

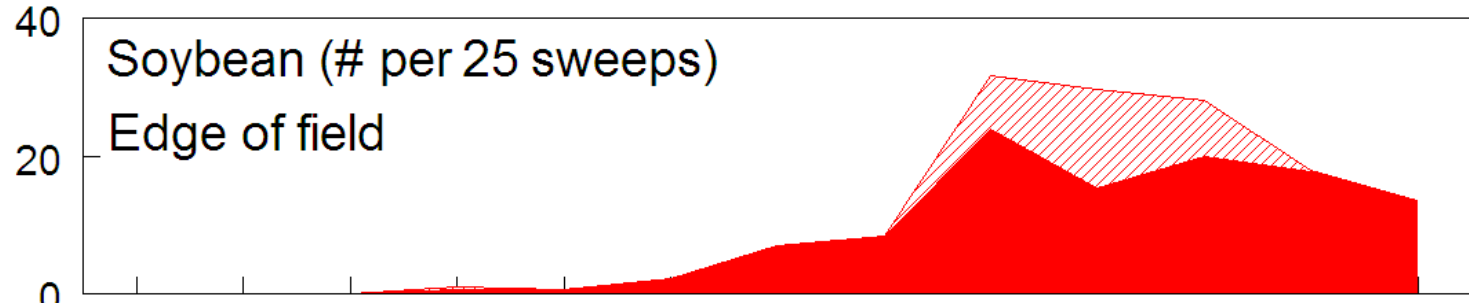
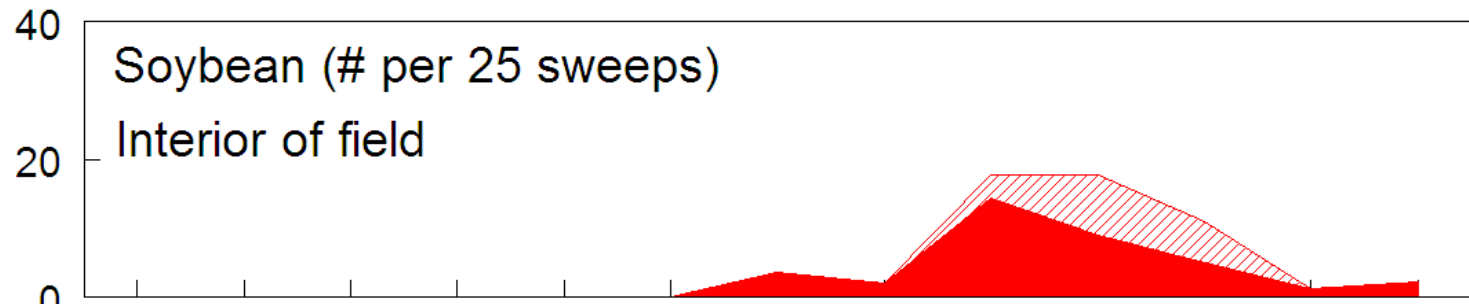
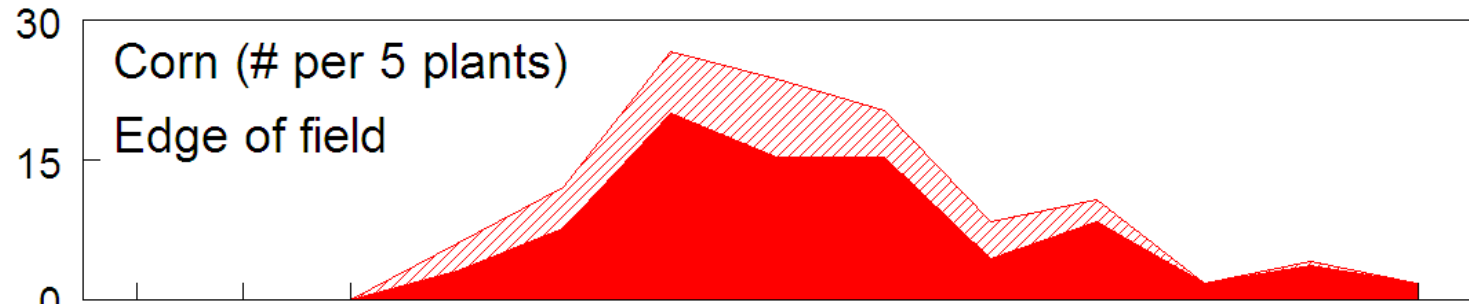
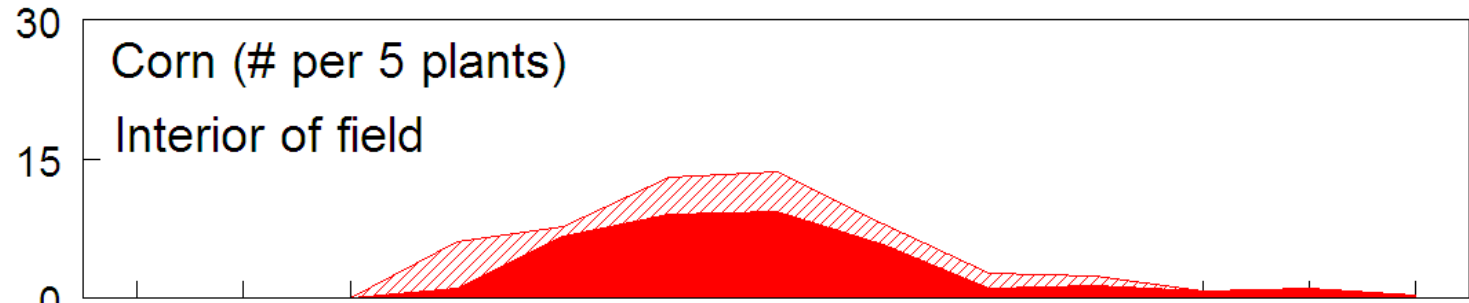
# Impact and Management of Brown Marmorated Stink Bug in Field Crops



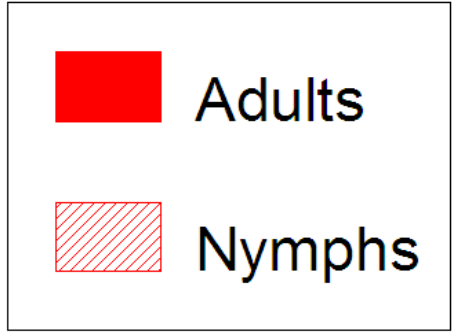
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Brown Marmorated  
Stink Bug  
Relative Abundance  
Edge vs. Interior

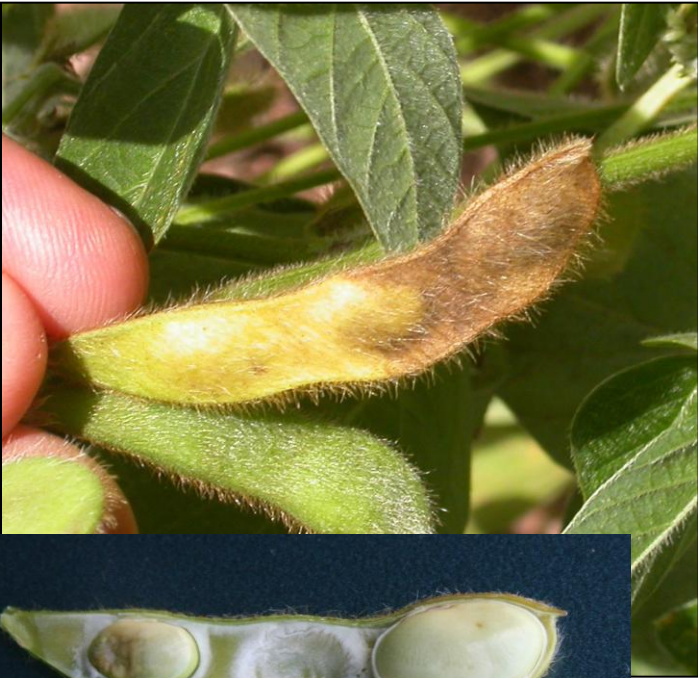


629 706 712 720 727 802 809 817 823 830 909 913 920  
Sampling dates

Data from Keedysville,  
WMREC, 2010



- Stink bugs move into soybean fields at the R4 (full pod) growth stage.
- Injury results in aborted pods, undeveloped pods, punctured and deformed seed.
- Reductions in seed quality and yield
- Delayed senescence (stay green)

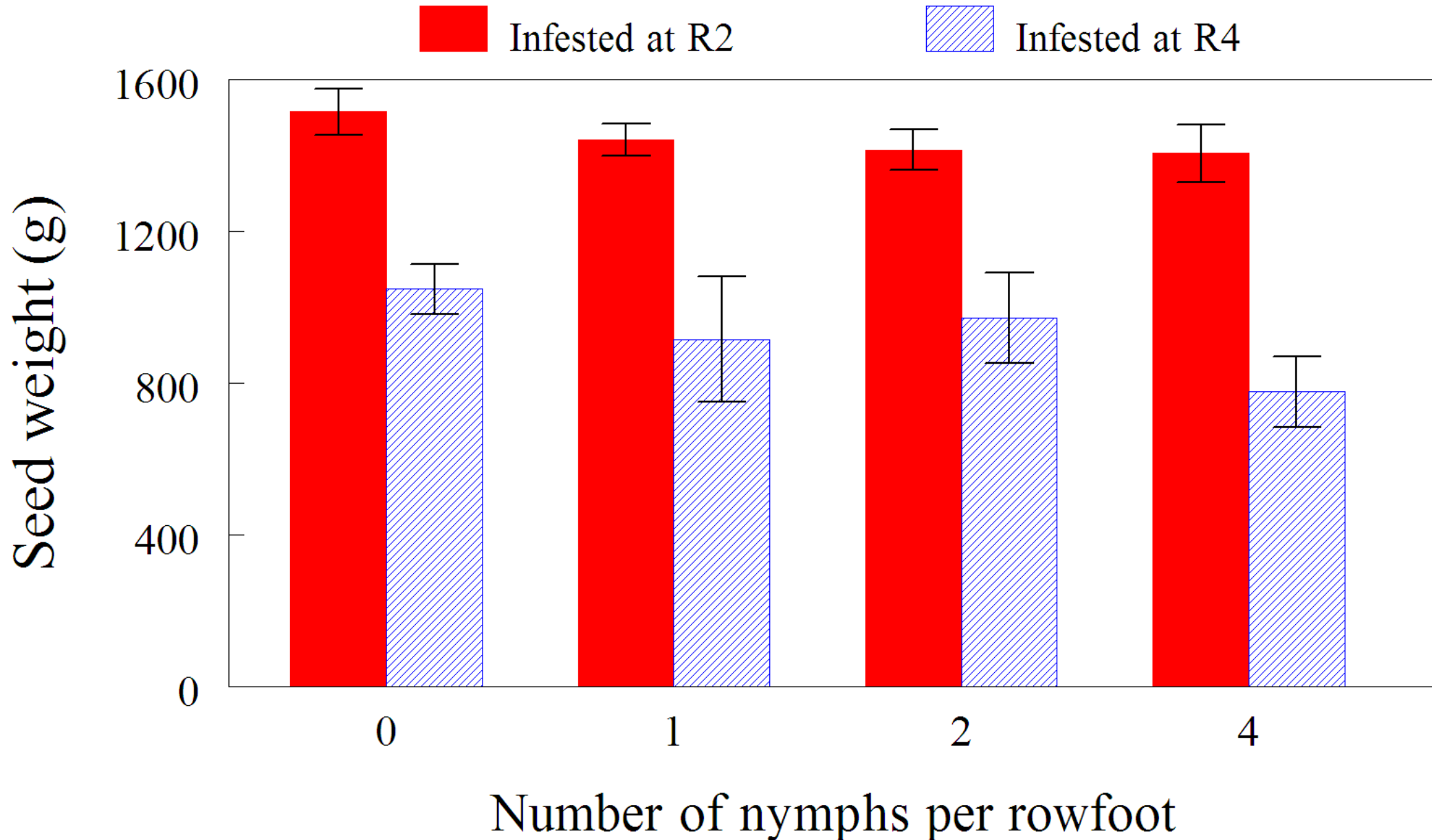




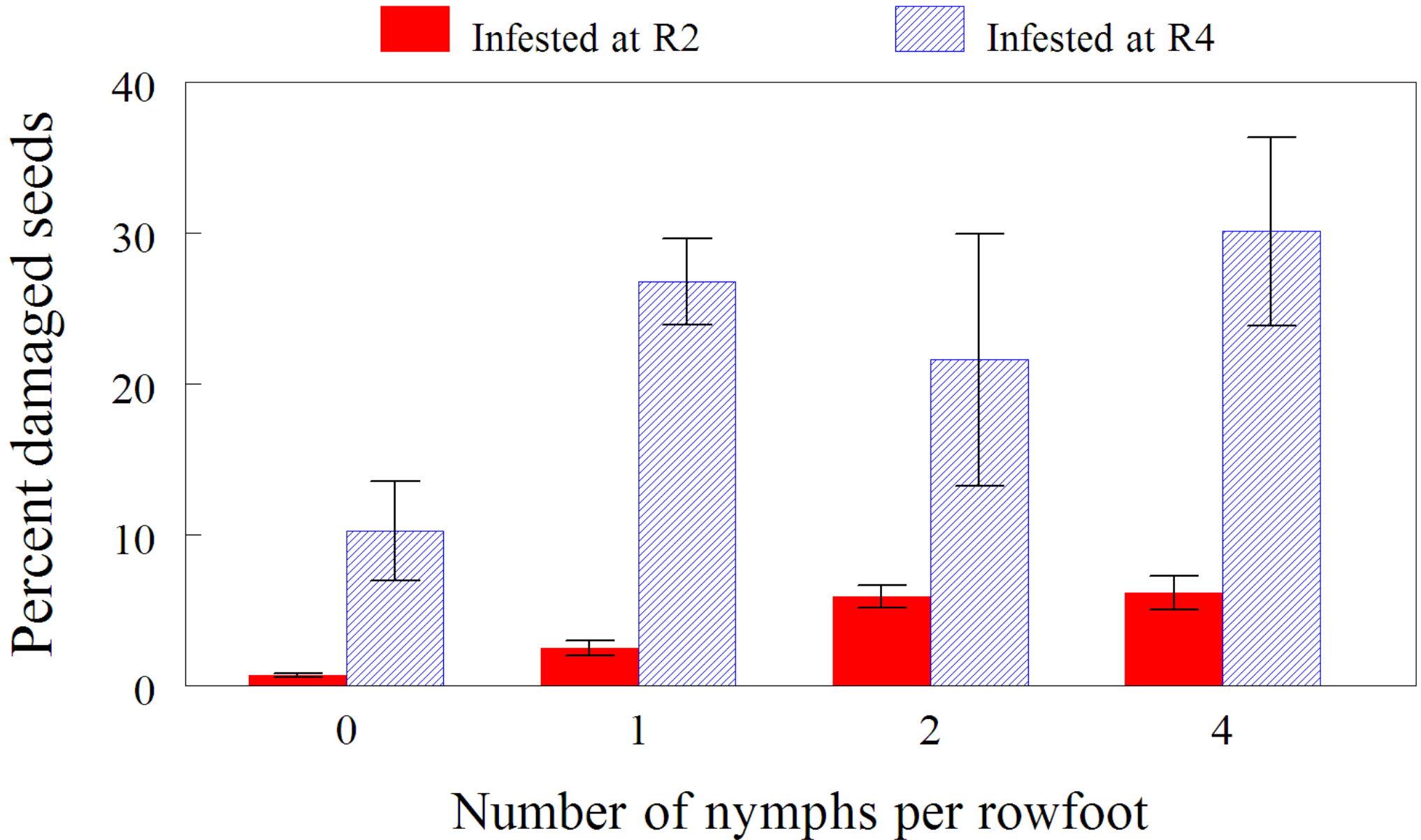
# Field cage studies: VA, MD and DE



Seed weight per 20 rowfeet of double-crop soybean plants enclosed in cages infested with BMSB nymphs at the R2 and R4 growth stages. 2010.



Percent of seeds damaged by BMSB in double-crop soybeans enclosed in cages infested with nymphs at the R2 and R4 growth stages. 2010.









# Stink bug feeding can also delay maturity, causing 'stay green' syndrome

Undamaged,  
maturing



**BMSB** damaged, 'stay-green'



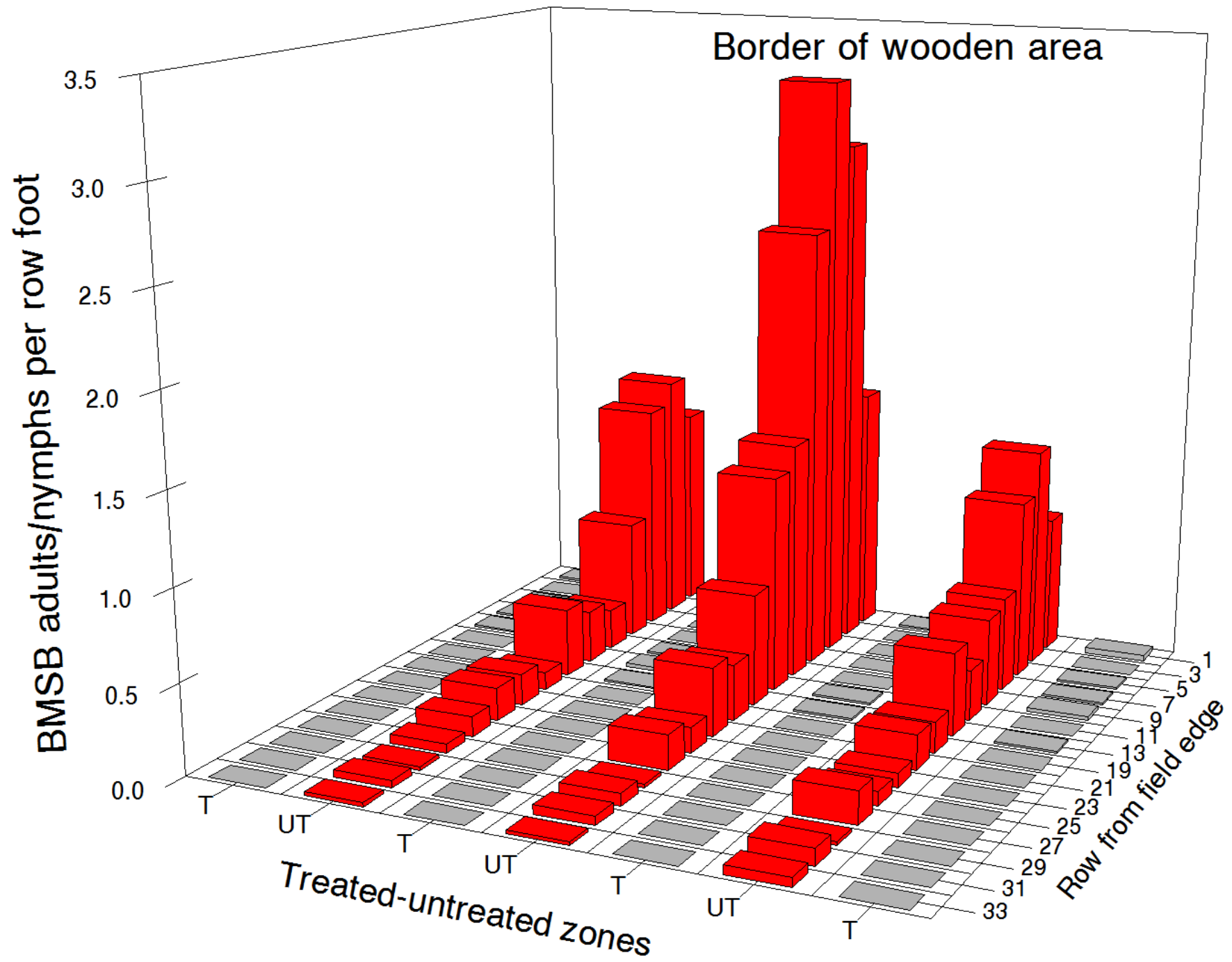


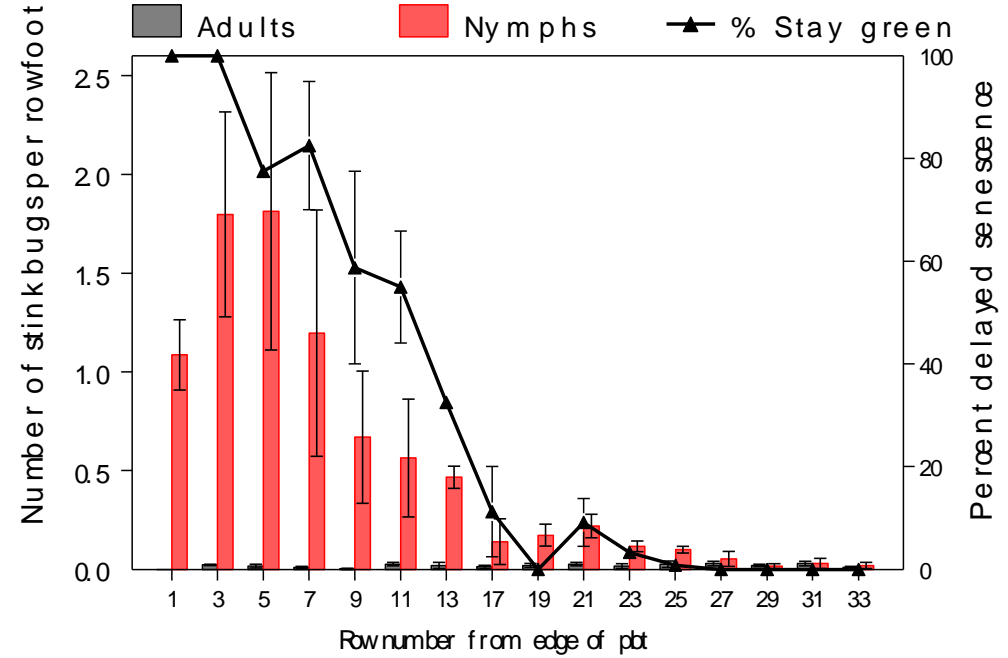
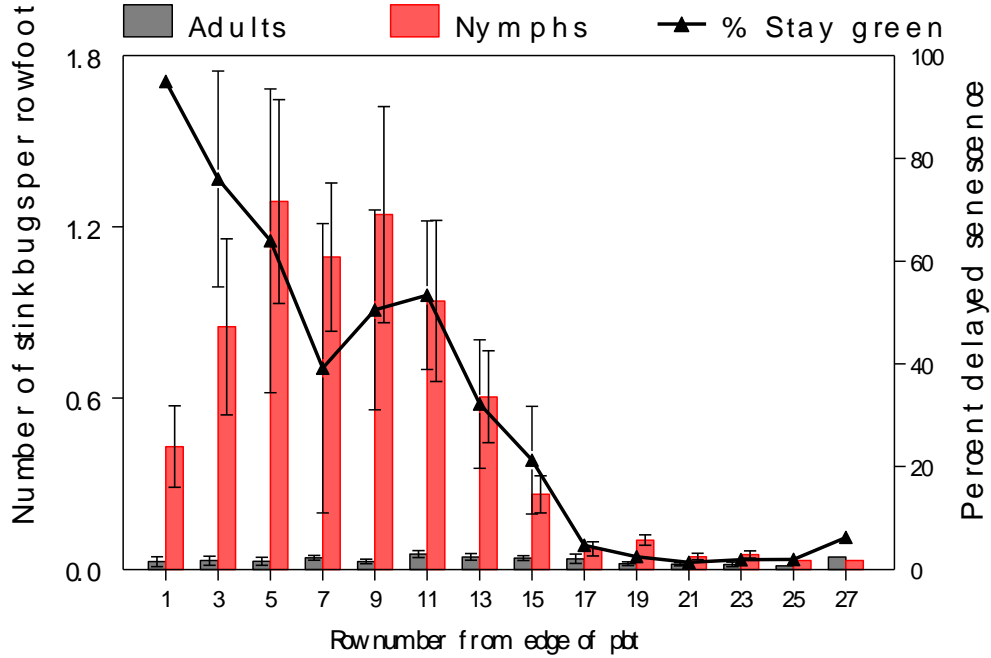
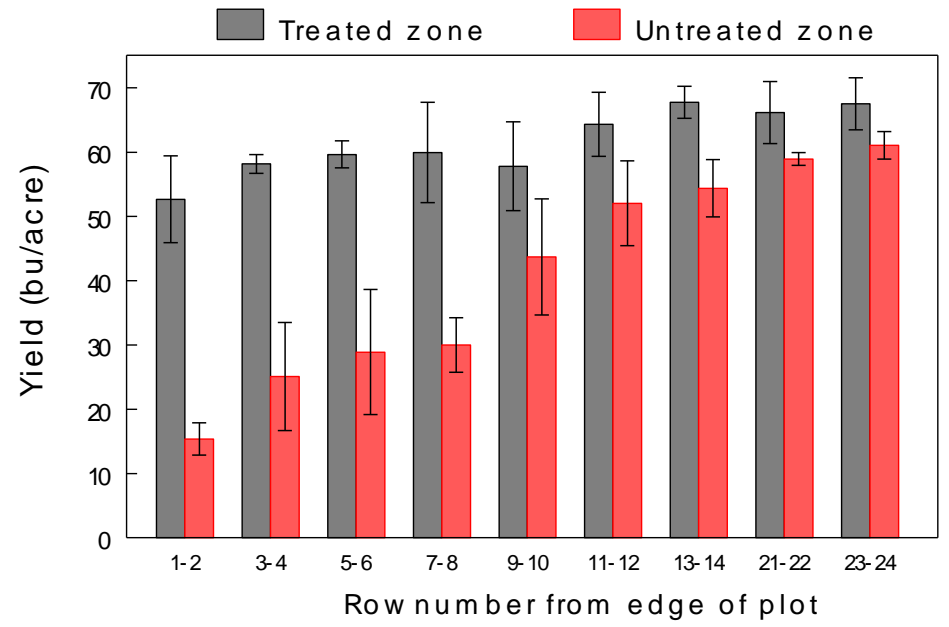
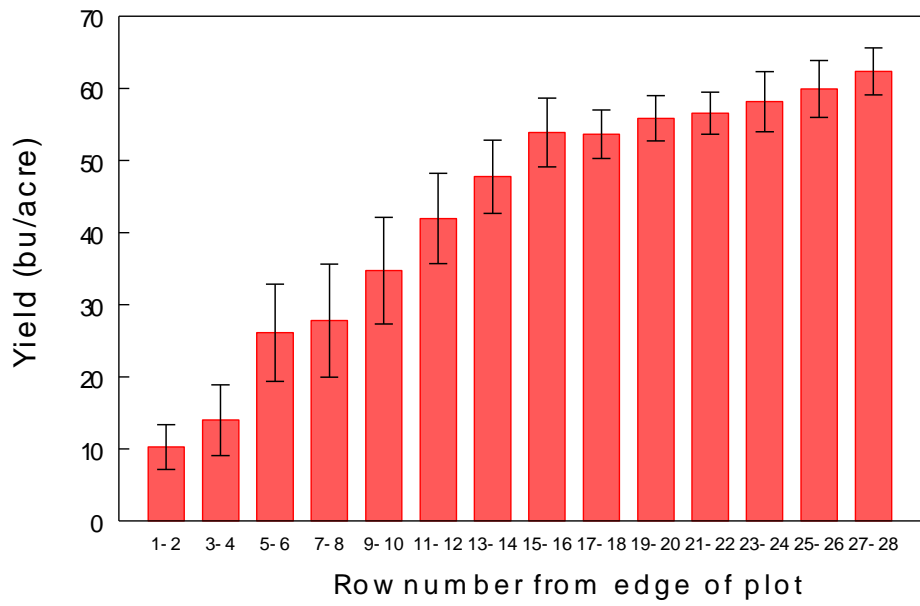








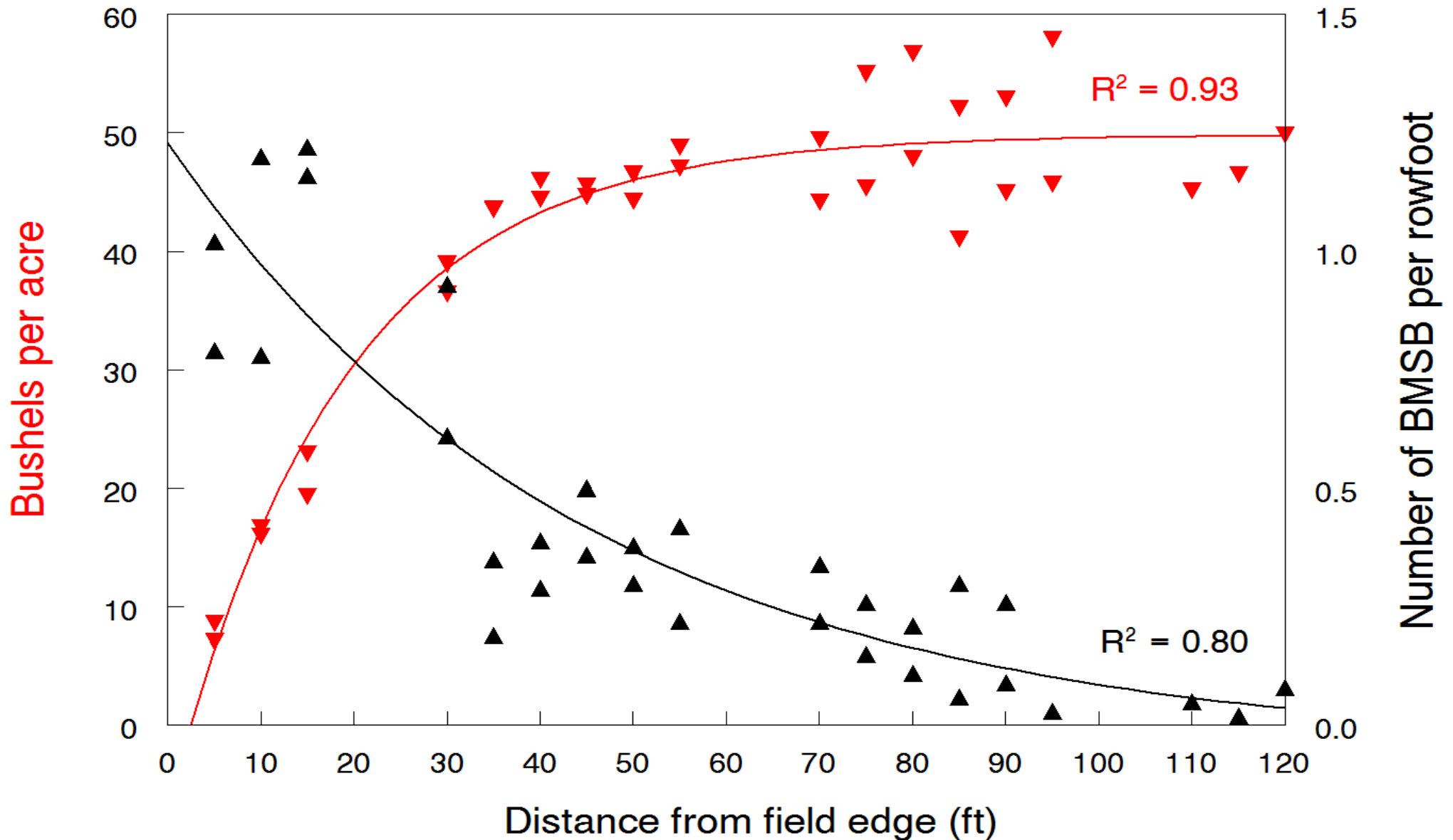






# BMSB Population-Soybean Yield Relationship

Based on infestation gradient across rows - Maryland 2012





## Estimated yield loss

Assuming 50' area of 'stay green' on one or two borders results in complete loss.

### 10 acre field

15% loss if two borders infested

7.5% loss if one border infested

### 20 acre field

11% loss if two borders infested

5.5% loss if one border infested

### 40 acre field

7.5% loss if two borders infested

3.8% loss if one border infested



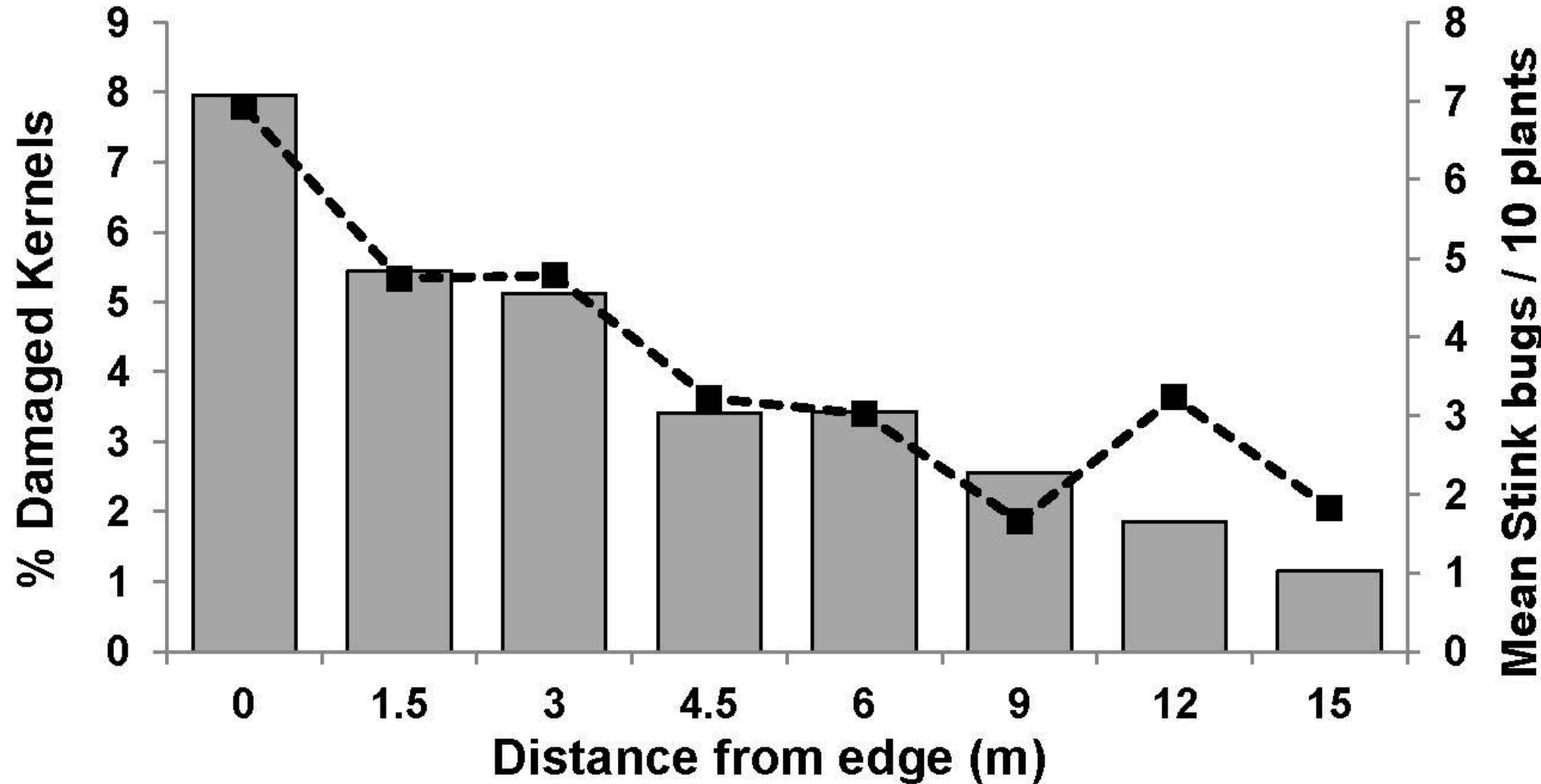








# Pattern of Kernel Damage and BMSB Populations in Field Corn



# Evaluation of Field Corn for Brown Marmorated Stink Bug Injury and Associated Fungi and Metabolites



H. Mehl, A. Herbert  
E. Seymore, J. Hogue, T. Kuhar





# **What we know so far – Biology and Damage**

- **BMSB is spreading into OH and coastal plain of VA and MD.**
- **At the local scale, higher abundance is associated with more dwellings and landscapes fragmented with woodlots.**
- **At a broad spatial scale, abundance is negatively associated with higher temperatures (particularly during July).**
- **Injury and damage to soybean are similar to that caused by native stink bug species.**
- **Complete yield loss can occur along soybean field edges.**
- **Significant injury to corn kernels can occur on outer rows.**
- **Mycotoxin levels, particularly fumonisin, are higher in BMSB-damaged corn and positively correlated with the proportion of damaged kernels.**

# Acknowledgments

D.A. Herbert, K.L. Kamminga, D.R.Owens  
And T. Kuhar. **Virginia Tech**

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