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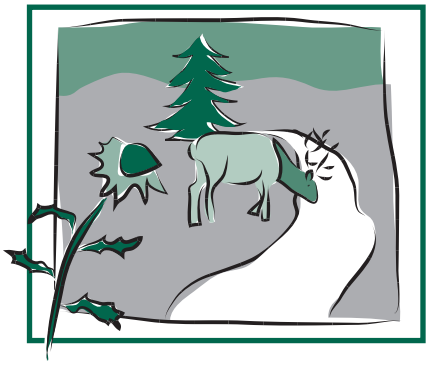

Preventing Deer Damage

Fact Sheet No. **6.520** Natural Resources Series | **Wildlife**

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Revised by Kurt Jones**

Although browsing deer are charming to watch, they can cause extensive damage by feeding on plants and rubbing antlers against trees. In urban areas, home landscapes may become the major source of food. Deer can pose a serious aesthetic and economic threat. Damage is most commonly noticed in spring on new, succulent growth. Because deer lack upper incisors, browsed twigs and stems show a rough, shredded surface. Damage caused by rabbits, on the other hand, has a neat, sharp 45-degree cut. Rodents leave narrow teeth marks when feeding on branches. Deer strip the bark and leave no teeth marks.

Management Strategies

It is difficult to move deer out of areas where they are not wanted. Not all strategies are practical for every homeowner. Frightening deer with gas exploders, strobe lights, pyrotechnics or tethered dogs typically provides only temporary relief. More practical management strategies include selecting plants unattractive to deer, treating plants with deer repellents, netting and tubing, and fencing.

Placement and Selection of Plants

The placement of plants in part determines the extent of damage. Plant more susceptible species near the home, in a fenced area, or inside a protective ring of less-preferred species. Table 1 lists plants and their susceptibility to deer damage. A hungry deer will find almost any plant palatable, so no plant is "deer proof." Also, a plant species may be damaged rarely in one area but damaged severely in another.

Repellents

The two types of deer repellents are contact repellents and area repellents. Contact repellents are applied directly to plants, causing them to taste bad. Area repellents are placed in a problem area and repel by their foul odor. Repellents are generally more effective on less preferred plants.

Apply repellents on a dry day with temperatures above freezing. Treat young trees completely. Older trees may be treated only on their new growth. Treat to a height 6 feet above the maximum expected snow depth. Deer browse from the top down. Hang or apply repellents at the bud or new growth level of the plants you wish to protect.

A spray of 20 percent whole eggs and 80 percent water is one of the most effective repellents. To prevent the sprayer from clogging, remove the chalaza or white membrane attached to the yolk before mixing the eggs. The egg mixture is weather resistant but must be reapplied in about 30 days. See Table 2 for a list of commercially available repellents and their ratings against deer and elk browsing in Colorado.

Home-remedy repellents are questionable at best. These include small, fine-mesh bags of human hair (about two handfuls) and bar soap hung from branches of trees. Replace both soap and hair bags monthly. Deer have been reported to eat the soap bars. Materials that work in one area or for one person may not work at all in an area more highly frequented by deer.

Netting and Tubing

Tubes of Vexar netting around individual seedlings are an effective method to reduce deer damage to small trees. The material

Quick Facts

- It is difficult to move deer out of areas where they are not wanted.
- A hungry deer will find almost any plant palatable, so no plant is "deer proof."
- The two types of deer repellents are contact repellents and area repellents.
- Netting can reduce deer damage to small trees.
- Adequate fencing to exclude deer is the only sure way to control deer damage.

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Table 1. Plants and their relative susceptibility to deer browsing.

Often browsed	Sometimes browsed	Rarely browsed
	Flowers	
Geranium, wild (*Geranium fremontii)*	Lupine, silver (*Lupinus argenteus)*	Black-eyed susan *(Rudbeckia* sp.*)*
Low sunflower (*Helianthus pumilus)*	Pasque flower (*Pulsatilla patens)*	California fuchsia *(Zauschneria* sp.*)*
Nodding onion (*Allium cernuum)*	Prairie coneflower (*Ratibida columnifera)*	Daffodils (*Narcissus* sp.*)*
Penstemon, low (*Penstemon virens)*	Salvia (*Salvia reflexa)*	Gaillardia/blanketflower (*Gaillardia aristata)*
Phlox, common (*Phlox multiflora)*	Scarlet gilia (*Ipomopsis aggregata)*	Gayflower *(Liatris punctata)*
Pussytoes, rose (*Antennaria rosea)*	Tall coneflower (*Rudbeckia lacinata)*	Grape hyacinth (*Cynoglossum officinale)*
Strawberry (*Fragaria* sp.*)*	Western wallflower (*Erysimum asperus)*	Larkspur (*Delphinium nelsonii)*
Tulips (*Tulipa* sp.*)*	Wild iris (*Iris missouriensis)*	Lavender (*Ravandula* sp.)
		Mariposa lily (*Calochortus gunnisonii)*
		Mountain harebell (*Campanula rotundifolia)*
		Pearly everlasting (*Anaphalis margaritacea)*
		Purple coneflower *(Echinacea purpurea)*
		Russian sage *(Perovskia atriplicifolia)*
		Thyme *(Thymus* sp.*)*
		Yarrow *(Achillea* sp.*)*
	Vines	
Grapes (*Vitis* spp.)	English ivy (*Hedera helix* var.)	Virginia creeper (*Parthenocissus quinquefolia*)
	Trees and shrubs	
Apples (*Malus* sp.)	Alder (*Alnus tenuifolia)*	Apache plume *(Fallugia paradoxa)*
Aspen (*Populus tremuloides)*	Golden currant (*Ribes aureum)*	Blue mist spiraea *(Caryopteris x clandonensis)*
Mugo pine (*Pinus mugo mughus)*	Mountain maple (*Acer glabrum)*	Common juniper (*Juniperus communis)*
Rocky Mountain juniper (*Juniperus copulorus)*	Ninebark (*Physocarpus monogynus)*	Douglas-fir (*Pseudotsuga menziesii)*
Roses (most) (*Rosea* spp.)	Wild plum (*Prunus americana)*	Hawthorn (*Crataegus* sp.)
Wild red raspberry (*Rubus idaeus)*		Mountain mahogany (*Cercocarpus montanus)*
		Oregon grape (*Mahonia repens)*
		Pinon pine (*Pinus edulis)*
		Potentilla/cinquefoil (*Potentilla* spp.)
		Rabbit brush *(Chrysothamnus* sp.*)*

Table 2. Relative effectiveness of repellents tested on hungry, captive mule deer and elk in Colorado during 1989, 1991 and 1992. (Compiled by W.F. Andelt et al.)

Material	Deer	Elk
Hot Sauce® 6.2% hot sauce	High	Very High
Hot Sauce® 0.62% hot sauce	Medium	Medium
Hot Sauce® .062% hot sauce	Low - failure	Failure
Deer Away - same as Big Game Repellent	High	High
Chicken eggs (20% eggs, 80% water)	High	Medium
Coyote urine (100% urine)	High	High
Habanero peppers (8% pepper, 92% water)	Medium	Not reported
Tabasco sauce (50% Tabasco, 50% water)	Medium	Not reported
Thiram (labeled concentration)	Medium	Medium
Hinder (labeled concentration)	Medium	Medium
Soap (Lifebuoy)	Low-medium	Not reported
Ro-pel® (denatonium benzoate)	Failure	Failure
Ani-spray (denatonium benzoate, 3 x label) [a]	Failure	Not reported

[a]Products should not be used at rates above the labeled concentration.

degrades in sunlight and breaks down in three to five years. These tubes can protect just the growing terminals or can completely enclose small trees. Attach tubes to a support stake to keep them upright. Another option is flexible, sunlight-degradable netting that expands to slip over seedlings. Both products are available from Colorado State Forest Service offices.

Paper or Reemay budcaps form a protective cylinder around the terminal leader and bud. They may help reduce browse damage. Budcaps are rectangular pieces of material folded lengthwise and stapled around the terminal leader.

Tubes placed around the trunks of larger trees will help prevent trunk damage. Tubes may not, however, protect trunks from damage when bucks use the trees to scrape the velvet off their antlers. Fencing may be required.

Fencing

Adequate fencing to exclude deer is the only sure way to control deer damage. The conventional deer-proof fence is 8 feet high and made of woven wire. Electric fences also can be used. Electric fences should be of triple-galvanized, high-tensile, 13.5-gauge wire carrying a current of 35 milliamps and 3,000 to 4,500 volts. Several configurations of electric fences are used: vertical five-, seven-, or nine-wire; slanted seven-wire; single strand; and others. When using a single strand electric fence it helps the deer to 'notice' that the wire is there if it is marked with cloth strips, reflective tape or something similar. Otherwise, the deer may not see it in time and go right through it.

Additional options include invisible mesh barriers, slanting deer fences, and single-wire, electric fences baited with peanut butter. The invisible mesh barriers are polypropylene fences of various mesh sizes, typically 8 feet high with a high tensile strength, that blend in with the surroundings. The baited fences attract deer to the fence instead of what's inside the fence. They administer a safe correction that trains the deer to stay away. They are effective for small gardens, nurseries

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and orchards (up to 3 to 4 acres) that are subject to moderate deer pressure. Deer are attracted by the peanut butter and encouraged to make nose-to-fence contact. Deer, like many wild animals, seem to respect and respond better to electric fencing after they become familiar with the fenced area. Additional information on fences and their construction can be found in *Deer* (Craven and Hygnstrom), available from Colorado State University Extension offices. (See references.)

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