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Parasitoids of the Fall Armyworm

The fall armyworm, *Spodoptera frugiperda* (J. E. Smith), is a pest of several major crops in South Carolina. In addition to grain and grass crops, it attacks alfalfa, cotton, cowpeas, peanuts, potato, soybean, tomato, and other crops. The greenish or brownish caterpillars grow to about 1.33 inches. They may be identified in the field by observing a conspicuous inverted Y on the head and three yellowish-white,



Fall armyworm larva. (Clemson University)

hairlike stripes down the back. When serious outbreaks occur, the larvae exhaust their food supply and begin crawling, literally by the thousands, seeking more plants to devour.

Some of the natural mortality of fall armyworm larvae in corn and sorghum is caused by beneficial insects. These include insect parasitoids which in the larval stage, grow and develop inside the fall armyworm, eventually consuming the soft tissues and killing the fall armyworm. Incidence of parasitism in early instar fall armyworms has reached 21% in corn and 40% in sorghum during the fall (Table 1). The most common parasitoid in late-season sorghum and corn is a braconid wasp, *Chelonus insularis* Cresson. It provides at least 50% of the late season parasitism of fall armyworm in sorghum and corn. The tachinid, *Archytas marmoratus* (Townsend), was reared from fall armyworm larvae collected as late as 3 December. It emerges from the pupal case of the fall armyworm. The braconid wasp, *Cotesia marginiventris* (Cresson), was detected as late as 1 November from sorghum and 8 November from corn. This may provide some insight into the overwintering potential and possible role of these parasitoids in integrated pest management.



Archytas marmoratus (Gloria McCutcheon)



Meteorus autographae (Gloria McCutcheon)

Table 1. Late-season parasitoids reared from collections of first through fourth instar fall armyworms, *Spodoptera frugiperda*, in South Carolina in 1984*

Parasitoid	Percentage parasitism	
	corn (n = 792)	sorghum (n = 611)
Hymenoptera		
Braconidae		
<i>Chelonus insularis</i> Cresson	11.6	24.8
<i>Meteorus autographae</i> Muesebeck	1.0	1.1
<i>Rogas laphygmae</i> Viereck	0.6	4.9
<i>Cotesta marginiventris</i> (Cresson)	1.4	5.6
<i>Homolobus truncator</i> (Say) (= <i>Zele mellea</i> Cresson)	0.9	0.3
Ichneumonidae		
<i>Campoletis</i> species	0.3	1.0
Diptera		
Tachinidae		
<i>Archytas marmoratus</i> (Townsend)	4.2	2.0
<i>Winthemia</i> spp.	0.5	0.2
<i>Lespesta</i> spp.	0.6	0.2
Total	21.1	40.1

*No parasitoids were reared from 52 fifth and sixth instar fall armyworms collected from sorghum and 78 fifth and sixth instars collected from corn.

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