

ASPARAGUS MINER INTEGRATED MANAGEMENT

Research in the MSU vegetable entomology lab focuses on the IPM of the asparagus miner (*Ophiomyia simplex* (Loew), Diptera: Agromyzidae). This insect is a putative vector for pathogenic species of *Fusarium* fungus, which is the causative agent for "early decline syndrome" in asparagus fields. *Fusarium* can decrease the life span of an asparagus field by 5-8 years, making it economically unsustainable to continue production.

Currently ongoing projects:

ASPARAGUS MINER DEGREE DAY MODEL

Currently weather stations are set up at growers farms and we are monitoring for different life stages of the asparagus miner to determine the growing degree days when key events happen. This information will be shared with growers through MSU's Enviroweather website.



asparagus miner adult feeding on asparagus flower

ASPARAGUS MINER MONITORING WITH BAITS

We are exploring the chemical interaction of the asparagus miner with the asparagus. In particular, we are looking for plant volatiles involved in the attraction of the miner to plants. Plant volatiles can be used in management by incorporating them into baits on traps to improve monitoring or using them in the population management of adult miners.

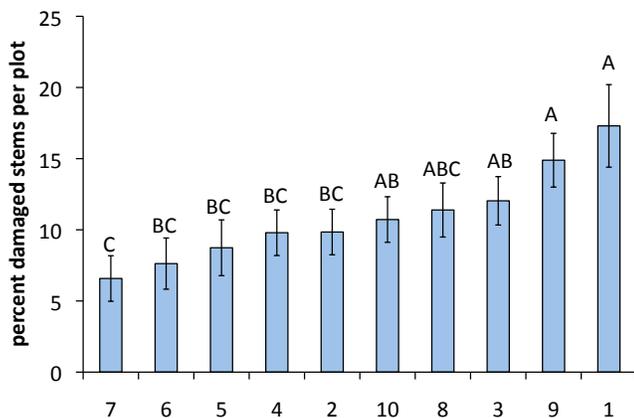
ASPARAGUS MINER BIOLOGICAL CONTROL

We are currently in the process of identifying naturally occurring arthropod parasitoid species of the miner pupae, as well as examining their abundance in commercial asparagus fields. So far, parasitoids have been identified from the *Pteromalidae*, *Eulophidae* and *Braconidae* insect families. These all belong to the larger group of parasitic wasps. About 14% of the asparagus miner pupae were parasitized by the two most abundant groups.

ASPARAGUS MINER CHEMIGATION TRIAL

Since asparagus miner larvae feed inside the stems, contact insecticides are unable to reach or control them. Growers are looking for ways to minimize damage by the larvae using chemigation. Increasing drouth periods during Michigan summers are forcing growers to invest into watering equipment for their asparagus fields, therefore using a drip system to deliver a systemic insecticide to reduce asparagus miner larval populations is currently being investigated.

Here are the results for the 2012 season so far, which covers the first generation of miners:



2012 Asparagus insecticide trial:

Trt #	Compound	Rate	Type
1	Untreated		
2	Scorpion 35 SL	10.5 fl oz/A	drip
3	Scorpion 35 SL	13 fl oz/A	drip
4	Admire Pro	10.5 fl oz/A	drip
5	Admire Pro	14 fl oz/A	drip
6	Durivo	13 fl oz/A	drip
7	Platinum	17 fl oz/A	drip
8	Coragen	7.5 fl oz/A	drip
9	Movento 240 SC	8 fl oz/A	foliar
	(2 nd app 7d post) + MSO		0.5% v/v
10	Movento 240 SC	8 fl oz/A	foliar
	(2 nd app 14d post) + MSO		0.5% v/v