

Effect of Bruising Level on Tomato Yield by Bumble Bee Foraging Activity in Greenhouses

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The yield of tomato in polyhouse and glasshouse as a function of *Bombus terrestris* activity was observed. Activity of *B. terrestris* did not show a significant difference in the yield of tomato in both cases. The number of bruising level was determined by the yield of tomato in polyhouse. There was a momentous increase in the mass per fruit at bruising level 3, but mass/fruit reduced by heavily bruising flowers. There was 42% enhance in the number of seeds/fruit from single to heavily bruising level (more than five), and insignificant difference in the size of fruits in all bruising level was recorded. The dominant effect of bumble bee pollination was observed on the number of fruits/plant. There were 14.80 more fruits on bumble bee pollinated plants. While the flowers abortion rate was too high in the plants, which were not pollinated by bumble bee. It was concluded that by using the *B. terrestris* could increase 38% yield of tomato in green houses. Bumble bee foraging activity was correlated with temperature, source of pollen available in the plot, number adults and larvae in the colony. It was found that at morning, when there was comparatively low temperature than noon and after noon, the bumble bee activity and colony traffic were maximum. This activity was reduced drastically by naturally raising the temperature in polyhouse. The activity even could not increase by declining the temperature at after noon. This might be due to less availability of pollen sources or colonies have already completed their food requirement for the day.