

Title The importance of *Mussidia nigrivenella* Ragonot (Lepidoptera: Pyralidae) as a post-harvest pest in different storage structures in Benin

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Abstract

In West Africa, the most damaging lepidopteran pest of maize ears is the pyralid *Mussidia nigrivenella*. Although it is mostly described as a field pest, it can be found feeding on maize stored for up to 4 months. A survey was conducted in Benin in 2006 to assess *M. nigrivenella* infestations in different maize storage systems in the Southern (SGS) and Northern Guinea Savanna (NGS). In SGS and NGS the percentage of infested stores decreased from 86.7% to 26.7% and from 51.4% to 14.3%, respectively, during the first 28 weeks of storage. During the same time, mean numbers of *M. nigrivenella* per cob decreased from 0.36 to 0.04 across both zones. All larval stages, but mostly 3rd–5th instars, were frequently found even after more than 12 weeks, indicating that *M. nigrivenella* may have reproduced in storage, although reinfestation or delayed development could also explain this observation. The highest *M. nigrivenella* incidences of 16.8% and 14.4% were found in the “Ava” and crib stores, respectively. Infestations were highest in “Ava” and lowest in maize grain stored in polyethylene bags or in mud silos. In a laboratory experiment, the presence of post-harvest beetles negatively affected the bionomics of *M. nigrivenella*, indicating strong interspecific competition.