice? The economic question facing the Box Butte Farmers' Association was: Could they permit the constant shipping in of disease, when one object the organization had in view was the elimination of as much of the potato disease as possible?

A car load of Northern potatoes was shipped into the county by a potato dealer. In view of these questions it was decided to test the northern and home grown potatoes as to yield. This being simply a test, no definite conclusions could be made from just one year's work as to yields of each.

It must be remembered that this was an abnormal year so far as rainfall is concerned. It has been a season more nearly like the elimate the northern potatoes are adapted to. On a dry or normal year the yield of native Ohios might be much better than the northern seed.

It has been demonstrated however that the northern seed produced potatoes of better shape. This same thing can be accomplished by hill selection of our native potatoes, for seed purposes. The growers however received the same price for their produce of each kind of seed.

The most important demonstration was that the northern potatoes in the field showed all diseases common to Box Butte potatoes. In general, there was more bacterial wilt in the northern than in the native potatoes. This means that for our potato growers to take the chances on paying higher prices for northern seed, the non-advance in eradication of potato diseases, there must be a considerable difference in yield to make the use of northern seed a profitable practice.

CO-OPERATIVE FIELD TEST, NORTHERN VS. NATIVE OHIOS

Box Butte Farmers' Ass'n cooperating with Extension Dept. Nebraska College Agriculture and United States Dept. of Agriculture:

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