# CONTROLLING DEER DAMAGE IN GARDENS

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There are over 76,000 white-tailed deer (*Odocoileus virginianus*) in Connecticut. High deer numbers in suburban areas have led to browse damage, resulting in the destruction of landscapes and gardens. It is relatively easy to identify deer browse damage -- deer have no upper incisors, hence they tear vegetation using their lower incisors and their upper palate. The resulting browsed fragment has a jagged edge. Male deer (bucks) also damage trees and saplings by rubbing them with their antlers, resulting in the bark being scraped off the trees.

## Damage Control

Before planning deer control measures, there are some simple steps you can take to make your property less attractive to deer. Do not provide winter feed or salt for deer, and remove all unharvested fruits and vegetables. This will help in preventing deer from including your property as part of their feeding territory come spring. Damage control options depend on factors such as the deer density in your area, the type of deer damage in your garden, the season when damage is most noticeable in your neighborhood, and the location of high-use areas by deer. Often, a combination of control options work better in areas with large numbers of deer. Deer damage control is more effective when implemented before the growing season. Some methods of controlling deer damage in your garden include:

Browsed Tulips

- Using scare devices
- Growing deer-resistant plant species
- Using fencing and other physical barriers
- Using repellents

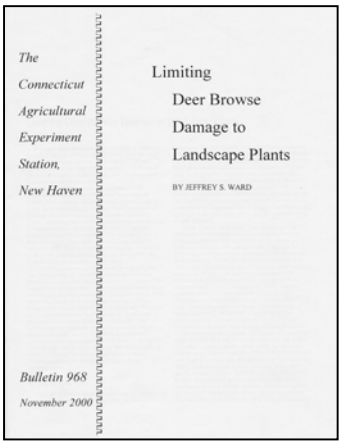
Buck Rub

## Scare devices

Deer are nervous by nature, and scare devices used to repel deer play on this nervousness. Devices that produce loud noises or use flashing lights are often used to scare deer. These include propane gas exploders, radios, and strobe lights. If there is a small deer population in your neighborhood, you may be able to use scare methods to reduce browse damage. There are two major drawbacks to these methods – they are not very effective in areas of high deer density,


and the devices can be annoying to humans. There are also sonic and ultrasonic deer repellents. The ultrasonic deer deterrent is similar to that used on vehicles to deter deer. Unfortunately, there is no evidence that deer can hear the device. Another device is a sprinkler that is triggered when deer enter the garden. The disadvantage of this device is that the deer may retreat only a short distance and will likely return in time. Again, it could be effective in an area of relatively low deer density where the animal is just beginning to use your garden.

## Growing Deer Browse Resistant Plant Species




You can reduce the frequency with which deer use your garden by altering your plant selection. While no plant species is completely immune to browse damage, some species are less preferred by deer than others. By incorporating these browse resistant plants into your landscape and placing the species that are favored by deer away from the garden edge, it is possible to reduce the number of deer visiting as well as the time they spend in your garden. For a list of deer-resistant plant species, refer to "Limiting Deer Browse Damage to Landscape Plants" by Dr. J. S. Ward, Bulletin 968 of The Connecticut Agricultural Experiment Station. It can be accessed at http://www.caes.state.ct.us.

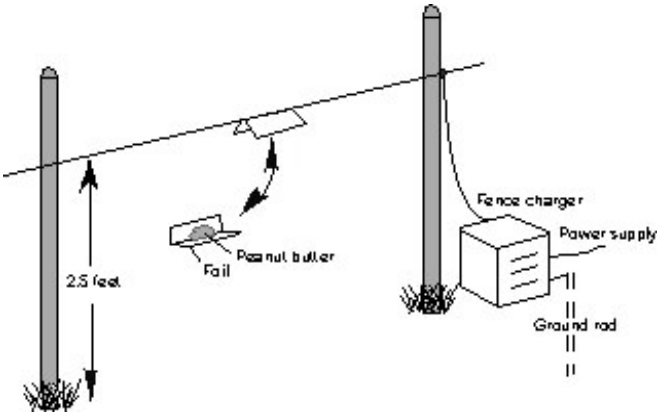
## Physical Exclusion

**Netting and Snow fencing-** To protect small areas such as vegetable gardens or foundation plantings, you can box in plants with burlap or netting. Standard snow fencing is good at protecting individual plant species too large to box or burlap. **Fencing-** The most effective method of preventing browse damage is fencing the entire property. There are numerous types of fencing available. A fence designed to exclude deer should be between 7-10 ft. high and low enough that deer cannot crawl under. While permanent chain-linked fencing is reliable, durable, and requires almost no maintenance, it is also expensive and may be unattractive. Other fencing options include plastic mesh fences and simple single/double strand electric fencing.



**Plastic mesh fencing-** Plastic mesh fencing has become popular in recent years. These fences are lightweight, very sturdy, and easy to install. The biggest advantage of this type of fencing is that it is practically invisible, so it does not make the property look unsightly. The fence is black in color and usually about 8 feet high. The lightweight of the fencing makes it easy to install and few posts may be required if fastened to existing trees.

**Simple electric fencing-** Simple single or double stranded electric fencing is often sufficient to reduce deer damage if properly constructed and maintained. It is also relatively inexpensive to construct. Fiberglass or wooden posts can be used to support a 17-gauge wire suspended about 30 inches above the ground. The Minnesota Department of Natural Resources designed a fence that first attracts deer and then teaches them to avoid the fence. In this kind of fence, aluminum foils (4 inches by 4 inches, folded over the wire) are attached to the wire at 25-foot intervals using tape or paper clips. The underside of each flag is baited with a 1:1 mixture of peanut butter and vegetable oil. The smell attracts deer, which sniff the flags and receive an electric shock. This usually results in behavioral changes and deer learn to avoid the fence. The peanut butter – vegetable oil mixture needs to be reapplied to the aluminum flags every 4 to 8 weeks for the training to be effective.


| Fence type | Material and labor cost / ft | Ease of installation |
|---|---|---|
| 8-ft. chain-linked fence | $ 5.00 –7.00 | Difficult |
| 8-ft. plastic mesh fence | $ 1.00 – 1.50 | Moderate |
| Single/double strand electric | $ 0.30 | Easy |

## Repellents

Earlier research at The Connecticut Agricultural Experiment Station and elsewhere showed that repellents reduce deer browsing in orchards, nurseries, and Christmas tree plantations, but control is inconsistent. While repellents help in reducing deer damage, they do not eliminate damage altogether. Nevertheless, a combination of odor and taste-based repellents and treatment alternation can often help deter deer. Repellents can be made at home by mixing eggs and water and then spraying the mixture on trees. The eggs rot on the plants and the smell repels deer. This repellent is not appropriate for cut flowers or vegetables that will be brought into the home. Other homemade repellents include hair and bars of soap. These repellents work in areas of low to moderate deer densities.

**Hair bags** – A simple, cheap repellent can be made with human hair placed in fine-meshed bags. The hair bags need to be hung on the outer branches of trees with no more than 3 feet between bags. The bags should be attached early in spring and replaced monthly throughout the growing season.

**Bar soap-** Ordinary bars of soap applied in the same manner as hair bags can also be used to reduce deer damage. Strong-smelling bars of soap can be suspended on the outer ends of branches, held in place using a string passed through a hole drilled in the soap.


**Predator-odor based repellents** – Coyote, mountain lion, bobcat, and wolf urine is available commercially to deter deer

and other browsing animals. However, these materials are not very effective in repelling white-tailed deer.

**Soap-based repellent-** Commercially available liquid deer repellents made from fatty acid soaps are available at most garden stores. One such repellent is **Hinder**, which smells like ammonia. This product is registered for use on edible crops. Applications can be made directly to vegetable and field crops, forages, ornamentals and fruit trees. Its effectiveness, usually limited to 2 to 4 weeks, varies based on weather and application technique.


**Egg-based repellent-** Commercially made egg-based deer repellents can also be purchased at local garden stores. One such repellent is **Deer-away**. It is made from putrid egg solids, and is often effective when working in areas of moderate deer density. This contact repellent smells and tastes like rotten eggs. It has been reported to be 85 to 100 percent effective in field studies. It is registered for use on fruit trees before flowering, ornamental shrubs, and Christmas trees.


**Hot sauce based repellent-** Repellents made from hot sauce are available for application on non-edible plants. They can be sprayed on all susceptible new growth, such as leaders and young leaves. Vegetable crops can also be protected if sprayed before development of edible parts. Some repellents deter deer by including a compound that results in a bitter taste. **Tree guard** is one such repellent, and it contains bitrex, a very bitter substance. **Ropel** is another repellent that deters deer with its extremely bitter taste. There are a variety of other commercial products available to reduce browse damage. Most should work, at least for a while, because the novel smell or taste will play on the natural nervousness of deer to changes. Two repellents, **Bobbex** and **Deer-Off**, are manufactured in Connecticut. Both use a combination of taste and odor. **Milorganite** is fertilizer, which contains composted sludge. Milorganite has been reported to deter browsing on small perennials and spring-flowering bulbs. Another repellent that can be sprayed directly on edible plants is **Deer Stopper**, which contains mint oil, rosemary oil, and salt. Alternating between different repellents also helps in keeping deer away from your garden. Once deer have begun using your garden, it is more difficult to rid them of the habit. The suggestions mentioned in this brochure will reduce the likelihood of deer including your garden as part of their range.

**Mention of a repellent does not constitute an endorsement by the Connecticut Agricultural Experiment Station**