

Determining Feeding Preference Hierarchy in Gypsy Moth Larvae (*Lymantria dispar*) Using Choice Test Bioassays

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Abstract

The larva of the gypsy moth *Lymantria dispar* L. is considered to be one of the most serious forest pests of North America. Today, the gypsy moth can be found in many parts of the eastern and mid-west United States, as well as in Canada. Despite efforts to control this insect, it has persisted and continues to extend its range. It has significant economic impact since the larvae defoliate millions of acres of forest annually. To better understand the feeding behavior that this polyphagous insect displays during tree defoliation, we examined feeding preferences of fifth instar larvae using a two-choice leaf disc assay. Seven overstory tree species were selected from the Towson University campus. These included sweetgum (*Liquidambar styraciflua*), sugar maple (*Acer saccharum*), tulip poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), American basswood (*Tilia americana*), red oak (*Quercus rubra*), and black walnut, (*Juglans nigra*). Intercomparisons made between each species revealed that sweetgum and red oak were highly preferred over the other species, whereas tulip poplar was least preferred. Our results reveal a clear hierarchical order of feeding preference for these larvae.