

Notes

PREVENTING DEER DAMAGE TO DOUGLAS FIR BY POWER FENCING

Sean Lenihan

Ballinglen forest, Co. Wicklow

Deer damage has been a problem, to a greater or lesser extent, in Ballinglen forest for the past fifteen years. Up to 1980, the main species affected was Sitka spruce, and although severe bark stripping occurred in many cases, by and large the trees survived and recovered.

Serious and permanent damage to crops started in the 1980s. This coincided with the use of Douglas fir in the reforestation areas and a large rise in the Sika deer population. Within 2-4 years of planting, 40% of trees died with the remainder forming multi-leadered bushes with no silvicultural potential.

This note describes measures taken to prevent damage.

Type of Damage

Bark stripping usually started at or near the root collar and continued up the stem with some or all of the bark being removed (Fig. 1). Once ringed, the tree died immediately. Unlike hares, it was very rare for deer to break off the leader or main stem. However, strong winds will cause breakage in trees of 6 years and over, where stems and leaders have been weakened by bark stripping, and decay has set in.

Scale of Damage

Approximately 40 of the 60 ha reforested with Douglas fir since 1980, have suffered severe damage. Half of this area was replanted with Douglas fir and has in turn been attacked by deer for a second time, despite increased deer



Figure 1: Typical damage to young Douglas fir outside power fence.

cullings. It was therefore decided to erect a purpose-built electric fence in an attempt to overcome the problem and this was completed in the spring of 1988.

Fence Design

The fence design is based on a specification used by the Rutland Electric Fencing Company, Scotland and has been used by the Forestry Commission in Scotland for some years. It consists of an outer fence 1 metre high with four strands of live wire, and an inner fence 1 metre high with three strands of live wire (all wire 2.5mm high tensile). The span between the outer and inner fence is .65 metres (Fig. 2). The fence is supported by stakes at not more than 20 metres apart. Larch stakes were

used in Ballinglen, although purpose-made Insultimber Stakes are available; these last longer but are more expensive. The fence is powered by a heavy duty 12 volt battery and an energiser; the battery normally lasts one month. The area fenced in is 6.0 ha, all Douglas fir reforested in 1988. The total length is 1200 metres, and based on experience, will need to be operational for up to 10 years. One permanent stile/ladder set in concrete was also constructed to facilitate normal management and the changing of the battery every month.

Cost

The total cost of the fence was £3,900 (£3.35 per metre). This figure breaks down as follows:

- (1) Materials (including 2 x 12 volt batteries, 1 energiser, 1 battery charger and 1 security box) – total £1,100.
- (2) Labour 405 S.M.H. at £6.90 S.M.H. = £2,800.

Fence line cleaning (24%), and stile construction (7%), accounted for 31% of the SMH used. Maintenance of the fence will be in the region of £350 p.a. This includes an annual straying of Roundup on the fence line, changing the battery monthly, and the cost of charging, plus regular inspections for damage to the fence and to check for earthing at any point.

Results to Date

The fence has been in operation since July 1st 1988 and so far the results have been very impressive. There has been no deer damage and no sign of any incursions as evidenced by the complete absence of tracks and droppings. This contrasts sharply with Douglas fir



Figure 2: Layout of power fence around Douglas fir plantation.

re-afforestation planted in 1988 in an adjoining property not fenced in by a power fence, where to date, 40% of the trees have been "damaged".

From a Management point of view the electric fence has been a complete success and has made the re-afforestation of Douglas fir in this part of Wicklow, a viable, silvicultural proposition once again. Whether or not it is viable economically, bearing in mind the cost per metre, is a matter for debate. One thing is certain though, it will not be possible to grow Douglas fir again in Ballinglen, unless the deer problem is brought under control, and based on results to date, power fencing is the only means by which that can be achieved.

Conclusion

Considering the fence also acts as a – sheep and cattle barrier, the cost of £3.25/m, although high, is not really

expensive. However, if it is seen to be excessive, then surely part or all the cost could be recovered from a premium charged on the timber produced throughout the rotation.

There will always be a strong demand for good quality Douglas fir and if it is going to cost more to produce it, then like any other product, a higher price will have to be obtained at the end of the day. The alternative is to abandon the establishment of Douglas fir in its traditional high yielding area i.e. most of Co. Wicklow. This hopefully will not come to pass, as it would not be in the best interests of the grower or the timber trade.

Finally, the Ballinglen experience with power fencing has been very successful and consideration should be given to using this method of preventing deer damage on a large scale.