

Forest establishment quality assurance

Robin Trewin

Introduction

The back cover on the November 2015 issue of this Journal shows a tree planter at work and he is making some mistakes. It is hoped that this article will be in good time for the 2016 plantings and will raise awareness of the importance of Quality Assurance Indicator Plots in controlling planting operations (Trewin & Cullen, 1985).

Quality Assurance Indicator Plots

Studies and records of planting quality in Quality Assurance Indicator Plots (Trewin, 2005) have revealed problems in recruiting, training and retaining planters. Of most concern was that despite traditional random checks by gang leaders and forest company supervisors, with follow-up checks by separate company employed personnel, percentages of acceptable planting quality were poor:

- Fault-free planting was very low at 13.50% – roots well positioned in cultivated ground and firmed-in at a depth >10 cm
- Good planting was 29.70% – most roots orientated down at a depth >10 cm
- Poor planting was 27.60% – poor cultivation, roots up at a depth <10 cm
- Bad planting was 13.50% – no slash removal or cultivation with all roots up
- Very bad planting 15.70% – no slash removal or cultivation, slit planting with some thrust up unburied roots.

Planting research and practice

Apart from the *NZIF Forestry Handbook* section on 'Establishment (Section 5.14)', little has been published on the following plantation establishment operations: site selection and preparation, tree handling, and planting and tending. Less than optimum treatment of any one of these can cause poor growth and even crop loss.

Common poor planting techniques

1. Incorrect use of planting box

Modifying a planting box to facilitate removal of trees. Instead of replacing emptied boxes with fresh ones, planters handle and damage fresh supplies

by pulling trees from standard planting boxes and stuffing and crushing as many as possible into this modified one. This allows an increase in planting runs and daily planting tallies. In the process, plant roots are stripped clean of nursery soil containing mycorrhizae and fine feeder roots, essential for quick recovery and good uniform growth after planting.

2. Further damage and exposure of trees during planting

To avoid unnecessary handling damage and exposure of trees only one tree, at a time, should be removed from a planting box.

3. Incorrect stance of a planter

Standing well behind the planting spot, a worker cannot easily clear, cultivate or open a good hole using the well-proven 'Lever & Lock' technique (Trewin, 2005).

4. Inadequate clearing (screefing) of a planting spot

Logging residue (slash) must be cleared from the planting spot with the spade and brushed aside with the boot prior to hole cultivation.

5. Inadequate cultivation for deep, straight root planting

Unless very closely supervised planters rarely cultivate to full spade depth. Then it is not possible to use the recommended root straightening 'positive-pull-up' technique without reducing planting depth and wind firmness. Good deep and straight placement of roots is essential as, unfortunately, the rapid growth of well-grown and handled tree stocks (up to 3 m in two years after planting on fertile sites) predisposes them to topple in gale force winds (Trewin, 2003).

Importance of establishing Quality Assurance Indicator Plots

Over the past few years the immediate recall of bad planters to correct faults detected in Quality Assurance Indicator Plots has proved to be the only effective control of planting operations. All other planting checks have proved ineffective due to the daily introduction of new unskilled slow planters, who lag behind making good control of faster planters impossible.

Conclusion

If full advantage is to be taken of the millions of dollars spent on genetics and tree improvement, nursery propagation, site preparation and planting, more attention needs to be paid by the industry to the training of establishment workers. Further, planting is hard, especially as workers have to travel long distances before dawn and after dark to many planting sites. Because of this, turnover of workers is high and new recruits may receive little or no training.

A major improvement in planting quality has been the insistence by a major forest company of the use of the new 40 cm long-bladed planting spade manufactured by Levin Sawmakers. Traditional planting spade blade lengths are only 30 cm and often, when badly worn, less than 25 cm. It is recommended that all forest companies production test and compare the quality of planting with a standard 30 cm blade with that of the new 40 cm one. Further, copies of a photographic training aid, showing the effects of good and bad planting, are available from Advocate Printers

in Rotorua. The brochure is laminated (waterproofed) for field use and has proved an invaluable training aid for new planters. A copy should be kept in gang buses.

Reference

- Trewin, A.R.D. 2003. What Can We Do About Toppling? Establishment Problems and Remedies. *NZ Journal of Forestry*, 48(1): 32–47.
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Last word

Brian Stanley

The 'Last word' for this issue of the Journal is the opening address given by me to the ForestWood 2016 conference held on 16 March 2016.

Kia ora tatou

My name is Brian Stanley, Chairman of the Wood Council of New Zealand. I extend to you all – especially our special guests – a very warm welcome to ForestWood, the pan-industry conference we hold every two years.

Our hosts today are the Forest Owners Association, Wood Processors and Manufacturers Association and the Forest Industry Contractors Association, with support from the Wood Council and the NZ Farm Forestry Association. Our hosts are also partners in the Wood Council, which represents the common interests of the forest growing and wood processing sectors.

We work together on major policy issues, we convene the highly successful Timber Design Awards,

and we communicate the benefits of the forest industry to the wider public through NZ Wood. Some of the latest NZ Wood promotional banners are here today and you may have noticed the big screen NZ Wood advertisements at Auckland and Wellington airports.

We also have a Strategic Action Plan, which I will discuss later.

Some recent history

In 2014, our then chair Bill McCallum highlighted several issues facing our industry. They were forest safety, market access, building standards and sustainable land use. In 2013, we were facing a crisis of public confidence because of the incidence of serious injuries and death in