RESEARCH LABORATORY
TECHNICAL REPORT

BARTLETT
BARTLETT TREE EXPERTS
SCIENTIFIC TREE CARE SINCE 1907

Gypsy Moth Host Preferences

By The Bartlett Lab Staff
Directed by Kelby Fite, PhD

Gypsy moth larvae feed on the foliage of a wide variety of woody plants. During heavy infestations, most tree and shrub species will be fed upon to some extent. However, gypsy moth larvae have distinct food preferences. From the results of controlled studies and field observations, the susceptibility of tree and shrub species to gypsy moth feeding can be classified as follows: Class I, favored food plants; Class II, species that are intermediate in susceptibility; and Class III, unfavored food plants.

Species classified as favored food are readily fed upon and defoliated. In order for gypsy moth populations to reach outbreak levels, Class I species must be a major constituent of an area.

Species in the intermediate class will be fed upon if they are planted near favored food species. Significant injury seldom results unless the infestation is heavy and the favored food source is depleted. Some Class II species, including pine, spruce and hemlock, will not be fed upon by young larvae but may be defoliated by late instars. Gypsy moth populations will not reach outbreak levels in areas where Class II species predominate.

Unfavored food species seldom if ever are eaten. If Class III species are growing near favored food species, some light feeding may occur, however, significant defoliation seldom results. Gypsy moth populations cannot build up or sustain themselves where unfavored food species predominate.

Class I - Favored Food Plants

Alder (*Alnus* spp.)
Apple (*Malus* spp.)
Aspen, Bigtooth (*Populus grandidenta*)
Aspen, Trembling (*P. tremuloides*)
Beech, American (*Fagus americana*)
Birch, Gray (*Betula populifera*) Birch, Paper (*B. populifolia*)
Birch, River (*B. nigra*)
Boxelder (*Acer negundo*)
Crabapple (*Malus* spp.)
Hawthorne (*Crategus* spp.)
Hazelnut (*Corylus* spp.)
Larch (*Larix* sp.)
Linden (*Tilia* spp.)
Mountain Ash (*Sorbus* spp.)
Oak, Black (*Quercus velutina*)
Oak, Blackjack (*Q. marilandica*) Oak, Bur (*Q. macrocarpa*)
Oak, Chestnut (*Q. prinus*)
Oak, Chinkapin (*Q. muehlenbergii*)
Oak, Pin (*Q. palustris*)
Oak, Post (*Q. stellata*)
Oak, Red (*Q. rubra*)
Oak, Scarlet (*Q. coccinea*)
Oak, Shingle (*Q. imbricaria*)
Oak, Swamp White (*Q. bicolor*)
Oak, White (*Q. alba*)

Oak, Willow (*Q. phellos*)
Poplar, Balm of Gilead (*Populus balsamifera*)
Poplar, Lombardy (*P. nigra* var. *italica*)
Serviceberry (*Amelanchier canadensis*)
Sweetgum (*Liquidambar styraciflua*)
Willow (*Salix* sp.)
Witch Hazel (*Hamamelis virginiana*)

Class II - Species Intermediate in Susceptibility

Birch, Black (*Betula lenta*)
Birch, Yellow (*B. alleghaniensis*)
Blackgum (*Nyssa sylvatica*)
Buckeye (*Aesculus* spp.)
Butternut (*Juglans cinera*)
Chestnut (*Castanea dentata*)
Chinkapin (*C. pumila*)
Cottonwood (*Populus deltoides*)
Cherry, Black (*Prunus serotina*)
Cherry, Choke (*P. virginiana*)
Cherry, Pin (*P. pennsylvanica*)
Cherry, Sweet (*P. avium*)
Cucumbertree (*Magnolia acuminata*)
Dogwood, Flowering (*Cornus florida*)
Elm, American (*U. americana*)
Elm, English (*U. procera*)
Elm, Slippery (*U. rubra*)
Hackberry (*Celtis occidentalis*)
Hemlock (*Tsuga canadensis*)
Hickory, Bitternut (*Carya cordiformis*)
Hickory, Mockernut (*C. tomentosa*)
Hickory, Pignut (*C. glabra*)
Hickory, Shagbark (*C. ovata*)
Hornbeam (*Carpinus caroliniana*)
Hophornbeam (*Ostrya virginiana*)
Maples (*Acer* spp.)
Paw Paw (*Asimina triloba*)
Pear (*Pyrus* spp.)
Persimmon (*Diospyros virginiana*)
Pines (*Pinus* spp.)
Poplar, White (*Populus alba*)
Plum (*Prunus* sp.)
Redbud (*Cercis canadensis*)
Sassafras (*Sassafras albidum*)
Sourwood (*Oxydendrum arboreum*)
Spruce (*Picea* spp.)

Class III - Unfavored Food Plants

Arborvitae (*Thuja occidentalis*)
Ash (*Fraxinus* spp.)
Azalea (*Rhododendron* spp.)
Baldcypress (*Taxodium distichum*)
Black Locust (*Robinia pseudoacacia*)
Catalpa (*Catalpa* spp.)
Fir (*Abies* spp.)
Holly (*Ilex* spp.)
Honeylocust (*Gleditsia triacanthos*)
Juniper (*Juniperus virginiana*)
Kentucky Coffeetree (*Gymnocladus dioicus*)
Mountain Laurel (*Kalmia latifolia*)
Mulberry, Red (*Morus rubra*)
Mulberry, White (*Morus alba*)
Osage-Orange (*Maclura pomifera*)
Privet (*Ligustrum* spp.)
Spicebush (*Lindera benzoin*)
Sycamore (*Plantanus occidentalis*)
Tuliptree (*Liriodendron tulipifera*)
Viburnum (*Viburnum* sp.)
Walnut, Black (*Juglans nigra*)
White-Cedar Atlantic (*Chamaecyparis thyoides*)

References

Mosher, F. H. 1915. Food plants of the gypsy moth in America. USDA Bull. No. 250, 39p.

Houston, D. R. 1979. Classifying forest susceptibility to gypsy moth defoliation. USDA Agric. Handbook No. 542, 23p.