

SCIENTIFIC NOTE

Natural Incidence of Egg Parasitoids of *Edessa meditabunda* (F.) (Hemiptera: Pentatomidae) on *Crotalaria spectabilis* in Campo Novo do Parecis, MT, Brazil

V GOLIN¹, MS LOIÁCONO², CB MARGARÍA², DA AQUINO²

¹Depto de Zoologia, Setor de Ciências Biológicas, Univ Federal do Paraná, Curitiba, PR, Brasil

²División Entomología, Fac de Ciencias Naturales y Museo, Univ Nacional de La Plata, La Plata, Buenos Aires, Argentina

Keywords

Crop rotation, rattlepod, Encyrtidae, Eurytomidae, Platygastriidae

Correspondence

VANESSA GOLIN, Rua Florianópolis, n. 624W, Residencial Dona Júlia, 78300-000, Tangará da Serra, MT, Brasil; vanessa.golin@yahoo.com.br

Edited by Antônio R Panizzi – EMBRAPA

Received 11 August 2010 and accepted 18 April 2011

Abstract

Egg parasitoids of the stink bug *Edessa meditabunda* (F) were studied on rattlepod *Crotalaria spectabilis* used in soybean crop rotation in Campo Novo do Parecis, Mato Grosso state, central western Brazil. Seven species of parasitoids were found: two Encyrtidae, one Eurytomidae, and four Platygastriidae. The occurrence of *Trissolcus euchisti* (Ashmead) and *Trissolcus elimatus* Johnson (Platygastriidae) on eggs of *E. meditabunda* is recorded for the first time. Moreover, this is the first record of *T. elimatus* and *T. euchisti* from Brazil.

Stink bugs (Pentatomidae) are the most important pests of soybean (*Glycine max*) due to their high population densities and damage to seeds (Côrrea-Ferreira & Panizzi 1999, Belorte *et al* 2003). *Edessa meditabunda* (F.) is a stink bug that occasionally causes significant damage to soybean in Rio Grande do Sul state and in central western areas of Brazil (Corrêa-Ferreira & Panizzi 1982, 1999, Panizzi 1997). *Edessa meditabunda* can also feed and breed on alternate hosts or occupy overwintering sites. Most of the studies on the field biology of phytophagous stink bugs concentrate on crops, paying less attention or completely overlooking the role of wild plants in insect population buildup (Panizzi & Parra 2009).

The rattlepod *Crotalaria spectabilis* (Leguminosae) is commonly used as green coverage in soybean crops, and is important for nitrogen fixation, higher soil organic matter, and microbial activity (Gravena 1992, Kushida *et al* 2003). Studies are needed to determine the potential of this plant as a shelter to improve native populations of egg parasitoids of phytophagous stink bugs.

Biological control is an alternative to reduce populations

of stink bug pests on target crops. Hymenopterous egg parasitoids are probably the most important among the complex of natural enemies of stink bugs. In soybean, *Trissolcus basalis* Wollaston and *Telenomus podisi* Ashmead (Hymenoptera: Platygastriidae) are the main species attacking their preferred hosts, *Nezara viridula* (L.) and *Euschistus heros* (F.), respectively (Corrêa-Ferreira & Moscardi 1995, Medeiros *et al* 1997). Management of the green coverage that serves as alternative hosts for stink bugs can also be beneficial to increase natural enemy populations (Altieri 1989). Thus, in the present study we evaluated the natural occurrence of parasitoids on *E. meditabunda* eggs found on rattlepod crops, in Campo Novo do Parecis, Mato Grosso state, central western Brazil.

During September 2009, eggs of *E. meditabunda* were collected on rattlepod at the Fazenda São Paulo (S 13°06'54" W 57°57'14") in a 2 ha area (near a forest remnant) and taken to the laboratory. Egg masses were individually placed in Petri dishes, and kept at room temperature (26 ± 2°C; photophase 10h) until emergence.

Seven species of parasitoids were identified from eggs of *E. meditabunda*: *Ooencyrtus submetallicus* (Howard) and *Ooencyrtus* sp. (Encyrtidae); *Neorileya albipes* Girault (Eurytomidae); and *Gryon* sp., *Trissolcus urichi* Crawford, *Trissolcus elimatus* Johnson and *Trissolcus euchisti* (Ashmead) (Platygastridae). *Trissolcus elimatus* and *T. euchisti* are recorded for the first time from Brazil, and *E. meditabunda* is a new host record for both parasitoid species (Orr et al 1986, Johnson 1987). *Trissolcus urichi*, *Ooencyrtus* sp. and *Neorileya* sp. were previously reported parasitizing *E. meditabunda* and several other species of pentatomids on soybean in Paraná state, southern Brazil (Corrêa-Ferreira & Moscardi 1995). *Ooencyrtus submetallicus* had been already reported on eggs of *E. meditabunda* in Brazil (De Santis 1985).

Acknowledgments

To Cooperativa Aliança dos Produtores do Parecis (CAAP) for both financial and logistical support. To Fundo de Apoio à Cultura da Soja (FACS) for funding.

References

- Altieri MA (1989) Agroecologia: as bases científicas da agricultura alternativa. Rio de Janeiro, PTA/FASE, 240p.
- Belorte LC, Ramiro ZA, Faria AM, Marino CAB (2003) Danos causados por percevejos (Hemiptera: pentatomidae) em cinco cultivares de soja (*Glycine max* (L.) Merrill, 1917) no município de Araçatuba, SP. Arq Inst Biol, São Paulo 70: 169-175.
- Corrêa-Ferreira BS, Moscardi F (1995) Seasonal occurrence and host spectrum of egg parasitoids associated with soybean stink bugs. Biol Control 5: 196-202.
- Corrêa-Ferreira BS, Panizzi AR (1982) Percevejos-praga da soja no norte do Paraná: abundância em relação à fenologia da planta e hospedeiros intermediários. An Semin Nac Pesq Soja 2: 140-151.
- Corrêa-Ferreira BS, Panizzi AR (1999) Percevejos da soja e seu manejo. Londrina, Embrapa-CNPSo, 45p. (Circular técnica, 24).
- De Santis L (1985) Dos notas sobre himenópteros calcidoideos parasitoides oófagos de hemípteros heterópteros (Insecta). Rev Chil Entomol 12: 91-94.
- Gravena S (1992) Controle biológico no manejo de pragas. Pesq Agropec Bras 27: 281-299.
- Johnson NF (1987) Systematics of New World *Trissolcus*, a genus of pentatomid egg-parasites (Hymenoptera: Scelionidae). J Nat Hist 21: 285-304.
- Kushida A, Suwa N, Ueda Y, Momota Y (2003) Effects of *Crotalaria juncea* and *C. spectabilis* on hatching and population density of the soybean cyst nematode, *Heterodera glycines* (Tylenchida: Heteroderidae). Appl Entomol Zool 38: 393-399.
- Medeiros MA, Schimidt FVG, Loiácono MS, Carvalho VF, Borges M (1997) Parasitismo e predação em ovos de *Euschistus heros* (Fab.) (Heteroptera: Pentatomidae) no Distrito Federal, Brasil. An Soc Entomol Brasil 26: 397-401.
- Orr DB, Russin JS, Boethel DJ (1986) Reproductive biology behavior of *Telenomus calvus* (Hymenoptera: Scelionidae), a phoretic egg parasitoid of *Podisus maculiventris* (Hemiptera: Pentatomidae). Can Entomol 118: 1063-1072.
- Panizzi AR (1997) Wild hosts of pentatomids: ecological significance and role in their pest status on crops. Annu Rev Entomol 42: 99-122.
- Panizzi AR, Parra JRP (2009) A bioecologia e nutrição de insetos como base para o manejo integrado de pragas, p.1107-1140. In Panizzi AR, Parra JRP (eds) Bioecologia e nutrição de insetos: base para o manejo integrado de pragas. Brasília, Embrapa/CNPq, 1164p.