Incidence of Fruit Fly on Six Generations Studies in Ridge Gourd (*Luffa acutangula* L. RUXB.)

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Introduction

The ridge gourd (*Luffa acutangula* L. Ruxb.) under Cucurbits that can be grown extensively in subtropical and tropical regions of the world. It pertains to the family in Cucurbitaceae, Bheera (Telugu), Dodka (Marathi), Turai (Gujrat), and Koshataki (Sanskrit) are the native names. and widely in India cultivated throughout the *kharif* as well as summer seasons. India regards the sensitive fruits of the ridge gourd as a well-known and popular culinary vegetable due to its high yield potential and rich nutritional content (Seshadri (1985). It is a good source of minerals, vitamins, and carbs. The fibres are employed in industry. The plant is distinguished by its long, viny, trailing stems. Gourds are grown on around 4.52 lakh hectares of land in India, yielding 36.16 lakh MT annually (NHB, 2019–20). Depending on the cucurbit vegetable and season, *B. cucurbitae* can cause losses ranging from 30% to 100% (Dhillon *et al.* (2005). Pheromone traps have been effectively exploited all over the world and offer a simple and effective way to track the movements of fruit fly populations (Alyokhin *et al.,* 2000) Methyl eugenol (ME) and cue lure (CUE) are two common male attractants used to gather Bactrocera spp. fruit flies. Some species are drawn to a combination of both lures, but the majority of species seem to be drawn to either one (Dominiak *et al.* (2011).

The evaluated that six generations three crosses are Cross-I P_1 x P_2 (Arka Sumeet x Konkan Harita), Cross-II P_1 x P_3 (Arka Sumeet x Jaipur Long) Cross-III P_4 x P_5 (Saloni-5 x NRG-9) along with these five parents are (Arka Sumeet, Konkan Harita, Jaipur Long, Saloni-5, NRG-9) of ridge gourd. The observation on per cent incidence of fruit fly was recorded by was recorded by 10 plants of P_1, P_2 and F_1 and 20 plants of BC_1 and BC_2 and 40 plants population in two replication and mean values were obtained. Ridge gourd crop was raised during *kharif,* 2021 season for monitoring the population abundance of fruit fly, was used for this study. The observations on infested as well as healthy fruits on number basis recorded during each picking, for carried out per cent incidence of fruit fly. The percent incidence was worked out by using the formula

$$Percent\ incidence = \frac{\text{Total no.of infested fruits}}{\text{Total no.of healthy fruits}} \times 100$$

Out of 5 parents, the incidence of fruit fly was found in almost all the parents. The highest incidence of fruit fly was recorded in NRG-9 (18.64 %), whereas the least incidence of fruit fly was recorded in parents Saloni-5 (15.00 %) and F_1 (7.60 %), F_2 (7.25 %), BC_1 (13.52) and BC_2 (13.63 %) of cross-I P_1 x P_2 (Arka Sumeet x Konkan Harita). Cross-II P_1 x P_3 (Arka Sumeet x Jaipur Long) F_1 (8.38 %), F_2 (7.38 %), BC_1 (13.52 %) and BC_2 (15.96 %). Cross-III P_4 x P_5 (Saloni-5 x NRG-9), F_1 (7.69 %), F_2 (7.22 %), BC_1 (14.49 %) and BC_2 (15.99 %). The availability of new fruit is correlated with the rise in the percentage of fruit damage. Additionally, it was noted that the highest percentage of fruit damage occurred in August and September, when the crop was at its full ripening stage. Dubale *et al.* (2018a). and other active population of fruit fly on ridge gourd crop was observed during the month of August and September, when the crop was at full ripening stage. Shivayya and Kumar (2008).

Some integrated pest management practices recommended to control the pest of fruit fly in use of poison bait against fruit fly-mix 500 gm jaggery, 20 ml malathion and keeping plastic containers (100ml/container) @ 5 nos/Acre for monitoring and 20/acre for mass killing of fruit fly. use fish meal trap @ 10-15 nos/acre for fruit fly and use 10 banana pulp traps/acre against fruit fly-mix 20gm banana pulp, 3 drops of palm oil and 10 granules of carbofuran and keep in plastic container and cover fruits with polythene/ paper bags to minimize fruit fly infestation.

Conclusion

During fruiting stage, the highest incidence of fruit fly was recorded in NRG-9 (18.64 %) and the minimum least incidence of fruit fly was recorded in parents Saloni-5 (15.00 %) and F_1 (7.60 %), F_2 (7.25 %), BC_1 (13.52) and BC_2 (13.63 %) of cross-I P_1 x P_2 (Arka Sumeet x Konkan Harita). There is no parents as well as three crosses was discovered to be resistant to fruit

flies. The number of fruit flies captured in each trap and how they relate to meteorological factors could help create an appropriate forecasting and warning model. can lower cultivation costs by minimising crop loss and improving insect control.

References

Alyokhin A.V, Messing R.H, Duan J.J. (2000). Visual and olfactory stimuli and fruit maturity affect trap captures of oriental fruit flies (Diptera: Tephritidae). *J Econ. Entomol.* 93:644-649.

Dhillon M.K, Singh R, Naresh J.S, Sharma N.K. (2005) Influence of physico-chemical traits of bitter gourd, Momordica charantia L. on larval density and resistance to melon fruit fly, *Bactrocera cucurbitae* (Coquillett). *Journal of Applied Entomology*. 129:393-399.

Dominiak Bernie, Kerruish B, Barchia I, Pradhan U, Gilchrist Anthony, Helen I. (2011) The influence of mixtures of parapheromone lures on trapping of fruit fly in New South Wales, Australia. *Plant Protection Quarterly.* 26:136-140.

Dubale M.M, Jalgaonkar V.N, Naik K.V, Munj A.Y, Golvankar G.M (2018a). Studies on incidence of fruit flies in relation to weather parameters on ridge gourd in Konkan region. *Journal of Entomology and Zoology Studies*;6(5):2012-2014.

National Horticulture Board, NHB data base, 2019-20.

Seshadri, V. S. (1986). Cucurbits Vegetable crops in India, Ed. Bose T. K. and Som, M. G. Noya Prakash, Calcutta, India pp. 91-164.

Shivayya V, Kumar CTA. (2008) Seasonal incidence and population fluctuation of melon fly, *Bactrocera cucurbitae* (Coquillett) on bitter gourd, *Momardica charantia L. Environ. Ecol*. 26(1A):282-286.

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