



# Damage Assessments of BMSB in NJ Fruit Crops and Research Plans for 2011

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- Damage in 2010
- Some field research plans
- Management approaches in 2011

2009 -

BMSB cited in a few peach orchards

2010 -

Up to 90+% damage

Present in peach, apple, pear, grape  
blueberry, raspberry, sweet corn,  
peppers, tomatoes, field corn, soybeans.  
Growers not aware of the problem until  
mid July. Many grower still not fully  
aware until the fall.

2011 -

Everybody knows

Everybody is scared

Where do we go from here?

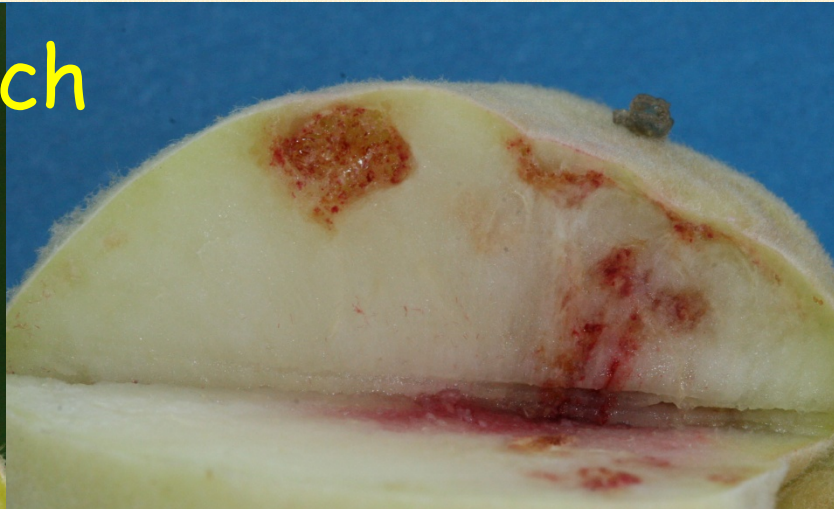


# The Problem - Many Hosts





# Peach



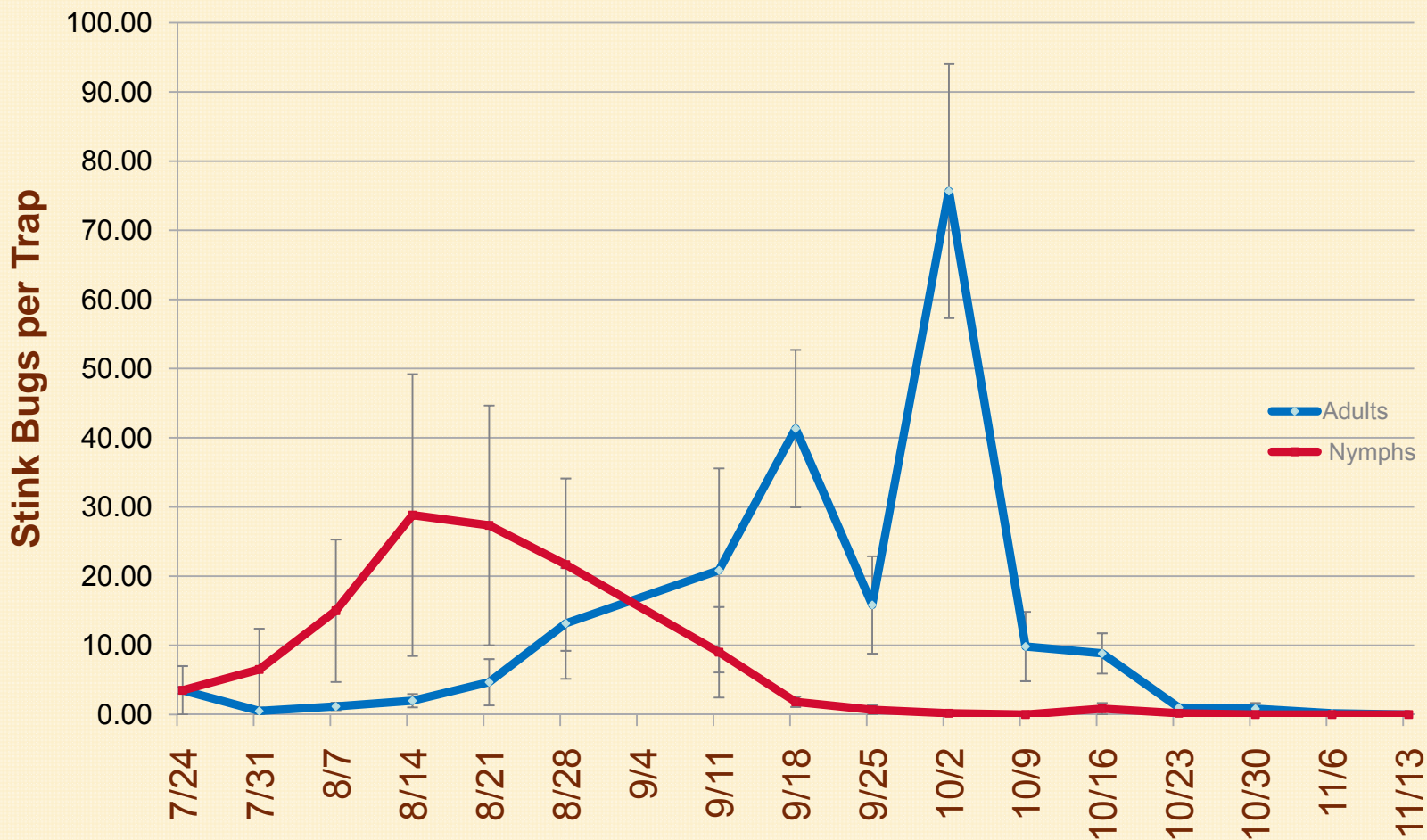


# Apple



# BMSB 2010 Hanging Traps - Apple

n=6





Each sample = 100 fruit, 10 fruit from each of 10 trees edge row; 100 fruit, 10 from each of 10 trees interior rows. Each fruit sliced and rated for number of feeding spots:  $\geq 10$ , 9, 8, 7, 6, 5, 4, 3, 2, 1, 0

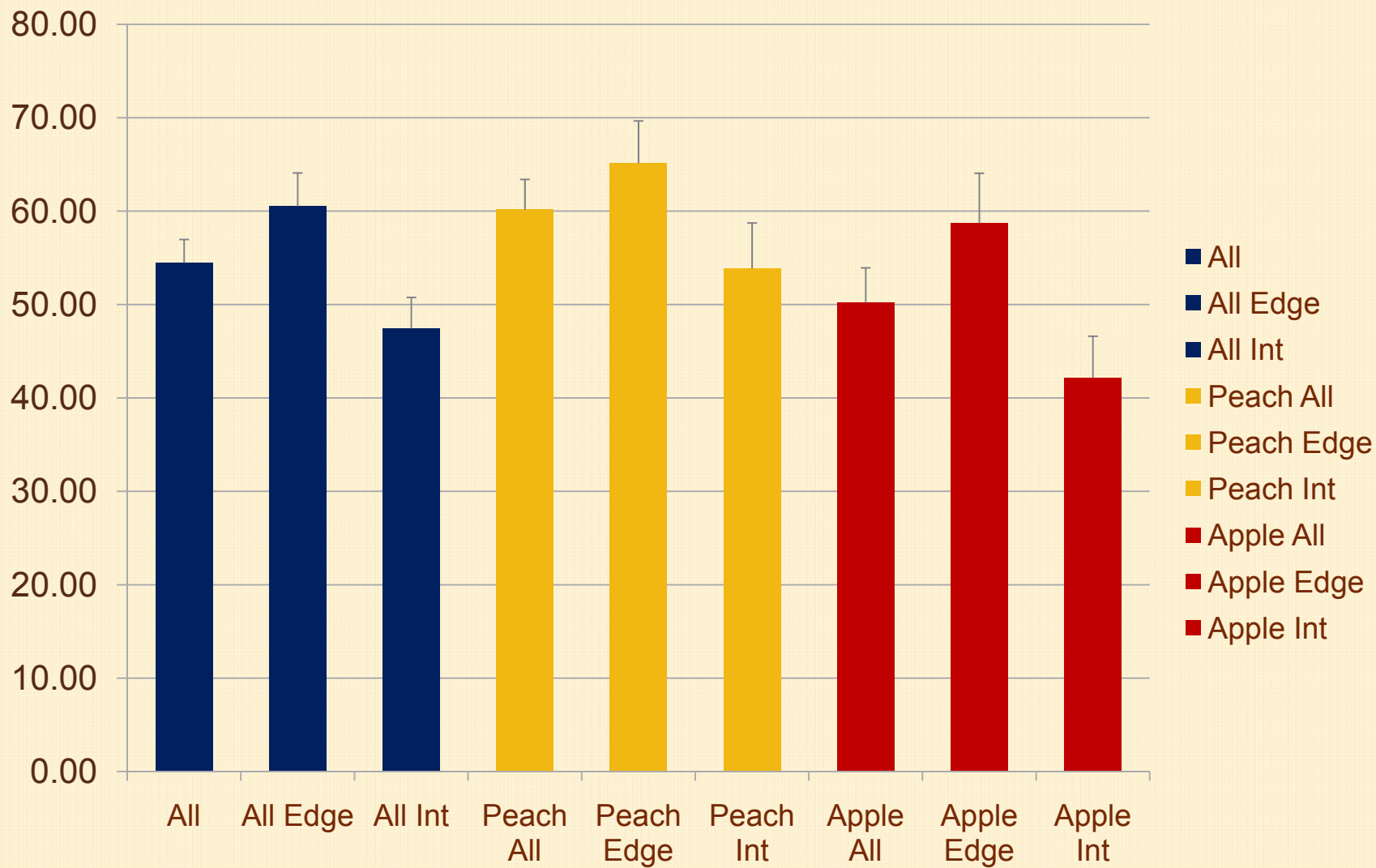
### Sample Summary

No. Samples	68
Peach	32
Apple	34
Asian Pear	2
No. Farms	18



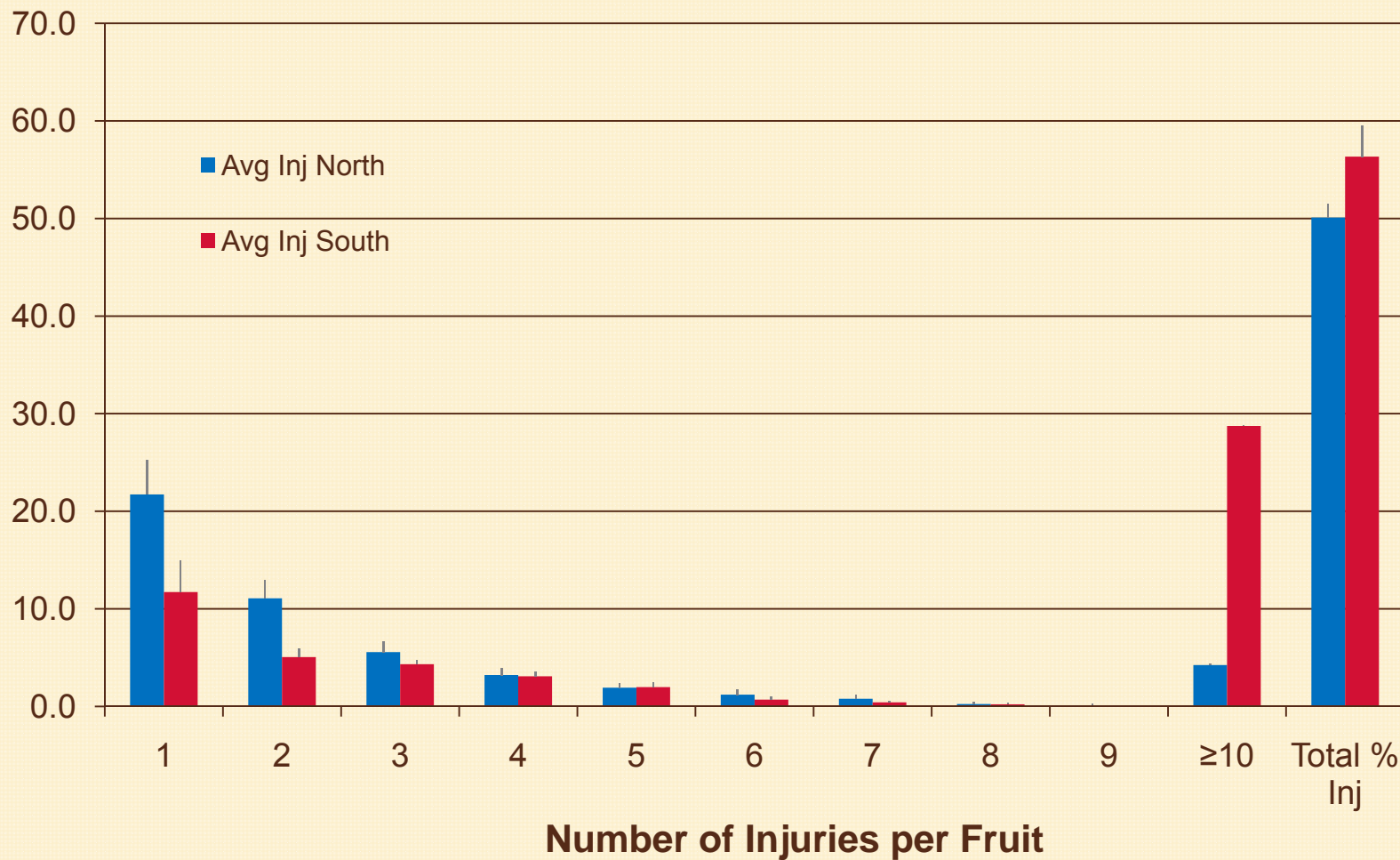
Date	Crop	Variety	Date	Crop	Variety
8/10	Peach	Harrow beauty	8/27	Asian Pear	
8/12	Peach	Jerseyqueen	9/14	Peach	Encore
8/12	Peach	Blushing Star	9/2	Apple	Gala
8/13	Peach	Sweetenup	9/13	Apple	Cameo
8/13	Peach	Glowing star	9/15	Apple	Red Del
8/16	Peach	Mix	9/15	Apple	Gold Del
8/23	Peach	Mix	9/15	Apple	Mutsu
8/30	Peach	Cresthaven	9/15	Apple	Red Del
8/17	Peach	Encore	9/16	Apple	Empire
8/16	Peach	Jerseyqueen	9/16	Apple	Red Del
8/16	Peach	Cresthaven	9/20	Apple	Red Del
8/23	Peach	Cresthaven	9/13	Apple	Fuji
8/24	Peach	Encore	9/17	Apple	Macoun
8/27	Peach	PF 17	9/21	Apple	Red Del
8/30	Peach	Parade	9/29	Apple	Mix
8/31	Peach	Encore	10/6	Apple	Granny Smith
9/7	Peach	Encore	10/6	Apple	Rome
8/27	Apple	Mix	10/14	Apple	Fuji

### Avg % BMSB Damage - 2010





## % Inj. per Fruit South vs North - 2010



# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
1	4/2	Esteem	0.31
Fuji	5/2	Assail	0.31
	5/2	Sevin	0.75
	5/14	Danitol	1
	5/29	Avaunt	0.38
	6/11	Avaunt	0.31
	6/22	Provado	0.38
	7/15	Assail	0.5
	7/27	Assail	0.5
	8/29	Assail	0.5

% BMSB Damage: 66.7 edge, 45.9 interior



# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
2	4/1	Nufos 4E	0.57
Apple	5/1	Assail	0.14
Mix	5/13	Imidan	0.43
	5/13	Sevin XLR	1.7
	5/26	Imidan	0.86
	6/11	Asana XL	2.86
	6/25	Imidan	0.43
	7/16	Assail	0.18
	7/28	Imidan	0.43
	8/17	Imidan	0.43

% BMSB Damage: 59.0 edge, 56.0 interior

# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
3	4/1	Lorsban4E	2
Cameo	4/10	Assail	0.25
	5/3	Imidan	3
	5/25	Assail	0.38
	6/18	Imidan	3
	7/15	Imidan	3
	8/4	Sevin	3
	8/17	Leverage	0.28
	8/30	Leverage	0.28

% BMSB Damage: 49.0 edge, 53.0 interior



# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
4	4/20	Imidan	1.5
Cresthaven	4/30	Imidan	1.5
	5/12	Imidan	1.5
	5/25	Imidan	1.5
	6/10	Asana XL	0.32
	6/25	Lannate LV	1.03
	7/11	Assail	0.26
	7/27	Sevin XLR	1.5

% BMSB Damage: 53.0 edge, 53.0 interior

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
5	3/25	Damoil	32
Rome	4/1	Lorsban 4EC	2
	4/22	Imidan 70 WP	2.5
	4/28	Azinphos Methyl 50W	1.5
	5/7	Imidan 70 WP	2.5
	5/15	Imidan 70 WP	2.5
	5/15	Savey 50WP	0.19
	5/22	Imidan 70 WP	2.5
	5/30	Delegate	0.31
	6/5	Delegate	0.31
	6/5	Intrepid 2F	1
	6/21	Azinphos Methyl 50W	1
	7/5	Azinphos Methyl 50W	1
	7/19	Imidan 70 WP	2.5
	7/19	Portal	2
	8/3	Imidan 70 WP	2.5
	8/23	Imidan 70 WP	2.5

% BMSB Damage: 98.9 edge, 76.0 interior



# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
6	4/1	Lorsban 4EC	4
GoldDel	4/1	Oil-Sunspray 6E	32
	4/24	Guthion 50PVA	1
	5/1	Azinphos Methyl 50W	1.5
	5/10	Guthion 50PVA	1.5
	5/20	Imidan 70 WP	3
	6/2	Delegate	0.38
	6/14	Assail 70WP	0.31
	7/3	Azinphos Methyl 50W	1.2
	7/17	Imidan 70 WP	3
	7/31	Imidan 70 WP	3
	8/14	Imidan 70 WP	3
	8/28	Lambda T	0.13
	10/2	Lambda T	0.13

% BMSB Damage: 61.0 edge, 25.0 interior

# Insecticides vs Damage

## Insecticide Use 2010

Farm	Date	Insecticide	Rate/A Form lb/pt
7	4/14	Asana .66XL	0.75
Jerseyqueen	4/26	Asana .66XL	0.75
	5/4	Avaunt	0.38
	5/14	Actara	0.31
	5/21	Actara	0.31
	5/28	Asana .66XL	0.62
	6/10	Asana .66XL	0.62
	6/21	Asana .66XL	0.62
	6/30	Asana .66XL	0.62
	7/9	Asana .66XL	0.62
	7/15	Asana .66XL	0.62
	7/25	Asana .66XL	0.62

% BMSB Damage: 28.0 edge, 18.0 interior , AM Sprays

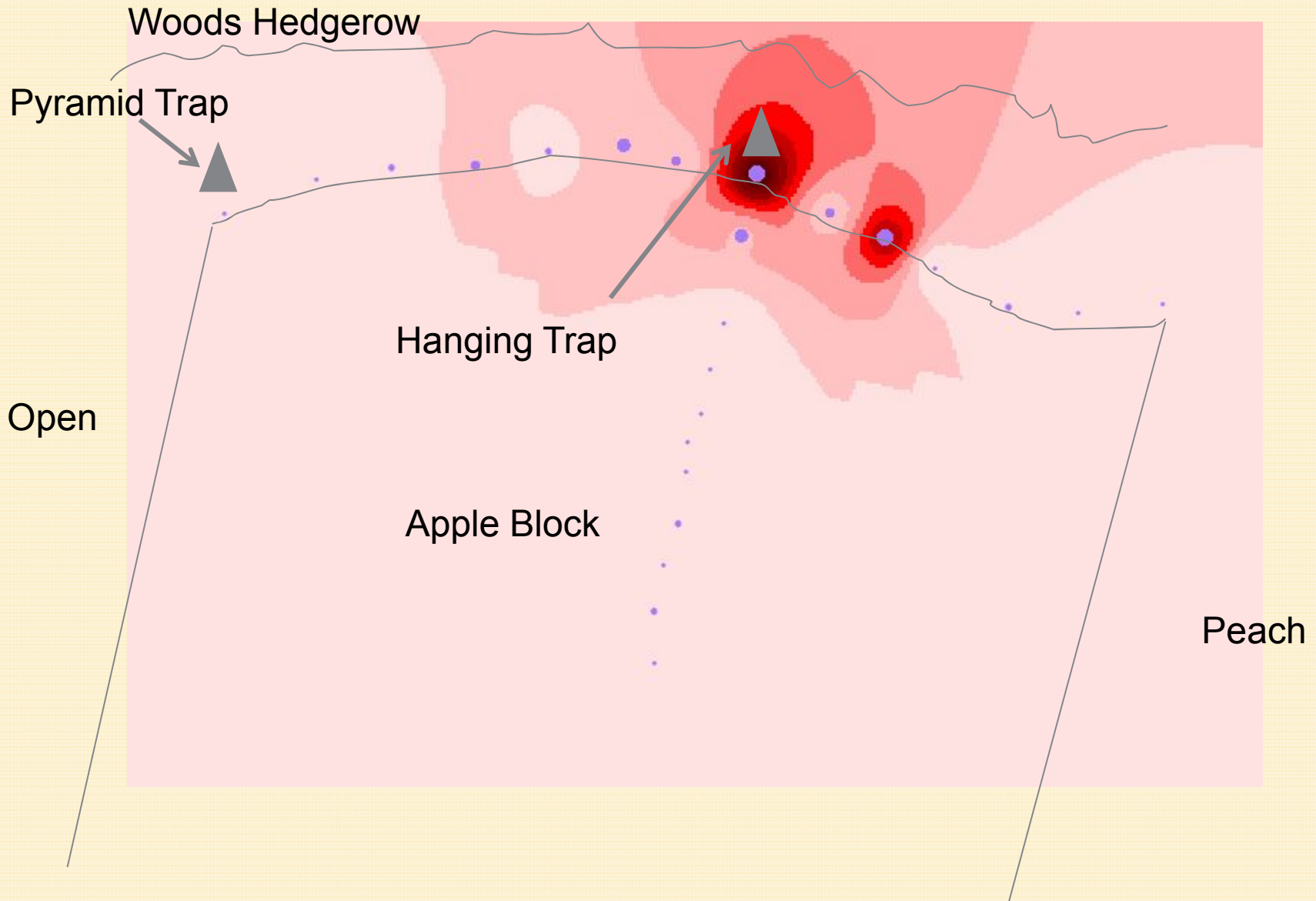








### % Injured Fruit w/> 10 Injuries



- Monitoring edges vs interior, treating edge vs broadcast.
- Monitoring: Hanging vs ground deployed traps, Speed of dispersal from edge, Relationship of exterior landscape.
- How do we put programs together w/o the fear and automatic heavy, broad spectrum overuse?
- Contrary to popular belief, mating disruption should not be dead.
- Commercial demo plots.



- Best materials may be old - OFM resistance, and resistance management or not control internal worms - therefore use
- Mating Disruption
- Thionex early w/ 1<sup>st</sup> BMSB
- Alternate:
  - \* Lannate (methomyl)
  - \* Permethrin or Danitol (fenpropathrin) or Baythroid (Beta-cyfluthrin) or  $\epsilon$ -cyhalothrin or Mustang (Zeta-cypermethrin)
  - \* Belay (clothianidin), Actara (thiamethoxam) or Scorpion/Venom (dinotefuran)
  - \* Broadcast vs. border sprays only

# Questions and Comments?

