

University of Ibadan 493<sup>rd</sup> Inaugural Lecture

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## Entomosophia: Managing Insects Sustainably in Agroecosystem as Pest and Food with Wisdom

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### Abstract

Insects have impacted human beings both positively and negatively in the ecosystem and it is important to manage them sustainably in the agroecosystem as pest and food with wisdom. They are important for their diversity and various roles in the ecosystem. As a group, they have dominated man's interests for diverse purposes either as harmful or beneficial members of the ecosystem and having persisted on earth for 350 million years; have mastered the earth so well as to still be around till date. They are significant to life on earth because of their positive influence on agriculture, veterinary and human health as well as on fulfilment or depletion of natural resources.

The relationship between insects and the agricultural enterprise is complex, being beneficial or harmful. Some beneficial roles of insects in the ecosystem include being a major food resource to many other animals; forming a major link in the ecological chain. They are particularly helpful as pollinators of crops in fields and decomposers of organic matter. For their various harmful roles in the ecosystem, which made them to be termed pests, there is the need to manage them with intelligence in a way that the integrity of the ecosystem would be retained. It is expedient to manage insect well as pest or as food in the ecosystem with focus on environmental safety and sustainability with wisdom. The calculated annihilation of insects via persistent pesticide application is unwise. An environmentally friendly approach to managing insects with wisdom was advocated.

The bulk of my research had centered on managing insects as pests with environmentally friendly options. For example, cowpea protection in storage with diflubenzuron or its relatives is not advised. Wise management of other storage insect pests of arable crops like maize, sorghum and cocoa in the store with ecofriendly options like botanicals is encouraged. Resistant donor lines against AfRGM found among the Tropical *Oryza glaberrima* (TOG) lines are good and could form a good component of integrated management of the African rice gall midge, *Orseolia oryzivora* in the field. The natural abundance of the African rice gall midge (AfRGM) parasitoid in Nigeria, and the successful development of a protocol for its rearing in the screen house for studying the life cycle of the endoparasitoid, *Platygaster diplosisae* was promising. Also, the abundance of 24-methylenecholesterol was found to be the factor explaining the resistance of the *O. glaberimma* cultivar to the AfRGM. In managing insects as food and feed, the shifting emphases must include the view of insect in the ecosystem as catalyst for accelerated food and nutrition security; advocating a radical shift from the old view of killing insects. Sustainable insect management practice should include intelligent utilization of the available insect resources. The Impact Cluster for Food and Feed initiative would promote insect farming in collaboration with the New Generation Nutrition Company, Netherlands and the government of the Netherlands. This Black Soldier Fly larvae production initiative is being developed to promote the domestic aquaculture and poultry production chains directly through affordable local feed sources in Nigeria.