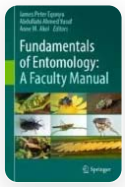
Insect Pathology

| Chapter | First Online: 01 May 2026

| pp 87–116 | Cite this chapter



Fundamentals of Entomology: A Faculty Manual

Wakuma Bayissa, Venansio Tumuhaise, Lisemelo Motholo, Tshima Ramakuwela & Ayaovi Agbessenou

Abstract

Insect pathology has a history that extends back to the 1880s, where scientists have studied the complex relationship between insects and pathogens. Several investigations have been made to understand the causal agents of diseases and the underlying mechanisms. This includes understanding infection routes and behavioral changes in infected hosts. Causal pathogens include fungi, bacteria, nematodes, and viruses. Understanding how entomopathogenic microorganisms invade their hosts, causing diseases, and exhibit virulence can enhance their use in biocontrol of pests. However, several factors—both biotic and abiotic—influence the effectiveness of entomopathogens. To enhance their efficacy, continuous effort should be made from strain selection to product development. Biopesticides can also be considered as an integral element of holistic pest management, promoting eco-friendly pest management. The biopesticide industry in Africa faces numerous challenges related to R&D, socioeconomic factors, the political landscape, and regulatory frameworks. Policy harmonization needs to enhance the biopesticide sector's potential on the continent.