

Resistance of Ornamentals to Deer Damage

Revised by John W. Jett
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Cooperative Extension Service University of Maryland

Damage to ornamental plants by white-tailed deer (*Odocoileus virginianus*) has increased during the past decade. This increase is attributed to: 1. rising deer populations; 2. human populations shifting to rural and suburban homesites; 3. loss of deer habitat to development; and 4. landowner decisions to prevent deer hunting.

The best approach to control deer damage is an integrated pest management (IPM) plan, which includes careful monitoring of any one, or a combination of the following strategies: population management, fencing, repellents, or vegetation management.

In the short run, damage to ornamental plants is largely irreversible. Damage, particularly in suburban areas with good-quality deer habitat, probably will increase. However, by planting ornamentals not favored by deer, landscapers and homeowners can attempt to preserve vulnerable landscapes.

Deer Feeding Habits

Deer feed selectively on fertilized and unfertilized landscape plantings and managed croplands. Costly browsing damage may be reduced or eliminated by planting less-preferred species or by establishing susceptible plants only in protected areas. A few strategies to consider include planting susceptible plants close to the house or in a fenced yard, or planting preferred species inside a protective ring of less-preferred species. Under most circumstances, landscaping based on a knowledge of deer feeding preferences provides an alternative to expensive chemical repellents and unsightly physical barriers.

Whether deer will target a particular plant species or variety depends on their previous habits and nutritional needs, plant palatability, seasonal factors, weather conditions, geographic area, and availability of alternative foods. Deer are creatures of habit, and previous movement patterns or foraging experiences can determine where damage will occur. Also, one plant species may be rarely damaged in one region or the country, but highly preferred in another due to differences in deer pressure and other factors. Examples of species with noted regional differences include holly, white pine, and deciduous magnolias. Therefore, caution must be taken when using plant preference lists from areas outside your own.

In general, damage from browsing is most severe when snow cover or extreme cold has reduced food availability. Another problem time is early spring when young succulent growth of ornamentals provides attractive browse before other spring growth is available. When food is in short supply, deer will browse even the most undesirable plants. Under such conditions, landscapers should combine damage control measures with careful plant

selection. Damage control measures could include repellents, physical barriers (fencing), and deer population control. Ultimately, reducing the deer herd size is the most effective solution.

Plant Damage List

The following list contains many ornamental plants adaptable to West Virginia landscapes and notes their susceptibility to deer damage. This information is useful both to select plants that are unlikely to be damaged by deer and to identify those ornamentals that frequently require protection. Two categories are included: *Rarely Damaged*, and *Frequently Damaged*. The placement of plants in these categories is based on the experiences of nursery operators, landscape contractors and designers, West Virginia Extension Service personnel, research staff, and professional horticulturists. The information derives from personal communications, published articles, and unpublished reports. Please note that deer-browsing resistance of a plant species changes according to fluctuations in deer populations, alternative food availability, and environmental factors. No plant is safe under all conditions.

Plants listed in the *Rarely Damaged* category are eaten infrequently by deer and are the best candidates for damage-prone landscapes. *Frequently Damaged* category plants often require physical or chemical protection. Before planting any of the species listed, check to ensure that they suit local climatic and soil conditions.

Rarely Damaged	
Botanical Name	Common Name
Trees	
<i>Aesculus parviflora</i>	Bottlebrush Buckeye
<i>Amelanchier arborea</i>	Downy Serviceberry
<i>Amelanchier canadensis</i>	Shadbush
<i>Amelanchier laevis</i>	Allegheny Serviceberry
<i>Betula albo-sinensis</i>	Chinese Paper Birch
<i>Betula nigra</i> 'Heritage'	Heritage Birch
<i>Betula papyrifera</i>	Paper Birch
<i>Chamaecyparis pisifera</i>	Japanese Falsecypress
<i>Cryptomeria japonica</i>	Japanese Cedar
<i>Picea pungens glauca</i>	Colorado Blue Spruce
<i>Pinus sylvestris</i>	Scotch Pine
<i>Pseudotsuga menziesii</i>	Douglas Fir
Shrubs and Climbers	
<i>Arctostaphylos uva-ursi</i>	Bearberry

<i>Asimina triloba</i>	Pawpaw
<i>Berberis</i> spp.	Barberry
<i>Buxus</i> spp.	Boxwood
<i>Caryopteris x clandonensis</i>	Caryopteria
<i>Calastrus scandens</i>	American Bittersweet
<i>Cornus sericea</i>	Red Osier Dogwood
<i>Cephalotaxus harringtonia</i> var. <i>horeana</i>	Japanese Plum-Yew
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Gaultheria procumbens</i>	Creeping Wintergreen
<i>Hibiscus syriacus</i>	Rose of Sharon
<i>Ilex</i> x ' <i>John T. Morris</i> '	John T. Morris Holly
<i>Ilex</i> x ' <i>Lydia Morris</i> '	Lydia Morris Hollies
<i>Leucothoe</i> spp.	Leucothoe
<i>Ligustrum vulgare</i>	European Privet
<i>Pieris japonica</i>	Japanese Andromeda
<i>Rhamnus cathartica</i>	Common Buckthorn
<i>Sambucus canadensis</i>	Blueberry Elder
<i>Sarcococca hookeriana</i> var. <i>humilis</i>	Dwarf Sweet Christmas Box
Annuals, Perennials, and Bulbs	
<i>Achillea</i> spp.	Yarrow
<i>Aconitum</i> spp.	Monkshood
<i>Ageratum houstonianum</i>	Ageratum
<i>Allium christophii</i>	Star of Persia
<i>Allium neapolitanum</i>	Daffodil Garlic
<i>Allium ostrowskianum</i>	Lily Leek
<i>Anemone x hybrida</i>	Japanese Anemone
<i>Anemonella thalictroides</i>	Rue Anemone
<i>Anethum graveolens</i>	Common Dill
<i>Aquilegia</i> spp.	Columbine
<i>Aurinia saxatilis</i>	Basket-of-Gold
<i>Antirrhinum majus</i>	Snapdragon
<i>Arabis</i> spp.	Rock-cress
<i>Arisaema thiphylum</i>	Jack-in-the-Pulpit
<i>Aubrietia deltoidea</i>	Rock Cress
<i>Bergenia</i> spp.	Berginia

<i>Ceratostigma plumbaginoides</i>	Plumbago
<i>Cimicifuga racemosa</i>	Snakeroot
<i>Colchicum autumnale</i>	Colchicum
<i>Colchicum speciosum</i>	Colchicum
<i>Consolida ambigua</i>	Larkspur
<i>Convallaria majalis</i>	Lily-of-the-valley
<i>Coreopsis verticillata</i> 'Moonbeam'	Threadleaf Coreopsis
<i>Cyclamen hederifolium</i>	Neopolitan Cyclamen
<i>Dicentra spectabilis</i>	Bleeding Heart
<i>Digitalis</i> spp.	Foxglove
<i>Dryopteris marginalis</i>	Wood Fern
<i>Echinacea purpurea</i>	Purple Coneflower
<i>Epimedium</i> spp.	Barrenwort
<i>Euphorbia</i> spp.	Euphorbia
<i>Fritillaria</i> spp.	Fritillary
<i>Galium odoratum</i>	Sweet Woodruff
<i>Gloriosa superba</i>	Glory Lily
<i>Hemmerocallis</i> 'Stella de Oro'	Stella de Oro Daylily
<i>Hesperis matronalis</i>	Dame's Rocket
<i>Hyacinthus orientalis</i>	Hyacinth
<i>Lamium maculatum</i>	Deadnettle
<i>Lavandula</i> spp.	Lavender
<i>Linaria vulgaris</i>	Toadflax
<i>Lobularia maritima</i>	Sweet Alyssum
<i>Lychnis coronaria</i>	Rose Champion
<i>Matteuccia struthiopteris</i>	Ostrich Fern
<i>Narcissus</i> spp.	Daffodil
<i>Nicotiana</i> spp.	Flowering Tobacco
<i>Osmunda regalis</i> var. <i>spectabilis</i>	Royal Fern
<i>Pachysandra procumbens</i>	Allegheny Spurge
<i>Pachysandra terminalis</i>	Japanese Spurge
<i>Papaver orientale</i>	Oriental Poppy
<i>Pelargonium</i> spp.	Scented Geranium
<i>Pervoshia atriplicifolia</i>	Russian Sage
<i>Ranunculus</i> spp.	Buttercup

<i>Rheum rhabarbarum</i>	Rhubarb
<i>Rudbeckia</i> spp.	Coneflower
<i>Salvia</i> spp.	Sage
<i>Santolina chamaecyparissus</i>	Lavender Cotton
<i>Scilla</i> spp.	Squill
<i>Stachys byzantina</i>	Lamb's Ears
<i>Tagetes</i> spp.	Marigold
<i>Tanacetum vulgare</i>	Common Tansy
<i>Thymus</i> spp.	Thyme
<i>Tiarella cordifolia</i>	Foam Flower
<i>Tropaeolum majus</i>	Nasturtium
<i>Yucca</i> spp.	Yucca

Frequently Damaged	
Botanical Name	Common Name
Trees	
<i>Abies balsamea</i>	Balsam Fir
<i>Acer palmatum</i> /red-leaved varieties	Japanese Maple
<i>Acer platanoides</i>	Norway Maple
<i>Cedrus atlantica</i>	Atlas Cedar
<i>Cercis canadensis</i>	Redbud
<i>Chionanthus virginicus</i>	Fringe Tree
x <i>Cupressocyparis leylandii</i>	Leyland Cypress
<i>Fraxinus excelsior</i>	European Ash
<i>Ilex</i> 'Nellie Stevens'	Nellie Stevens Holly
<i>Kuelreutaria paniculata</i>	Goldenrain Tree
<i>Magnolia soulangeana</i>	Saucer Magnolia
<i>Malus</i> spp.	Apple and Crabapple
<i>Prunus</i> spp.	Cherry and Plum
<i>Pinus strobus</i>	White Pine
<i>Pyrus</i> spp.	Pear
<i>Thuja occidentalis</i>	Arborvitae
<i>Tsuga</i> spp.	Hemlock

Shrubs and Climbers	
<i>Chaenomeles japonica</i>	Quince
<i>Clematis</i> spp.	Clematis
<i>Cornus mas</i>	Cornellian Cherry Dogwood
<i>Euonymus alatus</i>	Winged Euonymus
<i>Euonymus fortunei</i>	Wintercreeper
<i>Hydrangea quercifolia</i>	Bigleaf Hydrangea
<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea
<i>Ilex cornuta</i>	Chinese Holly
<i>Ilex x merserveae</i>	Messerve Holly
<i>Ilex verticillata</i>	Common Winterberry
<i>Kalmia latifolia</i>	Mountain Laurel
<i>Rhododendron austrinum</i>	Florida Azalea
<i>Rhododendron nudiflorum</i> (<i>periclymenoides</i>)	Pinksterbloom Azalea
<i>Rhododendron vaseyl</i>	Pink Shell Azalea
<i>Rhododendron</i> hybrids	Evergreen Azaleas & Rhododendron
<i>Rosa</i> hybrids	Hybrid Roses
<i>Rubus</i> spp.	Blackberry & Raspberry
<i>Sorbus aucupatia</i>	European Mountain Ash
<i>Syringa patula</i>	Manchurian Lilac
<i>Taxus</i> spp.	Yew
<i>Vaccinium corymbosum</i>	Highbush Blueberry
Annuals, Perennials, and Bulbs	
<i>Aegopodium podagaria</i>	Bishop's Weed
<i>Aquilegia</i> spp.	Columbine
<i>Athyrium niponicum</i> var. <i>pictum</i>	Japanese Painted Fern
<i>Cherianthus</i> spp.	Wallflower
<i>Hedera helix</i>	English Ivy
<i>Helianthus</i> spp.	Sunflower
<i>Hosta</i> spp.	Hosta
<i>Hemerocallis</i> spp. & hybrids	Daylily
<i>Iberis sempervirens</i>	Candytuft
<i>Lilium</i> spp.	Lily
<i>Matthoila incarna</i>	Stock
<i>.Pelargonium</i> spp	Geranium

<i>Polygonatum biflorum</i>	Solomon's Seal
<i>Ranunculus asiaticus</i>	Buttercup
<i>Trillium</i> spp.	Trillium
<i>Tulipa</i> spp.	Tulips
<i>Vinca minor</i>	Periwinkle
<i>Viola</i> spp.	Pansies & Violas

References

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