

## **HEMIPTERAN FEEDING AND PLANT DEFENSE RESPONSES: FROM CELLULAR DESTRUCTION TO STEALTHY FEEDING**

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In response to herbivore feeding, plants perceive signals generated in response to tissue damage and insect oral secretions to activate and/or suppress defense-signaling pathways. The balance of these signals varies depending on the mode of feeding. Within the order Hemiptera, there is a wide variety of feeding behaviors- from the destructive lacerate-and-flush strategies to the non-destructive feeding behaviors of whiteflies. Accordingly, plant molecular and biochemical responses to hemiptera vary with respect to the amount of tissue damage and their site of feeding. Plant defense strategies, particularly induced defenses, provoked by hemipteran feeding will be overviewed. The similarities and differences amongst hemipteran insects and other arthropod herbivores will be highlighted. In many cases, defenses induced by herbivore attack protect the damaged plant against herbivory. However, it is clear some hemipterans engineer the gene expression programs of their host to provide a more suitable environment for insect development.