



## Importance of Secondary Metabolites for Leaf Beetles (*Coleoptera: Chrysomelidae*)

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Leaf beetles (Chrysomelidae) are one of the most diverse families of herbivorous insects. Many of them are important agricultural pests and cause remarkable loss of crop and money as well. Plant leaves and roots are primary food source of both larva and adults of leaf beetles. Plants produce many secondary metabolites in reaction to herbivore insects. It is a well-known phenomenon that quantity and variety of secondary metabolites in plant leaves may change in response to insect attacks. Herbivore insects have to deal with such defensive secondary chemicals and overcome either by detoxifying or storing them. Accordingly, many specialist herbivores coevolved with their host plant. Certain phenolic glycosides may reduce leaf beetle feeding. Condensed tannins are anti-herbivore defenses against leaf chewing beetles, including leaf beetles. Flavonoid compounds are feeding deterrents for many flea leaf beetles. Cinnamic acid derivatives are other known feeding deterrents for leaf beetles. Secondary metabolites quantity and nutritional quality of host plants are not only important for feeding but also for providing enemy-free space and suitable oviposition sites.

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