

## **Abstract**

The population density of *Bemisia tabaci* reaches its lowest level during late winter. The causes of the decline were studied in Jordan Valley in 1977/78 and 1979/80. Part of the decline in relative density is due to a "dilution effect"; the whitefly population is distributed among an ever-increasing amount of hostplant foliage. Oviposition is impaired by rain and low temperature, but in Jordan Valley only during few days the temperature never surpasses the oviposition threshold of 14°. Major mortality among the immature stages is caused by dyschronism of pest development and leaf ageing: Under a low temperature regime, whitefly development does not keep step with leaf ageing so that a major part of the population has not yet finished its development when the host leaf dies. The extent of this mortality depends in part on the temperature and in part on the host plant species. On hostplants with rather persistent leaves (cauliflower, *Lantana*) larvae of *B. tabaci* can survive well but on host plants with short-lived leaves (e. g. squash) mortality will be complete.