The study investigated the impact of larval food on body growth in mature and immature stages of Phthorimaea operculella (Zeller, 1873) (Lepidoptera: Gelechiidae). To this end, eggplant, potato and tomato plants were used as well as potato tuber as larval food. With regards to larval weight, the highest larval body growth index (LBGI) between the first-second larval stages was observed at the larvae fed on potato plants by the rate of 5.00, but the highest LBGI between the second-third larval stages was seen at the larvae fed on potato tubers with 4.28 increase rates. Between the third-fourth larval stages, potato tuber caused the least increase in terms of growth indexes calculated on larval length and weight (0.26 and 0.84, respectively). Also, potato tuber showed the highest impact on pupal size and weight. It was seen that wingspan and length of the adults that fed on potato tuber during the larval stage were the longest. Additionally, eggs (0.17 mm.) laid by the adults that fed on potato tuber during the larval stage were the largest. Consequently, larval food had an important role on body growth in both of immature and mature stages of P. operculella. Also, both of pupal weight (R=0.48) and adult length (R=0.12) had a weak relationship with egg size. Therefore, it was understood that the selection of large individuals during mass production of the pest was not so important to increase the prospects of mass production.