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Arboriculture Research Note

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PLASTIC MESH TREE GUARDS, by H.W. Pepper, Wildlife and Conservation Branch

Abstract

Light-degradable polythene plastic mesh tubes for use as tree guards to protect young trees vulnerable to damage by deer and rabbits are described. Their use in towns is also considered.

1. Plastic mesh tree guards are rigid, light-degradable polythene netting tubes intended for protecting individual young trees from damage by mammals. Forestry Commission trials for Netlon Tree guards over 9 years have shown the guards to be effective in preventing bark-stripping by rabbits and ponies and foliage browsing by fallow deer, roe deer and rabbits on a number of different tree species (Pepper *et al.* 1985). Rabbits are capable of chewing the plastic but in practice do not unless their numbers are allowed to become extremely high or the guards are placed within a large well-populated burrow system. It should also be remembered that there is a legal requirement to control rabbits wherever present (Arboriculture Research Note 43/82/WLD). Protection against shoot clipping by hares has been achieved on a small scale. These guards, therefore, have a potentially wider application than the much used plastic spiral tree guard which is only suitable for preventing bark stripping by rabbits on trees with a stem diameter in excess of 25mm, i.e. a light standard tree or larger (BSI 1980).
2. There are two types of guard available:-
 - a) Netlon Treeguard 1 and BG Intermesh Tubeguard, 75mm diameter, 15mm square mesh guards.
 - b) Netlon Treeguard 2 and BG Standard Intermesh treeguard, 150mm diameter guards with 25mm x 35mm rectangular mesh.

Use of these guards may be more economical than conventional fencing for small plantations, widely spaced plantings or where a fence may be undesirable.

75mm Diameter Guards

3. These are 1.2m, long mesh tubes slit from end to end for ease of packaging and application to the tree. They are designed to prevent damage to the leading shoots and stem of the enclosed tree and may be put on immediately after planting or at a later date to protect trees that have suffered unexpectedly heavy browsing. When small transplants are guarded the leading shoot grows up inside the tube and the side shoots grow through the mesh (Figure 3).
4. It is important that the guard is erected and secured vertically and that the tree is in the centre. The guards are wrapped around the tree and the slit edges fastened together with metal rings (Figure 1). Provided the guard is firmly anchored and vertical the method of fixing is a matter of individual choice. When the tree is a relatively large transplant, whip or standard, it is sufficient to fasten the guard around the stem and branches; the tree wick provides the required support. Small transplants may be distorted by the guard if additional support for the guard is not employed. Wire anchor pins around the base of the guard are only successful in firm soil types. A rough-sawn wooden stake 25mm x 20mm gives a satisfactory support, to which the guard is stapled using a

spring loaded-hand operated staple gun. The height of stake required above the ground will depend on the length of guard used, i.e. 150mm to 300mm for 0.6 m guards and 750mm to 1 m for 1.2 guards. The depth the stake is driven into the ground will be controlled by soil type. A small diameter round or quarter-sawn stake should prove equally effective. The stake is only required to last until the tree is large enough to provide the necessary support for the guard.

5. The 75mm diameter guard may be used in the full 1.2m length for protection against roe deer browsing or halved to give 0.6m long guards for use against rabbits (Figure 3). The 75mm diameter guards are less satisfactory when used to protect small plants (less than the height of the guard) with pendulous leading shoots, such as Western hemlock (*Tsuga heterophylla*) and some broadleaved species, which do not have strong apical dominance, as a high proportion of their leading shoots may penetrate the mesh. When this occurs it is possible to slit the guard, place the leading shoot inside and refasten. Little other maintenance should be necessary. The guards are expected to degrade within 5 to 10 years and therefore do not require removing from the trees. A 75mm diameter guard will not prevent deer rubbing their antlers (fraying) and fallow deer occasionally pull them off. Where these animals are present or fraying is likely it is advisable to use the 150mm guard.

150mm Diameter 25mm x 35mm Mesh Guards

6. These are intended to protect rural amenity trees from browsing and fraying by deer (Figure 3) but trials are under way to assess their suitability in parklands and pastures. Some success has been achieved against sheep although damage to the guard has occurred with some horned varieties when the horns have accidentally caught in the mesh while the animals were grazing. Trials in urban areas have shown that 150mm diameter guards are as effective a protective barrier as the traditional wire guard (Pepper and Williams 1982). They also appear to withstand impulsive vandalism and are less likely to be used as a receptacle for dumping rubbish. Their low purchase price enables their replacement, if stolen or badly damaged, to be made more than once for the cost of a wire guard. The 25mm x 35mm mesh is small enough to exclude rabbits. The netting is delivered in a 0.45m wide roll. Rolls 1m wide are available for use where a larger diameter (300mm) guard is required to protect trees and shrubs. The necessary length to give the desired guard height of 1.2m-1.5m for deer or 1.8m for sheep is cut from the roll (Figure 2). The cut length is rolled to form a 150mm diameter tube, wrapped around the tree, and the edges fastened with rings. The guard is stapled to a stake with either 25mm x 2.5mm (12 SWG) netting staples or, where large numbers of guards are to be erected, 20mm staples are dispensed from a staple gun. The support stake of a standard tree can be utilised but on smaller unsupported trees it is necessary to provide a stake for the guard. If the tree is unstaked and gives sufficient support, the mesh may be cut to form around the lower branches to hold the guard in place. Where rabbits are present it is important to make sure the mesh is at least 25mm away from the tree stem.
7. If large, horned animals are likely to be present the much stronger Netlon 35mm x 35mm Tensar mesh should be used. Cattle guards using Tensar have been effective for 2 years (Figure 4).
8. Details of materials and suppliers are given in Appendix 1.

References

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