Brown Marmorated Stink Bug Working Group Priorities

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Submitted by:

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Research Priorities

Rank	Research Priority	Mean Score	# Responders
1	Development of IPM-friendly management tactics	86	33
2	Studies of basic BMSB behavior (host preferences, movement, response to visual cues)	83	33
3	Biocontrol agents-identification and study of parasitoids, fungal pathogens, and predators	82	33
4	Impact of landscape and habitat on population	79	33
5	Studies of basic BMSB biology (physiology, generations)	79	33
6	Determine factors affecting population densities	72	33
7	Host utilization, preference, and range	70	33
7	Examine overwintering biology (e.g. triggers for seeking and leaving sites; overwintering mortality factors)	70	33
8	Define damage diagnostics, economics injury thresholds	68	33
8	Role of the guy symbionts and their potential for management	68	33
8	Response of indigenous natural enemies in relation to BMSB densities and their potential for management	68	33
9	Evaluate efficacy and host range of candidate classical biological control agents	67	33
9	Crop susceptibility and timing	67	33
9	Further study of pheromone-based monitoring (e.g. active space, trap design, attractants)	66	33
10	Examination of potential for trap-cropping	63	33
10	Evaluation of parasitoid host specificity	63	33
11	Investigation of host-plant volatiles as attractants	62	33
12	Standardized sampling methods	61	33
12	Evaluate effects of BMSB management plans on beneficial agents, including pollinators	61	33
13	Mapping and assessment of distribution	59	33
14	Develop forecasting models to identify BMSB risk to new areas	57	33
15	Assess secondary pest outbreaks related to chemical control of BMSB	54	33

Rank		Mean Score	# Responders
16	Standardize multiple methods for screening of new insecticide materials	53	33
17	Develop baseline insecticide toxicity data for resistance monitoring	52	33
18	Evaluate potential impacts of cultural control measures	50	33
18	Identification of potential repellents	50	33
19	Validate current physiology and phenology models in laboratory	49	33
19	Evaluate long term sublethal effects on BMSB (e.g. effects on reproduction)	49	33
19	Evaluate landscape-level/watershed-scale population distribution	49	33
20	Determine low and high temperature thresholds for all stages	48	33
20	Risk analysis of overwintering populations in natural landscapes	48	33
20	Determine how far BMSB will travel to overwintering sites	48	33
21	Determine why BMSB appears to not be present in coastal plain areas	47	33
22	Develop economic models that include injury, monitoring and management costs	46	33
22	Determine the impact of elevation on overwintering sites	45	33
23	Study potential damage of harvested/value-added crops by contamination with BMSB	42	33
24	Evaluate impact of orchard groundcover management	40	33
25	Assessment of displacement of native stink bugs	39	33
25	Evaluate potential impact of vertebrate predation	39	33
26	Examination of cross-attractancy of BMSB and green stink bugs	37	33
26	Development of toxicants and inhibitors for plant transgenic delivery	37	33
26	Determining monitoring strategies for urban areas	37	33
27	Assessment of economic impact in urban environment	30	33

Priority rank is based on scores provided by individual Working Group participants (importance of a particular priority on a scale of 0-100), calculating the mean value for each, and ranking them accordingly.

Extension Priorities

Rank	Extension Priority	Mean Score	# Responders
1	Education programs to growers and the general public	83	30
2	Develop revised and unified management plans	77	30
2	Coordinate efforts of state and regional extension programs	77	30
3	Deliver economic injury thresholds	76	30
4	Educating professionals to pest ID and diagnosis of injury	74	30
5	Educational programs relevant to invasive biology using BMSB	66	30
5	Educational programs relevant to development of biological control projects	66	30
6	Demonstrate field application techniques for chemical control	61	30
7	Develop treatment recommendations and guidelines for urban environments	60	30
8	Raise awareness of importance of BMSB as pest – APHIS, local political channels, etc.	52	30
9	Educational programming for structural and landscape industries	51	30
9	Extension outreach and education programming for urban environment/homeowners	51	30
10	Include education programs relevant to classical biological control	50	30
11	Initiate public awareness campaigns – posters, public service announcements, educational materials, etc.	48	30
11	Use BMSB as an opportunity to educate children	48	30
12	Structure extension groups by commodity or region	46	30
13	Direct homeowners to local politicians for complaints	42	30
13	Initiate an eXtension community of practice (COP), potentially as a central website for information	42	30

Priority rank is based on scores provided by individual Working Group participants (importance of a particular priority on a scale of 0-100), calculating the mean value for each, and ranking them accordingly.

Regulatory Priorities

Rank	Regulatory Priority	Mean Score	# Responders
1	Use of toxins in combination with attractants (regulatory status)	75	27
2	Product testing and labeling of new active ingredients/products	70	27
3	Coordinate interagency and interdisciplinary funding	69	27
3	Define the economic and ecological threat	69	27
4	Expand use of existing registered products	62	27

Priority rank is based on scores provided by individual Working Group participants (importance of a particular priority on a scale of 0-100), calculating the mean value for each, and ranking them accordingly.

Consumer Priorities

Rank	Consumer Priority	Mean Score	# Responders
1	Define triggers for movement into homes	73	27
2	Forecasting population size	67	27
3	Preventative measures for reducing entry into human-made structures	62	27
4	Important biological control agents around residential areas	58	27
5	Determining repeated entry and exit by BMSB from overwintering sites	50	27
6	Development of IPM friendly management strategies for homeowners	43	27
7	Evaluate efficacy of insecticides/killing agents for homeowners	39	27
8	Evaluate materials for home-garden and home-landscape protection	36	27

Priority rank is based on scores provided by individual Working Group participants (importance of a particular priority on a scale of 0-100), calculating the mean value for each, and ranking them accordingly.

Overall Priorities

Rank		Overall Priority	# Votes
1	Research	Development of IPM-friendly management tactics	11
2	Research	Studies of basic BMSB behavior (host preferences, movement, responses to visual cues)	10
3	Extension	Education programs to growers and the general public	9
4	Research	Biocontrol agents—identification and study of parasitoids, fungal pathogens, and predators (native and foreign)	8
5	Research	Define damage diagnostics, economics injury thresholds	6
6	Research	Develop forecasting models to identify BMSB risk to new areas	5
7	Research	Studies of basic BMSB biology (physiology, generations)	4
7	Research	Mapping and assessment of distribution	4
8	Research	Further study of pheromone-based monitoring (e.g. active space, trap design, attractants)	3
8	Research	Evaluation of parasitoid host specificity	3
8	Research	Impact of landscape and habitat on population	3
8	Research	Crop susceptibility and timing	3
8	Extension	Develop revised and unified management plans	3

Overall priority rank is based on Working Group participants designating their five top priorities across all categories; those priorities receiving designations by at least 10% of the membership were ranked.