

Bean leaf beetle management in soybean

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Outline

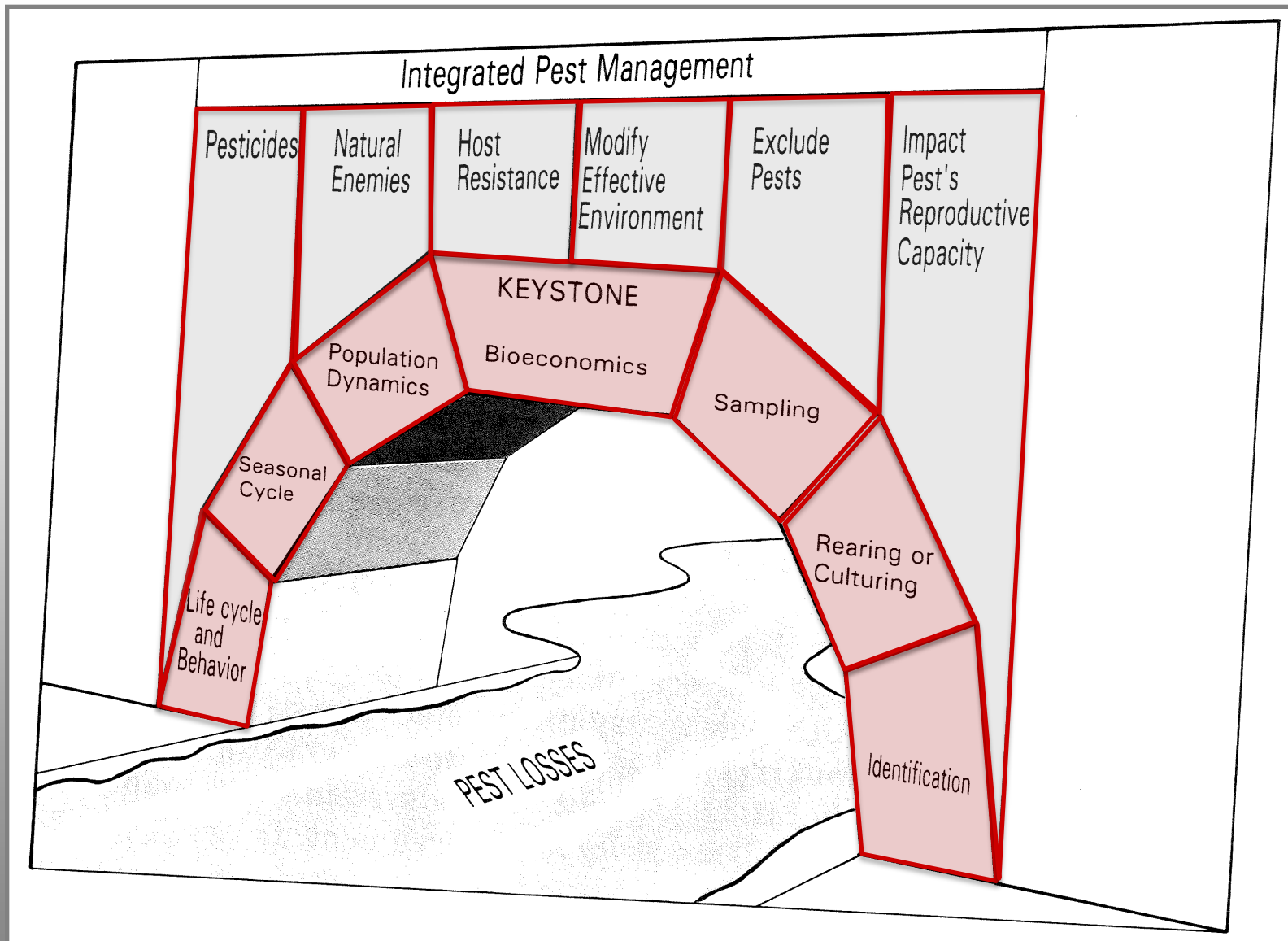
- IPM principles
- Cultural control
- Sampling
- Thresholds



What is IPM?

- Integrated Pest Management
 - Multiple, proactive tactics
 - Suppress pest pressure
 - Sustainable crop production
- More than biological control!





Cultural Control

- Improve overall production standards
- Healthy, strong plants will yield better



BLB/BPMV field history

- What happened last year?
- Heavy BLB numbers in fall?
- Symptoms of BPMV?
- Significant yield reductions?
- Did you have to discount your seed?
- Overall production costs?

How to sample for BLB

- Start looking early
- Use drop cloth during VE-V5 stages
- Estimate beetles per foot of row

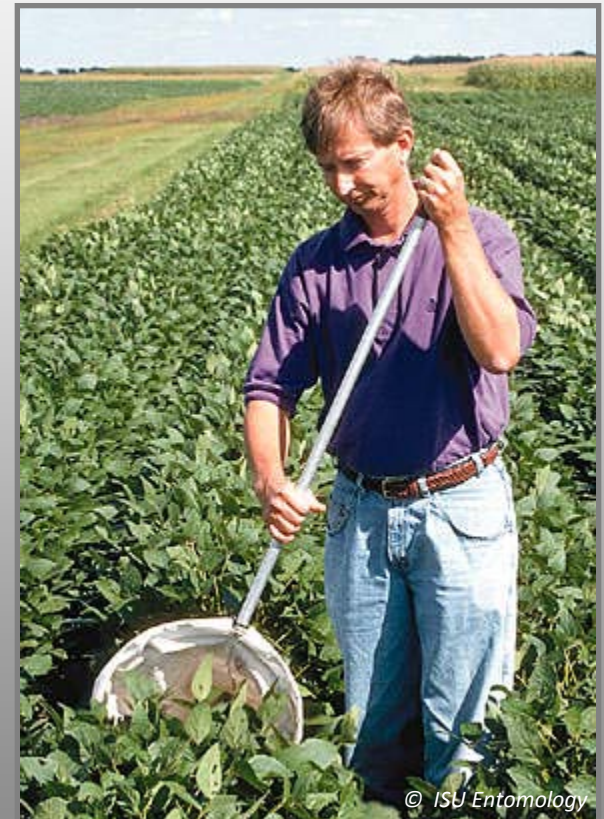


How to sample for BLB

Across two rows





Three feet along a row



Management options

- No commercial varieties for BLB or BPMV
 - Do not use mottled or discolored seed
- Date of planting, later is better
- Insecticides (seed and/or foliar)

Are seed treatments a good idea?

- Why 
 - Convenience factor
 - Persistent, early season pest pressure
- Why not 
 - \$\$\$
 - Genetic resistance
 - Resurgence or replacement of pests
 - Negative impacts on natural enemies?

Are seed treatments worth it?

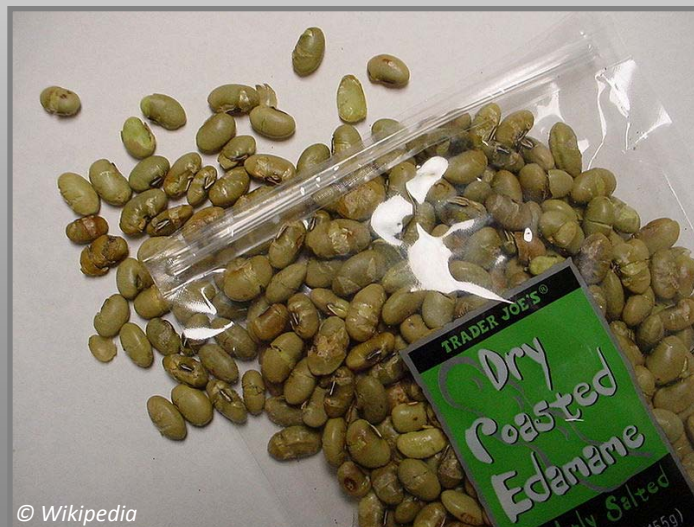
- Use a flow chart!

www.ent.iastate.edu/soybeaninsects/node/136

- Yes, if history shows record of damage
 - Yield reductions due to BPMV
- Otherwise, use a foliar when adult BLB exceed thresholds

Take into consideration...

- Food-grade soybean at most risk
- Strict seed coat grain standards
- Does not affect color beneath seed coat



Foliar applications

- Sample regularly for timely treatments
- Know ALL your control costs
 - Product, fuel, delivery
- Predict market values
- Get good coverage!
- Ask Extension Service for local thresholds

Bean leaf beetle threshold for overwintering adults (per plant)

	VC			V1			V2		
control	\$6	\$8	\$10	\$6	\$8	\$10	\$6	\$8	\$10
\$5/bu	2.4	3.2	4.0	3.7	5.0	6.2	5.9	7.8	9.8
\$6/bu	2.0	2.7	3.4	3.1	4.1	5.2	4.9	6.5	8.1
\$7/bu	1.6	2.2	2.8	2.5	3.2	4.2	3.9	5.2	6.4
\$8/bu	1.2	1.7	2.2	1.9	2.3	3.2	2.9	3.9	4.7
\$9/bu	0.8	1.2	1.6	1.3	1.4	1.2	1.9	2.6	3.0
\$10/bu	0.4	0.7	1.0	0.7	0.5	0.2	0.9	1.3	1.3

- Feeding damage probably not economic unless concerned about BPMV

Bean leaf beetle threshold for 1st generation adults (per 20 sweeps)

<i>Control</i>	<i>\$7</i>	<i>\$8</i>	<i>\$10</i>	<i>\$12</i>	<i>\$15</i>
<i>\$5/bu</i>	23.0	26.2	32.6	39.0	48.6
<i>\$6/bu</i>	19.3	22.0	27.3	32.6	40.6
<i>\$8/bu</i>	14.6	16.6	20.3	24.6	30.6
<i>\$10/bu</i>	11.8	13.4	16.6	19.8	24.6
<i>\$13/bu</i>	9.2	10.5	12.9	15.4	19.1

- Economic thresholds rarely exceeded for bivoltine or multivoltine regions
- Use counts to help manage 2nd/3rd generations

Bean leaf beetle threshold for 2nd generation adults (per 20 sweeps)

<i>Control</i>	<i>\$10</i>	<i>\$11</i>	<i>\$12</i>	<i>\$13</i>	<i>\$14</i>	<i>\$15</i>	<i>\$16</i>	<i>\$17</i>
<i>\$7/bu</i>	4.45	4.89	5.34	5.78	6.22	6.67	7.11	7.56
<i>\$8/bu</i>	3.89	4.28	4.67	5.06	5.45	5.84	6.22	6.61
<i>\$9/bu</i>	3.46	3.8	4.15	4.50	4.84	5.19	5.53	5.88
<i>\$10/bu</i>	3.11	3.42	3.73	4.05	4.36	4.67	4.98	5.29
<i>\$11/bu</i>	2.83	3.11	3.40	3.68	3.96	4.24	4.53	4.81
<i>\$12/bu</i>	2.59	2.85	3.11	3.37	3.63	3.89	4.15	4.41
<i>\$13/bu</i>	2.39	2.63	2.87	3.11	3.35	3.59	3.83	4.07
<i>\$14/bu</i>	2.22	2.45	2.67	2.89	3.11	3.33	3.56	3.78

Leave a check strip!

- Compare yield to treated area



BLB Management Summary

- Can be an economic pest
- BPMV is most important
- Use IPM tools for suppression
- Sample and make timely applications



Where to get more information

- **Soybean Insects Guide**

www.ent.iastate.edu/soybeaninsects/bean_leaf_beetle

- **ICM News, Iowa State University**

www.extension.iastate.edu/CropNews

- **North Central Soybean Research Program**

www.ncsrp.com