



# Forage Management

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## Mechanical Control of the Multiflora Rose

Plants depend on sunlight for energy. Energy in sunlight is converted to chemical energy in plant leaves during the process of photosynthesis. It is then available for plant growth. Removing plant leaves, therefore, takes away the site of energy production. Plants respond by using reserves of energy in roots and crowns to put out new leaves. Repeated defoliation will exhaust these energy reserves and the plant will die. Multiflora rose plants can be defoliated mechanically or using grazing animals.

### Mechanical Defoliation

At West Virginia University we compared survival of individual multiflora rose plants defoliated at intervals over several seasons. The initial study compared 1-, 2-, 4-, and 8-week defoliations beginning in May. A year later, 84 percent of plants were dead. A subsequent experiment compared 4- and 8-week defoliations; 21 percent of plants were dead at the begin-



ning of the second year, 78 percent by the third year, and 94 percent by the beginning of the fourth season. In both trials, closer spaced clippings resulted in significantly shorter shoot growth but there were no differences in number of shoots, hardness of thorns, or number of plants killed. Smaller plants survived the longest.

This research, which simulated both mechanical cutting and close animal grazing, shows that three to six mowings per season for two to three consecutive seasons are required to achieve high plant kill.

### Animal Grazing

Some persons have utilized goats or sheep or a combination of both with or without cattle to control multiflora rose. This method is especially appropriate on steeper terrain. An herbicide application or cutting might precede grazing to clear the brush, making animal access easier. Goats, in recent West Virginia University studies, successfully cleared brush-covered pasture in one season. Several more seasons and well-managed grazing, however, were required to kill multiflora and other brush species.

Unlike sheep or cattle, goats will severely affect many bushes, saplings, and small trees by defoliation and debarking. Goats are not deterred by thorny vegetation. By standing on their hind legs, they defoliate higher up than sheep on many plants which have central trunks. Generally, goats will defoliate multiflora rose stems to a height of about 5 feet.

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*Typical multiflora rose plant that was subsequently killed after initial cutting followed by repeated defoliation.*



*A brush-infested pasture, before grazing with goats in July 1986 (left) and after three years of goat grazing in May 1989 (right).*

This West Virginia University research which compared goats and sheep, showed that goats reduced brush cover in pasture from 45% to under 15% in one season. Sheep required three seasons to accomplish the same reduction. Goats were able to clear mixed species of brush irrespective of whether a herbicide or mowing was used initially. The inclusion of a mowing or herbicide application made sheep as effective in initial clearing as goats.

Spring and early summer proved to be the critical times for goat or sheep control of brush. Grazing after August 1 was of negligible value. Eight to 10 mature goats or sheep per acre may be required early in the season, but this stocking rate must be reduced later in the summer when pasture growth slows.

Although goats can clear brush from a pasture in one season, actual plant kill of brush species required continued grazing management for several seasons. Brush was reduced to 2 percent of pasture cover after five years of grazing by goats.

Grazing management (rotational or continuous), and animal species and number are the main factors to consider. Rotational grazing makes management easier. Mixed animal grazing is more complex but may be more economic after initial clearing. It is important to have enough animals and start grazing early. The key to control is repeated heavy defoliation in spring and early summer. It is easier to accomplish this with goats since they prefer most brush species to grass and clover. Sheep prefer grasses and clover and will defoliate brush after pasture has been heavily grazed.

The most effective clearing and subsequent plant kill of multiflora rose in pastures will result from using a mixture of goats, sheep, and cattle. Higher goat numbers are suggested at the beginning; they then can be reduced after two to three seasons. Inclusion of some sheep or goats with cattle will be required to ensure long-term animal control of multiflora rose in pastures. Cattle serve a useful mechanical function when grazed with goats or sheep even from the beginning of land clearance. They make pathways and trample brush killed or partially killed by the goats or sheep.

Successful brush control in pasture using grazing animals depends on good fencing, good management, and a development plan. The key is to have enough animals to defoliate brush repeatedly in the spring without severely overgrazing the grasses and legumes. A development plan for brushy pastures must also maintain soil fertility, promote desirable grasses and legumes, and minimize soil erosion as brush is eliminated. It is essential that landowners accept the complexity and challenge of grazing and build up experience by trial and error. They will then experience the satisfaction of working within a natural system.

*Further information may be obtained in Leaflet 303 (Agdex 130/581), Multiflora Rose Control by Mark Loux and John F. Underwood, Ohio State Extension.*



*Goats prefer to eat the leaves of brambles, hawthorn, and multiflora rose rather than graze pasture.*