

SUMMARY

The Field Mice during 1931

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There is given a detailed description of the damage caused by field mice in the Jewish settlements of the Esdraelon Valley during the years 1929—1930 and 1930—1931 and the methods of control carried out by the Extension Service. A map is traced indicating the amount of infestation and its spread in the valley, the relationship of the attack of the mice to the climatic conditions, methods of control, their quantity per area, and length of time of the campaign. As a result of the past year's work, we arrived at the following conclusions:

During the years 1930—1931, the Extension Division carried on a campaign against field mice on an approximate area of 160,000 dunam. 3,700 kilograms of „Zelio” grains were distributed in three applications; 7,440 cartridges of „Hora” were fumigated and pathogenic organisms of mouse typhus were spread over this area. About 5,500 working days were required to do this work in the various settlements.

Zelio:

(1) Without any doubt, Zelio grains, when employed at the right time and the proper quantities, serve as an active means of control and are capable of saving the crop from the mice even during heavily infested years and reducing their numbers in the fields, bringing them within the boundaries where it is easy to keep them in check.

(2) From experiments we learn that the control of a dunam of land at the present price of Zelio, which amounts to 300 L.P.

per ton, during a heavily infested year, will amount to from 33—34 mils and during a medium year to 23 mils.

(3) The Zelio grains should be distributed in the infested year and in the year following as outlined below:

(a) The first distribution should be made toward the end of the summer over the entire area of cultivated and irrigated, as well as uncultivated land.

(b) The second distribution should be made right after the sprouting of the new plants in the cultivated and irrigated and non-cultivated fields. The grains should be placed in the holes, which have been opened again after the first rains.

(c) The campaign should be continued partially in the infested fields or wherever there is a concentration of mice, as the case may be. This latter application should be continued until the heavy rains.

(d) The last application should be made during the months of February and March; a concentrated distribution of grains should be made on all the areas, whether cultivated or not cultivated.

(4) This year it is of importance that there should be in the possession of the farmers one ton and a half of Zelio grains. It is necessary for this purpose to come in contact with the competent institutions, regardless of the fact that no extraordinary damage can be forecast for the year 1932.

The Virus of Mouse Typhus:

(1) It is uncertain whether this virus had any influence upon the mortality of the mice, although there was an impression, which is quite biased, that there were positive results in the fields. On the other hand, we noticed that in the irrigated fields, where the influence of the Zelio ceased, the virus, too, had no effect. This problem needs more study before a definite statement can be made.

(2) In case, however, the virus proves to be of any value, it will then be the cheapest means of control, because two applications amount to about 3 mils per dunam.

(3) Perhaps, because of its cheapness, it would pay to continue this method even though there are no definite proofs of its effectiveness for the reason that it is possible to carry out this application on a large scale with little loss of time.

Hora:

(1) In a soil which is not cracked, this material gives a 100% mortality. It is a very important means of control but it is very expensive. In an irrigated field, during an infested year when four cartridges are required for one dunam, its expense would amount to 135 mils; in a year of medium infestation, when two cartridges are required for one dunam, it amounts to 65 mils.

(2) For this reason it is advisable to use in the irrigated soil first Zelio, and only after these grains cease to show a marked effect, Hora cartridges can be used. However, it is advisable to attempt to obtain these cartridges at a lower rate, or to obtain from other concerns other cartridges, which are similar in their composition to Hora, such as Lepit in Germany, which, however, burn slower and amount to less.

(3) The settlements which raise hay by means of irrigation must, from now on, prepare cartridges of Hora and begin the campaign against mice in time — at the end of August and September, by means of Zelio grains, and in October with Hora.

Concentration of the Fields; Hastening the Harvest; and the Ploughing of the Winter Crop Fields:

1) This year, also, the experiments showed that it is not advisable to have the fields scattered in small plots but rather to concentrate them in large areas. The campaign against the mice is thereby made easier; the attack of the mice is not so heavy; and in case of emergency, it is easy to gather the crop more expeditiously.

2) A great asset in the saving of the crop is the organization of the reaping and harvesting in the fields. If this work is well organized, it serves, sometimes, as the main factor in bringing the crop to its maximum economic value. In such cases the "COMBINE" which accomplished about 15—20 tons of grains per day proved to be of extraordinary value.

3) In years of heavy infestation, it is very important to plough the fields of the winter crops immediately after the harvest (this order has also been issued this year), and to observe the activities of the mice in those fields and if it is necessary, it is advisable to scatter in the open holes Zelio

grains. The experiment showed that in these fields, the activities of the mice are stronger.

Mites:

It is very important to establish the influence of mites upon the mortality of the mice. This year these creatures appeared in extraordinarily great numbers. It also brought about anaplasmosis fever in the herds of cows. In those fields mice were found, dead, as well as living, to which mites were attached. It is worth while studying this phenomenon and explaining it fundamentally. Perhaps the relationship between the mouse and its mites will offer us some new hints for its control.

Demonstration Regarding the Fattening of Calves with Skimmed Milk

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The possibilities of exploiting the skimmed milk under the conditions that exist today in the dairy market are decreasing and the use of this product in the settlements themselves is still limited. A small part of it serves as food for chicks and part of it as food for men. It is important, therefore, to seek some new means of exploiting the skimmed milk and one way is using it as a food in feeding calves.

As a matter of fact, many of the new settlements started to feed their calves with skimmed milk. The amount of milk for one calf in many settlements amounts to 200—250 litres of full milk and from 600—800 litres of skimmed milk.

By means of preparing the total number of male calves for the slaughter house, which reaches 50% of all the newborn, we seek an additional means of exploiting the skimmed milk, and at the same time increasing the production of meats in the settlements for their own consumption and also for that of the market. We, therefore, have two questions in view: 1) Whether it is possible to fat calves for the slaughter house with skimmed milk; and, 2) What will be the income of the skimmed milk when it serves as food for the calves.

The results of the experiment shows that the weight of the meat was 59% of the weight of the living calves before they were slaughtered.