



Research on Insect Science could be a Wonderful Opportunity for Next Generation

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Insect is an omnipresent and a superficial animal in the kingdom and found in the earth from 400 million years onwards. Up-to-date, one million of insects are identified with different orders. Today, augmented research on proteomics, genomics, physiology and biochemistry, molecular taxonomy and gut symbiosis of insect emphasizing the importance of Insect Science. Scientists and farmers are focusing their research and rearing interest on beneficial insect such as Silkworm and honeybee for earning money through silk and honey production respectively. In addition, silkworm pupa and black fly larvae used as food supplements to human and fisheries respectively. Development of non-radiation based mutant silkworm for higher yield of silk is shows more interest among the sericulture scientist [1]. Interestingly, the insect derived proteins have anti-bacterial, viral and fungal which have crucial applications in drug industry [2,3]. Insect gut protease have diverse applications in industries such as detergent, insecticidal agent, chemical and food, and pharmaceutical [4,5]. Apart from insect derived proteins, insect gut microbes play a major role a significant role on host fitness and their own growth and multiplication [6]. Now the recent trend is turning on insect gut microbes due to their versatile characteristics, the insect gut microbes are utilized for enzyme, food supplements, pro-biotic and biofuel production, degradation of pollutants, etc. [7].

Some insects are pests to human and other vertebrates by distributing zoonotic disease (i.e. mosquito, tick and mite) and particularly insects from Lepidoptera and Coleoptera are affecting agriculturally important crops [8]. The agricultural pests are managed by the use bio-pesticides, bio-control agents (like entomopathogenic Fungus (EPF: *Beauveria bassiana* and *Metarhizium anisopliae*), entomopathogenic nematodes and natural enemies of insect. Later scientists are discovered advanced trapping technique like color sticky board, LED lights with attractive lures such as sex pheromone and host plant volatiles as a part of Integrated pest management [9]. IPM technologies now coping to reduce the usage of chemical pesticides, which are harmful to environment. With advanced technology like RNAi and CRISPR and development of transgenic plant with protease inhibitors are under beginning's stage to develop insect resist plants. Even though, many insect insects species are identified and classified through systematic way, it is time consuming, therefore, scientist are using DNA barcoding as an effective technique to identify the mature and immature in-

sects with accurate status [10-13]. Research on Insect Science has many outlooks to the future generation with various beneficial prospectus.

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