

Population Dynamics and Diversity of Beneficial Arthropods in Pummelo (Citrus maxima) under Perennial Peanut, Arachis pintoii Cover Crop

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Abstract : Enhancing the population of beneficial arthropods under less diverse agroecosystem is the most sought by many researchers and plant growers. This strategy was done through the establishment of pintoii peanut, Arachis pintoii as live mulch or cover crop in pummelo orchard of the University of Southeastern Philippines (USEP), Mabini, Compostela Valley Province, Philippines. This study was conducted to compare and compute population dynamics and diversity of beneficial arthropods in pummelo in with and without Arachis pintoii cover crop. Data collections were done for the 12-month period (from June 2013 to May 2014) at the pummelo orchard of USEP Mabini Campus, COMVAL Province, Philippines and data were analyzed using the Independent Samples T-Test to compare the effect of the presence and absence of Arachis pintoii on beneficial arthropods incidence in pummelo orchard. Moreover, diversity and family richness analyses were computed using the Margalef's diversity index for family richness; the Shannon index of general diversity and the evenness index; and the Simpson index of dominance. Results revealed numerically and statistically higher density of important beneficial arthropods such as microhymenopterans, macrohymenopterans, spiders, tachinid flies and ground beetles were recorded in pummelo orchard with Arachis pintoii than from without Arachis pintoii cover crop for the 12-month observation period. Further, the result of the study revealed the high family richness and diversity index with more or less even distribution of individuals within the family and low dominance index were documented in pummelo with Arachis pintoii cover crop than from pummelo without Arachis pintoii cover crop. The study revealed that planting A. pintoii in pummelo orchard could enhance natural enemy populations.

Keywords : Arachis pintoii, cover crop, beneficial arthropods, pummelo

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