

## **Overview of oriental fruit fly, *Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae) in Africa: From invasion, bio-ecology to sustainable management**

Reyard Mutamiswa, Casper Nyamukondiwa, Gerald Chikowore and Frank Chidawanyika

### **Abstract**

*Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae) is a major pest of fruits and vegetables across the world. Following its first detection in Africa in 2003, it has rapidly spread and established successfully across the continent. The current paper reviews the status of *B. dorsalis* in Africa exploring invasion patterns and the role of climate and the environment in its invasion success. We also review current management practices highlighting recent developments and future prospects for its control. We note that the period 2003–2014 was marked by the rapid spread of *B. dorsalis* from East to West, as well as part of North, central and southern African regions. This invasion success probably stems from favourable environmental conditions in relation to climate and diverse host plants. In addition, competitive biotic factors including superior reproductive traits may give it a competitive edge over its interspecific competitors. Current management practices range from cultural, biological, interference methods, chemical, genetic engineering and integrated approaches. We therefore highlight opportunities for successful sustainable control with particular focus on new genomic approaches that require regionally coordinated efforts to curb future biological invasions. These new approaches may complement the efficacy of current practices such as sterile insect technique (SIT) in order to improve access to export markets and help transform African economies through sustainable fruit and vegetable trade.