

In terms of loss, the average loss by provinces, including all crops attacked by grasshoppers, which is to be expected in 1934 if no control were undertaken, may be estimated approximately as follows: Manitoba, 25 per cent; Saskatchewan, 60 per cent; Alberta, 40 per cent. With the control campaigns projected for the year we expect to reduce this loss to well below 10 per cent.

Hon. Mr. RILEY: Is that 40 per cent of the entire acreage?

Dr. BARTON: Of the crop.

The CHAIRMAN: Of the total crops of the provinces or only of the infested areas?

Dr. BARTON: The total crops of the provinces.

Hon. Mr. BURNS: That would be 40 per cent?

Dr. BARTON: On the basis of acreage.

Hon. Mr. BUCHANAN: You mean it is the area infested by grasshoppers?

Dr. BARTON: This year, if no control measure were taken at all, that is the estimated loss which might accrue. But with control measures it is hoped to reduce this loss well below 10 per cent. That is problematical, of course.

Hon. Mr. BURNS: How would the grasshopper situation affect the cattle and sheep?

Dr. BARTON: That includes all crops, of course,—not only wheat but other grains, and pasture.

Now, with regard to organization, all three provinces are well organized this year. For example, Saskatchewan is thoroughly organized for a complete campaign. There are on hand there 180,000 gallons of sodium arsenite, that is 100 tank cars of it; 900 cars of bran, and 1,200 cars of sawdust; and it was reported that by the 1st of March, 1,200 local committees had been formed.

Now we come to the method of control. The cultural practices essential to control in a large scale outbreak like the present one are as follows:

(a) Early seeding. That is to advance the growth as far as possible before the attack begins.

(b) Seeding fallow land or stubble only after ploughing. The bulk of the eggs are laid in stubble land. The object of the ploughing is to bury the eggs and to kill the young hoppers hatching from them.

(c) Ploughing guard strips around stubble to be fallowed. This is to provide a place upon which to poison the hoppers coming from the old stubble.

(d) Ploughing stubble, in summer fallowing, in strips and poisoning the grasshoppers on the strips. This crowds the grasshoppers on to the unploughed part, where they should be poisoned.

(e) Killing eggs in infested land by very early and very shallow cultivation, that is by exposing the eggs to sun and wind, which kills them.

Now, if these cultural practices are followed, as it is expected they will be in large measure, they should have some effect in restricting the area of land that will be cropped.

The backbone of the control, however, which is essential upon every threatened acre is the poisoning of the grasshoppers in the young stages, with poisoned bran bait made up of the following ingredients: 50 pounds of bran 50 pounds of sawdust, one quart of sodium arsenite, and ten to twelve gallons of water. This is to be scattered broadcast by hand wherever the hoppers are present in numbers, preferably in the early part of the day when the sun is shining and when the temperature is not below 68 degrees fahrenheit and not above 85 degrees fahrenheit, these being the temperatures between which the grasshoppers feed. The application and the distribution of the bait really determines the use that the grasshoppers will make of it. A lot of mistakes have been made where organization was not as thorough as it should have been in that regard, and consequently there has been much wastage and lack of results.