

Integrated pest management for soybean aphid, *Aphis glycines* Matsumura  
(Homoptera: Aphididae), in the North Central U.S.

A DISSERTATION  
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF MINNESOTA  
BY

Brian Patrick McCormick

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FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

David W. Ragsdale, Advisor

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# Integrated Pest Management For Soybean Aphid *Aphis Glycines* *Matsumura* Hemiptera Aphididae In The North Central United States

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**Summary :** Free integrated pest management for soybean aphid *Aphis glycines* *matsumura* hemiptera aphididae in the north central united states pdf download - the goal of my research was to develop the foundational components for an integrated pest management ipm program for soybean aphid *Aphis glycines* *matsumura* on soybean *Glycine max* L merrill and understand the key environmental factors governing aphid population dynamics specifically my objectives were to 1 quantify the relationship between aphid densities and yield loss under field conditions in which biotic and abiotic factors were allowed to influence soybean aphid densities 2 evaluate effectiveness and length of control of thiamethoxam when applied to soybean seed in suppressing soybean aphid populations in minnesota 3 determine the optimal and upper developmental temperatures for apterous soybean aphid growth and reproduction under controlled conditions focusing efforts on temperatures common during mid-summer in the north central us 4 determine the supercooling points scp of various soybean aphid life stages under controlled laboratory conditions and to determine the annual probability that winter temperatures within the north central region of the united states would equal or fall below the mean scp of soybean aphid eggs and 5 describe the vertical distribution of soybean aphid within a soybean plant over time and define optimal sample units of varying sizes by testing the ability of selected sample units to estimate whole-plant aphid densities results from my research will help minimize the environmental e g non-target organisms economic e g cost of application insecticide and labor and human health consequences of excessive insecticide usage by providing more accurate forecasts of population growth the goal of future research should be to reduce the frequency of insecticide applications to soybean by modifying current economic thresholds as to account for mortality caused by natural enemies this in itself is a challenging endeavor

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# PDF INTEGRATED PEST MANAGEMENT FOR SOYBEAN APHID APHIS GLYCINES MATSUMURA HEMIPTERA APHIDIDAE IN THE NORTH CENTRAL UNITED STATES

**management recommendations for soybean aphid (hemiptera ...** - management recommendations for soybean aphid (hemiptera: aphididae) in the united ... aphid, aphis glycines matsumura (hemiptera: ... soybean pest in the north ...

**management recommendations for soybean aphid (hemiptera ...** - aphid (hemiptera: aphididae) in the united states ... soybean aphid, aphis glycines matsumura (hemiptera: ... and is now the primary soybean pest in the north central ...

**biology of the soybean aphid, aphis glycines (hemiptera ...** - biology of the soybean aphid, aphis glycines (hemiptera: aphididae) ... the soybean aphid, aphis glycines. matsumura ... the north-central region of the united states ...

**field and forage crops soybean aphid (hemiptera: aphididae ...** - abstract soybean aphid, aphis glycines matsumura (hemiptera: ... of soybean in the north central united states. ... integrated pest management (ipm) for soybean ...

**population ecology relationship of soybean aphid ...** - ... populations of the exotic soybean aphid, aphis glycines matsumura ... (hemiptera: aphididae), is an exotic pest ... soybean aphid in the north central united ...

**biology of the soybean aphid, aphis glycines (hemiptera ...** - biology of the soybean aphid, aphis glycines (hemiptera: ... aphis glycines matsumura (hemiptera: aphididae), ... in the north-central region of the united states, ...

**greenhouse studies of soybean aphid (hemiptera: aphididae ...** - greenhouse studies of soybean aphid (hemiptera: aphididae) ... (aphis glycines matsumura, hemiptera: aphid ... soybean insect pest in the north central united states.

**f c what is the economic threshold of soybean aphids ...** - what is the economic threshold of soybean aphids (hemiptera: aphididae) ... abstract soybean aphid, aphis glycines matsumura ... central united states. current ...

**f c probability of cost-effective management of soybean ...** - probability of cost-effective management of soybean aphid (hemiptera: aphididae) in north ... soybean aphid, aphis glycines matsumura ... integrated pest management ...

**effect of host plant resistance and seed treatments on ...** - abstract the soybean aphid, aphis glycines matsumura ... in the north central region of the united states. ... tool in integrated pest management. in soybean, ...

**s b development and validation of node-based sample units ...** - estimating soybean aphid (hemiptera: aphididae) ... production in the north central united states. ... soybean aphid, aphis glycines matsumura ...

**b c Dp p impact of rag1 aphid resistant soybeans on ...** - mised when host plant resistance is widely used for pest management of soybean ... aphid, aphis glycines matsumura (hemiptera: ... north central united states and ...

**e p b field abundance and performance of hoverflies ...** - soybean production in the north-central united states. ... the soybean aphid, aphis glycines matsumura (hemiptera: aphididae), is a major pest of soybeans in

**within-plant distribution of soybean aphid (hemiptera ...** - ... (hemiptera: aphididae) ... abstract

the soybean aphid, *aphis glycines matsumura* (hemiptera: aphididae), ... cated integrated pest management ...

**density-dependent responses of natural enemies to soybean ...** - the soybean aphid, *aphis glycines matsumura* (hemiptera: ... throughout much of the north central united states ... together in soybean integrated pest management.

**2011 report of insecticide evaluation** - 2011 report of insecticide evaluation ... the confirmation of soybean aphid, *aphis glycines matsumura* (hemiptera: ... has drastically changed soybean pest management.

**field abundance and performance of hoverflies (diptera ...** - the soybean aphid, *aphis glycines matsumura* (hemiptera: aphididae), is a major pest of soybeans ... challenge to soybean production in the north-central united states.

**2012 report of insecticide evaluation - ent.iastate** - 2012 report of insecticide evaluation ... of soybean aphid, *aphis glycines matsumura* (hemiptera: ... scouting for soybean aphid. most ipm (integrated pest management) ...

**2013 report of insecticide evaluation** - 2013 report of insecticide evaluation ... of the north central region of the united states has ... of soybean aphid, *aphis glycines matsumura* (hemiptera: ...

**short communication - bioone** - short communication is horsenettle, *solanum carolinense* l. (solanaceae), an alternate host for soybean aphid, *aphis glycines matsumura* (hemiptera: aphididae)?

**2014 report of insecticide evaluation** - 2014 report of insecticide evaluation ... soybean aphid aphid, *aphis glycines matsumura* (hemiptera: ... soybean pest in the north central region and iowa

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**hexapod herald - entomology** - ducting research in integrated pest management, ... of soybean aphid (hemiptera: aphididae: *aphis glycines* ... soybean to soybean aphid (*aphis glycines matsumura*) ...