

# ELDANA SACCHARINA (LEPIDOPTERA: PYRALIDAE) IN AFRICA: ARE THERE DIFFERENT BIOTYPES?

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A number of workers on *Eldana saccharina* Walker have mentioned differences in biology and behaviour between populations of this borer in west and east Africa and South Africa. Because of international isolation, these observations could not be investigated by South African Sugar Association Experiment Station entomologists until 1994. Visits were then made to west, east and central African countries to determine sources and collect natural enemies of *E. saccharina*. During these surveys, differences in boring behaviour of *E. saccharina*, in sugarcane in particular, were observed in Kenya, Uganda and South Africa.

The Kenyan and Ugandan sugar industries are based on the use of Indian varieties (Co) as their source of sugarcane. There is a preference shown by *E. saccharina* when it attacks Indian varieties of sugarcane, with Co421 being the most susceptible. The pest in Kenya and Uganda has a further similarity with the southern African *E. saccharina* in that it prefers older sugarcane. However, in contrast to the southern African borer, which attacks the lower portion of mature sugarcane, its counterparts in Kenya and Uganda attack the upper portion of the sugarcane plant. This difference appears not to be related to the variety grown, as old cane of variety NCo376 at Mumias Sugar Estate in Kenya was found infested with *E. saccharina*, with the upper portion of the stalks bored. When variety NCo376 of a similar age was investigated in South Africa, the lower portions had been attacked.

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As they are morphologically similar, it is clear that these *E. saccharina* are not different species. While in quarantine, east and west African adults were mated with South African adults, and all mated females produced viable offspring. The most probable explanation is that they are different biotypes, which a PCR-RAPD or similar analysis would show.

The determination of control measures is complicated by the differences in behaviour between *E. saccharina* populations. For example, the South African recommendation of cutting cane as low as possible to control this borer will have no impact on *E. saccharina* populations in Kenya and Uganda. In contrast, the South African recommendation that cane tops should be left in the field could cause population outbreaks in Kenya and Uganda because, in these countries, most of the *E. saccharina* populations are in the cane tops. Chemical control or the use of pathogens may be easier in cane in Kenya and Uganda because the life stages are less protected by leaf material in these countries than in South Africa. In addition, these different *E. saccharina* populations could have major impacts on the parasitoids known to attack them. The searching abilities of the parasitoids may prevent them from being successful on populations of borers in other countries. The cues used by the parasitoids to locate their prey may be different in the different host populations. There are certainly differences in habitat between regions and, in order to be successful, the parasitoid will need to overcome these differences.