

# Comparative Structure and Morphometry of Different Aphids on Citrus in Punjab

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**Abstract**—The studies on ‘Comparative structure and morphometry of different aphids on citrus in Punjab’ were conducted at Punjab Agricultural University, Ludhiana during 2014-15 and the results showed that the aptera of *Myzus persicae* (Sulzer) and *Toxoptera aurantii* (Boyer de Fonscolombe) during February-April and *Aphis gossypii* Glover, *T. aurantii* and *M. persicae* during September-October were active on citrus. It was also revealed that the spring population of *T. aurantii* (94.23%) was higher than autumn (19.15%) whereas *A. gossypii* (71.46%) was predominant during autumn season. No alate form was observed in *T. aurantii*. Fourth instar nymph of *M. persicae* had maximum body length during spring season ( $1.97 \pm 0.02$  mm) than that of autumn ( $1.72 \pm 0.04$  mm) while minimum was observed in *A. gossypii*. Similarly, the alate of *M. persicae* ( $1.52 \pm 0.03$  mm) had longer body length than *A. gossypii* ( $1.34 \pm 0.03$  mm). The length of antennae, URS ( $12.01 \pm 0.09$   $\mu$ m), hind-leg, siphunculi ( $35.45 \pm 0.10$   $\mu$ m), ratio of PT/B and number of setae on cauda (15) was found to be maximum in fourth nymphal instar of *T. aurantii*. In case of alate adult, *A. gossypii* had highest antennal, siphuncular ( $16.98 \pm 0.60$   $\mu$ m) and URS ( $11.02 \pm 0.14$   $\mu$ m) length whereas the length of hind-leg, cauda ( $19.13 \pm 0.11$   $\mu$ m), fore-wing, hind-wing and ratio of PT/B was maximum in *M. persicae*. It also depicted that there was clear structural difference in the morphometry of different body parameters of aphid species obtained from SEM and stereo zoom microscope imaging which acts as an important diagnostic parameter for species description.

**Keywords:** Alate, aphid, fruit crops, nymph, species.