

## SUMMARY

### Ensilage of Maize at Merhavia

by S. Zemach

Director of Extension Division

1. Forty years ago, pit-silos were built at the agricultural school of Mikveh Israel by Mr. Niego who was then Director of the School. In these pit-silos maize was ensilaged during ten years, but owing to many defects of the silage, the work was stopped.

Four years ago, the Colonisation Department of the Zionist Executive constructed at Merhavia an American Tower-Silo,  $10\frac{1}{2}$  metres high with a diameter of  $5\frac{1}{2}$  metres (see Fig. 1, p. 110). This Silo was handed over to the Extension Division for experimental purposes.

2. The filling of the Silo began on the 5th of August 1929. 130 wagons each containing about 900 to 1000 kilos. of green maize were put into the Silo. The maize was cut up in a special silage cutter (see Fig. 3, p. 114) and filling operations lasted for 8 days.

3. The average water content of the Green Maize was 68%. Two varieties of corn, "Prolific" and "Local" were ensilaged (see Table A, p. 113). During fermentation the temperature in the upper layer was  $50^{\circ}\text{C}$ . and the degree of acidity rather low (0.02—0.07% acetic acid). This silage can be considered as a "sweet" one. In the lower layers the degree of acidity was higher (0.14—0.32% acetic acid) and the temperature as low as  $30^{\circ}$  to  $34^{\circ}\text{C}$ ., so that this is an "acid" yellow-brown silage. Butyric acid was entirely absent. (see Table B, p. 117).

4. The silage was fed to 54 head of cattle at the cow-barn of Merhavia during 165 days. All the cows ate it readily and improved in appearance. Feeding the silage commenced at

the beginning of October and ended in the last days of March, i. e. during the whole period in which there is a lack of green fodder or any other succulent feed.

The ration was 15 kgs. per day for each adult dairy-cow, 12 kgs. for heifers and 3 kgs. for calves.

5. Samples of corn silage taken from various layers were analysed, and they were found to contain on the average 37% of dry matter, 17% starch-value, 0.7% digestible protein (see Tables C & D, p. 118).

6. A feeding experiment with corn silage was carried out at Merhavia which proved that 15 kgs. of corn silage replace in the ration 5 kgs. of usual vetch-hay and 0.5 kgs of sesame cake. On this basis the value of one ton of corn silage amounts to 1400 mils. (see Table E, p. 120).

7. Tables are published giving the approximate capacity of cylindrical silos and their diameter in relation to the number of cows fed.

8. Our conclusions are that silos may be constructed without any doubt for the large co-operative settlements. On the other hand, experiments have still to be made in order to find out the type of silo suitable for the smaller settlements: whether pits, or small tower-silos, or steel-silos (see Fig. 6, p. 124).

9. Directions are given in regard to the making of silage.

10. For the ensilage of fodders rich in protein (vetch, clover, lucerne, etc.) further investigations are still to be made, in order to examine the true protein losses during fermentation.

### **Cephalaria Syriaca Schrad. — Taradan**

by Dr. L. Pinner

Taradan is found chiefly in the Gaza district, the Haifa-Acre plain and the Vale of Esdraelon, where the Mughari and the Nursi wheat respectively are grown. In these districts it is the most noxious wheat weed.

Besides the damage caused to the growing wheat, a considerable part of the *Cephalaria* seeds remains as admixture in the grain, heavily depreciating the market value. A percentage