

Coleus barbatus Benth and *Ocimum basilicum* L. (Lamiaceae), New Host Plants to *Spodoptera cosmioides* (Walker) (Lepidoptera: Noctuidae) in Sinop, State of Mato Grosso, Brazil

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Abstract. *Coleus barbatus* Benth and *Ocimum basilicum* L. are plants species commonly used for medicinal and gastronomic purposes, respectively. Caterpillars of the *Spodoptera* genus are generalists due to the wide variety of plants species used as food source. The aim of this research was record the occurrence of *Spodoptera cosmioides* (Walker) (Lepidoptera: Noctuidae) in Sinop, Mato Grosso State, Brazil, and also record *C. barbatus* and *O. basilicum* as potencial host plants for this insect species. It is recommended attention in inclusion of *S. cosmioides* in Integrated Pest Management (IPM) of this plant species.

Keywords: New occurrence; host plant; pests.

Coleus barbatus Benth e *Ocimum basilicum* L. (Lamiaceae): Novas Plantas Hospedeiras para *Spodoptera cosmioides* (Walker) (Lepidoptera: Noctuidae) em Sinop, Estado de Mato Grosso, Brasil

Resumo. *Coleus barbatus* Benth e *Ocimum basilicum* L. são espécies de plantas comumente utilizadas com fins medicinais e gastronômicos, respectivamente. Lagartas do gênero *Spodoptera* são generalistas devido à ampla variedade de plantas que utilizam como recurso alimentar. O objetivo desta pesquisa foi registrar a ocorrência de *Spodoptera cosmioides* (Walker) (Lepidoptera: Noctuidae) no município de Sinop, Mato Grosso, Brasil, e ainda, relatar *C. barbatus* e *O. basilicum* como potenciais plantas hospedeiras para esta espécie de inseto. Recomenda-se ainda a inclusão de *S. cosmioides* em monitoramentos visando o Manejo Integrado de Pragas (MIP) nestas plantas.

Palavras-chave: Nova ocorrência; planta hospedeira; pragas.

The regions of biomes transitions are characterized by presenting a great abundance of species from fauna and flora. These areas present specific characteristics that deserve more studies about behaviour and adaptations to local changes. Sinop is a city located in the north of Mato Grosso State, Brazil, in a transition region of Amazonia and Brazilian Savana biomes.

Several insect species have been related and recorded in this city, which extends the knowledge about the geographical distribution, new host plants and their insect-plant relationship. These informations are essential for ecology studies and also for integrated pest management (IPM) programs.

The most recent literature about entomological biodiversity in Sinop region were records on some insect species attacking or feeding new hosts, such as *Promecops claviger* Hustache (Coleoptera: Curculionidae) attacking soybean plants, *Glycine max* Linnaeus (Fabaceae) (BARRETO & CAVALET 2011); *Leptoglossus zonatus* (Dallas) (Hemiptera: Coreidae) attacking *Averrhoa carambola* Linnaeus (Oxalidaceae) (starfruits), *Magnifera indica* Linnaeus (Anacardiaceae) (mango), *Malpighia emarginata* Sessé & Moc. (Malpighiaceae) (acerola) and *Morus nigra* Linnaeus (Moraceae) (black mulberry) (PIRES *et al.* 2011, 2012);

Poekilloptera phalaenoides (Linnaeus) (Hemiptera: Flatidae) attacking *Sclerolobium paniculatum* Vogel (Caesalpinioideae) (MANICA *et al.* 2012); *Rhynchophorus palmarum* (Linnaeus), *Rhinostomus barbirostris* Fabricius, *Homalinotus coriaceus* (Gyllenhal), *Metamasius cinnamominus* Perty, *Metamasius hemipterus hemipterus* (Linnaeus) and *Amerrhinus ynca* Sahlberg (Coleoptera: Curculionidae) on *Cocos nucifera* Linnaeus (Palmae) (DAL MOLIN & BARRETO 2012) and *Costalimaita ferruginea* Fabricius (Coleoptera: Chrysomelidae) on *Eucalyptus* sp. (Myrtaceae) (PIRES *et al.* 2013).

Spodoptera cosmioides (Walker) (Lepidoptera: Noctuidae), commonly known as velvet armyworm, is a species with a high degree of phytophagy because it can feed on a wide variety of plant species, such as peanapple, peanut, alfalfa, cotton, rice, asparagus, potato, eggplant, oat, sugarbeet, coffee, caupi bean, anion, cabbage, pea, crotalaria, sunflower, eucalyptus, apple, mango, corn, sweetpepper, soya bean, tomato and wheat (BERTELS & BAUCKE 1966; SANTOS *et al.* 1980; HABIB *et al.* 1983; BAVARESCO *et al.* 2001, 2004; PASTRANA 2004; SPECHT *et al.* 2004).

This paper aimed to record the occurrence of *S. cosmioides* in Sinop, Mato Grosso State, Brazil, besides to increase the informations about new host plants for this insect species. Eggs,

caterpillars and pupae of *S. cosmioides* were collected in June 2012 on *Ocimum basilicum* L. (Lamiaceae) (basilicum plant) and *Coleus barbatus* Benth (Lamiaceae) (Indian coleus), in a transition region near by the urban area of Sinop and some areas used for soybean and corn crops (11°51'11,15"S; 55°32'12,21"W and 372 m above sea level). *Ocimum* plants present high levels of some components frequently used in the pharmaceutical companies (MORALES & SIMON 1996) and strongly used for the traditional medicine (MARTINS 1998), besides as spice and condiments for sauces. The *Coleus* genus is commonly used

analgesic and against hypertension and diarrhea (COELHO NETTO & ASSIS 2002). It is also used during treatments for glaucoma and asthma because of the presence of forskolin, a drug used for these treatments (SURYANARANAN & PAI 1998).

Ten caterpillars of *S. cosmioides* were collected directly on the plants and taken to the Laboratory of Stored Grain Pests. Then they were fed with indian coleus and basilicum leaves until they became pupae. After adult emergency they were fixed, labeled and identified by Dr. Evaldo Martins Pires and confirmed

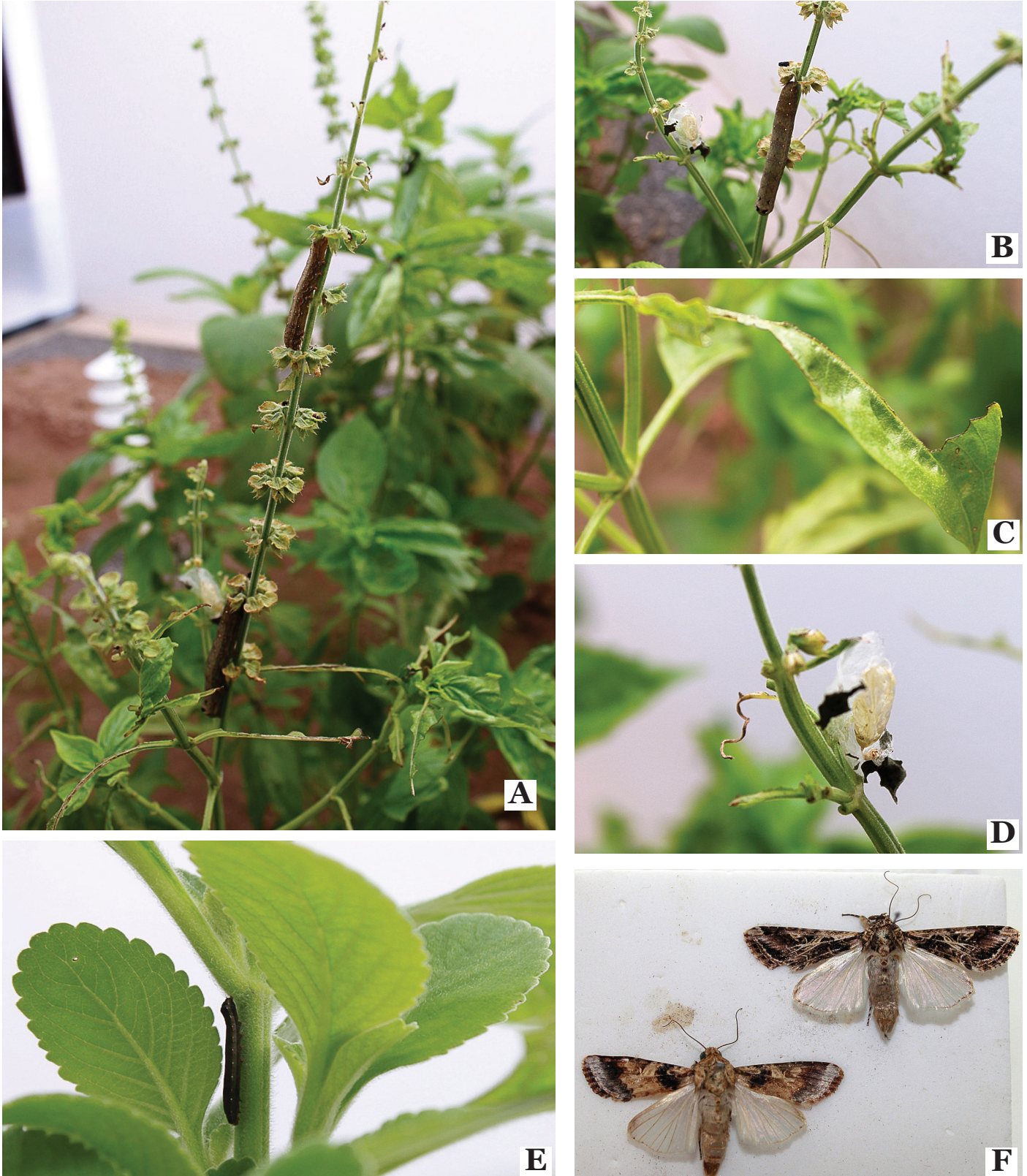


Figure 1. (A and B) Caterpillars of *Spodoptera cosmioides* (Lepidoptera: Noctuidae) feeding on *Ocimum basilicum* (Lamiaceae) in Sinop, Mato Grosso State, Brazil. (C) Detail of a *O. basilicum* leaf damaged by *S. cosmioides*. (D) Emerged pupae of *S. cosmioides*. (E) Caterpillars of *S. cosmioides* on *Coleus barbatus* (Lamiaceae) plants, in Sinop, Mato Grosso State, Brazil. (F) Adult of *S. cosmioides* emerged from some pupae collected on *O. basilicum* (Lamiaceae) and *C. barbatus* (Lamiaceae) and reared in the laboratory.

by a Lepidoptera specialist at USDA Systematic Entomology Laboratory, Smithsonian Institution. His diagnosis confirmed the species *Spodoptera cosmioides* (Lepidoptera: Noctuidae).

It is still important to observe that during the period of sample there was no crop nearby that could serve as host plants for this insect species. Probably this could happen because it was the dry period of the year, without almost no rain and low humidity levels, period not suitable for important crops, such as corn and soybean. The information about new host plant for *S. cosmioides* can be a characteristic of this species to disperse or adapt to local conditions, searching for alternative food sources. Then, *C. barbatus* and *O. basilicum* crops nearby or around soybean and corn crops are not recommended because these plant species may serve as a refuge and food sources for *S. cosmioides* when the main crops are not present.

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