New emerging pests and how to control them

Invasive insect pests can threaten food production in developing countries. Fall armyworm, a pest indigenous to the Americas, has recently been shown to be spreading across Africa, damaging crops and posing a threat to livelihoods.

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CAB Abstracts sources the world literature to provide information on all aspects of crop pests and their control including information on:

- **New pest reports**: fall armyworm, a pest which had previously not been found outside the Americas, has been reported from Africa and is spreading rapidly.
  
  First report of outbreaks of the fall armyworm *Spodoptera frugiperda* (J E Smith) (Lepidoptera, Noctuidae), a new alien invasive pest in West and Central Africa.
  
  *PLoS ONE*, 2016

- **Biological control**: biological control is an alternative to using chemical pesticides and provides an environmentally sound and effective means of controlling pests through the use of natural enemies.
  
  Influence of male presence and host diet on *Campoletis sonorenis* parasitism of *Spodoptera frugiperda*.
  
  *Biocontrol Science and Technology*, 2017

- **Pest monitoring and forecasting**: the use of pheromone traps can help to locate outbreak areas and trap data can be used to identify potential outbreak areas within a given region.
  
  Fall armyworm in Africa: which ‘race’ is in the race, and why does it matter?
  
  *Current Science*, 2018

- **Integrated Pest Management**: Integrated Pest Management (IPM) is a programme of pest control based on prevention, monitoring and control, utilizing a variety of methods and techniques, including biological and cultural control.
  
  A climate-adapted push-pull system effectively controls fall armyworm, *Spodoptera frugiperda* (J E Smith), in maize in East Africa.
  
  *Crop Protection*, 2018
Biological aspects and predation behavior of Ceraeochrysa cubana against Spodoptera frugiperda

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ABSTRACT
Mortality of neonate larvae and eggs of Spodoptera frugiperda has an important contribution to the management of this pest. This work aimed to determine the development, quantify the consumption, the time of search and handling of eggs of S. frugiperda by Ceraeochrysa cubana. The duration of development and the survival of C. cubana were determined using eggs of the alternative prey Anagasta kuehniella; eggs, newborn caterpillars and combined feeding of egg + newborn caterpillars of S. frugiperda. The daily and total consumption, the search and handling time were also evaluated, comparing eggs and caterpillars of S. frugiperda as prey. The duration of the larvae to adult phase of C. cubana was prolonged when the food was newborn caterpillars or eggs + newborn caterpillars of S. frugiperda (35.7 and 34.6 days) when compared to eggs of A. kuehniella and S. frugiperda (25.5 and 25.9 days). The predator’s larvae showed a shorter larval and adult period when fed with eggs in relation to caterpillars. Larval viability of C. cubana was lower when fed with eggs + newborn caterpillars. Higher consumption and shorter search and handling time on newborn caterpillars of S. frugiperda, compared to prey eggs, are carried out by larvae of C. cubana during the third instar.

Key words: biology; chrysopides; fall armyworm

RESUMO
A mortalidade de ovos e larvas neonatas de Spodoptera frugiperda tem importante contribuição para o manejo desta praga. Este trabalho objetivou determinar o desenvolvimento, quantificar o consumo, o tempo de busca e de manipulação de ovos de S. frugiperda por Ceraeochrysa cubana. A duração do desenvolvimento e a sobrevivência de C. cubana foram determinadas empregando-se ovos da presa alternativa Anagasta kuehniella; ovos, lagartas neonatas e alimentação combinada de ovos + lagartas neonatas de S. frugiperda. Também foram avaliados os consumos diário e total, o tempo de busca e de manipulação, comparando ovos e lagartas de S. frugiperda como presa. A duração da fase de larva a adulto de C. cubana foi prolongada quando o alimento foi lagartas neonatas ou ovos + lagartas neonatas de S. frugiperda (35,7 e 34,6 dias) comparado a ovos de A. kuehniella e S. frugiperda (25,5 e 25,9 dias). Larvas do predador apresentam menor período de larva-adulto quando alimentadas com ovos em relação a lagartas. A viabilidade larval de C. cubana foi menor quando alimentadas com ovos + lagartas neonatas. O maior consumo e menor tempo de busca e de manipulação sobre lagartas neonatas de S. frugiperda, em comparação aos ovos da presa, são realizados por larvas de C. cubana durante o terceiro estádio.

Palavras-chave: biologia, crisopídeos, lagarta-do-cartucho