

### IMPORTANCE OF BEES IN THE PRODUCTION OF WATERMELONS

Most varieties of watermelons are monoecious, the pistillate and staminate flowers being borne in separate axils of the leaves. In a few varieties, however, there may be hermoproditic and staminate flowers. As with many of our crops, these flowers are pollinated chiefly if not altogether by bees. They, therefore, are a very necessary factor in the production of a melon crop, and the number of them and their activity may directly determine the size of the yield of melons. This seems to have been well illustrated at Groveland, Florida, during the 1935 season. At that time a number of growers had planted their melons in adjacent areas so that an almost solid block was formed of around a thousand acres. Along the margins of this area there was a much better set of melons than in the central portion. Near the edges two or three acres produced a carload of melons while in the center of the area 4 or 5 acres were required. Dr. M. N. Walker visited this area, and after checking over the possible causes, concluded that the difference was probably due to the fewer number of bees reaching the central portion of the field.

In the Leesburg section during the 1937 season a collection was made of the bees visiting melon flowers, and sent to Dr. Grace Sandhouse for identification. Below is a list of the species in the order of their abundance in the melon fields.

- Apis mellifica* Linné
- Halictus (Chloralictus) nymphalis* Smith
- Halictus (Chloralictus) lepidii* Graen
- Halictus ligatus* Say
- Halictus (Chloralictus) apopkensis* Robt.
- Augochlorella gratiosa* (Sm.)
- Agapostemon splendens* (Lep.)
- Augochloropsis caerulea* (Ashm.)

The honey bee was by far the most abundant species. The next three species listed occurred fairly abundantly while the others were much less common. A visit to a field near Leesburg and one near Groveland on successive days showed that there was probably ten times as many bees in the first field. In this last area a rather poor set was obtained in some commercial fields and the lack of bees was probably the reason.

The honey bee is the first to make its appearance in the

mornings. About the middle of May the first bees observed at the flowers were seen usually between 6:45 and 7:15 a. m. Bees of all types reach their greatest abundance in the field around 8:30 or 9:00 a. m.

From these observations it is quite evident that the size of the melon crop may be greatly influenced by the bees. Observations in Florida and elsewhere show that certain days are favorable for setting melons while a very poor set will occur on other days, due to weather conditions. If the favorable days are few and the supply of bees small, the yield may be small.

A factor which is of great importance in Florida is the need of producing an early crop. By far the greatest portion of the crop is shipped to the northern states, and the prices are usually the highest during the first week or two. When the melon crop is ready to ship from the other southern states, Florida is at a disadvantage due to the longer shipping distance. It is, therefore, important that a good set be obtained from the earlier flowers and to insure this an adequate supply of bees should be present. Thus, in certain areas at least, the earliness and size of yield may be increased by keeping honey bees near the field during the flowering season. In large fields best results should be obtained by having a hive near the center of the field.

C. C. GORF

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