

The Management of *Pinus radiata* Forests. Is it Time for a Rethink?

By Mick O'Neill

The recent announcement by Carter Holt Harvey Limited of major changes in the management of their radiata forests provided something of a wake up call to a profession which over recent years has become notable more for its willingness to allow politicians, economists, accountants and various pressure groups to determine forest policy and practise, rather than providing the leadership the sector needs. It must be assumed the drastic changes proposed by CHH result from a careful analysis of the extensive growth data they have available plus their knowledge of the possible processing options and the markets for a range of forest products. Few organisations would be better placed to make such a decision. However from the information which accompanied the announcement it seems that the changes are being made primarily to reduce operating costs. Eliminating pruning, reducing the initial stocking and pulling back the rotation to 20 years will certainly save money but is the regime proposed one which would be a good proposition for other forest owners and should current silvicultural practise be modified? The use of proven clones will probably improve wood density and consequently fibre yield, stem form, and achieve other desirable gains but will these be sufficient to offset the losses which will result from a reduction of 5-10 years in the rotation? Also is there a downside to the reduction in genetic variability in terms of resistance to pathogens and the ability to cope with a wide range of environmental conditions, the last being one of radiata's great assets? The existing practise of planting sufficient trees to get early canopy closure not only looks after weed problems but also gives the forest owner the opportunity of any early selection for the qualities he is looking for in the final crop.

Apparently some research has shown that pruning causes the loss of two and a half years growth. Surely it would be possible to adjust the pruning regime (three lifts instead of two, no pruning above the bottom green whorl) to prevent this happening. Also whether you are pruning for vigour or form must have some influence as will the skill of the contractors and the supervising staff. However, even on the best sites it seems unlikely pruning could be justified for a crop grown on a 20 year rotation. At the stockings, both initial and final, and rotation proposed it is doubtful that the capacity of the forests to

produce wood will be fully realised, surely a major concern on high site quality areas handy to the points of utilisation. In addition it is logical to expect something will move in to occupy sites when there is not canopy closure for a significant part of the rotation, an open invitation for a whole range of weeds, with which we are abundantly blessed.

The most expensive operation in forest management is the final harvest and accounts for more than all the other operations put together, from and including planting. Piece size and yield/hectare both have a significant effect on the cost of logging particularly on hauler country. Will the gains made from reduced establishment and tending costs totally offset any increase in logging costs?

Other people will have other questions but the company could quite rightly say that how they manage their forests is their business. However, as some reasons have already been given for adopting the new regime the company may be prepared to enter into further dialogue. This would continue the spirit of cooperation which has existed for many years in developing management systems for our plantation forests. The changes being introduced are dramatic and run counter to what has been considered sound practise for many years. "It may be the right way to go for CHH which is a totally integrated operation but NZ Forest Products which had a similar set up and a very high level of forestry expertise stayed with more conventional silviculture."

The management of *Pinus radiata* was developed to its present position largely as a result of work by the Silvicultural Research Group at the Forest Research Institute (FRI) under the leadership of Harry Bunn. There were at least two seminars at which forest managers, industry leaders, researchers, farm foresters, loggers and end users were given the opportunity of commenting on the proposals put forward by the research group and suggesting changes which they thought desirable. It was apparent at the seminars that the FRI team was well ahead of any other organisation in their thinking on how radiata should be managed. Consequently their proposals were accepted with little or no change. However, it was also made clear it was not possible to define one or two regimes which could apply to the whole country and there is no question that clear wood regimes have been used on many low site quality areas where pruning is a waste

of effort and money. Also there have been cases more recently where changes have been made, not to improve the quality of the crop and long term profitability, but to improve the bottom line in the short term. One of our better known financial advisers claimed that forestry is a simple business which involved little more than putting the trees in the ground, doing a bit of trimming and then felling the same trees at age 25. I know of one case where it is planned to delay thinning for two years after pruning, a prescription which most people would have some difficulty in justifying. In another case the Forestry Corporation decided there would be no further pruning in a stand which had already been low pruned and which was on a reasonably good site. Concern has been expressed about the low density of some of the radiata coming on to the market, probably a result of early clear felling. The pursuit of short term gain will almost certainly result in long term pain in any forestry business.

In my opinion one factor overrides all others in considering what impact if any the Carter Holt Harvey changes to their *Pinus radiata* management will or could have on the rest of the country. Whereas the company knows exactly the volume and quality of wood it requires from its forests and will manage these forests accordingly, other forest owners will be faced with a range of markets, which will be subject to change, but sawlogs will probably continue to be their primary source of revenue. As Harry Bunn consistently pointed out the intensive tending regime gives maximum flexibility in accommodating such changes, and provided the forest owner is not driven by other than sound management principles, existing silvicultural practise appears to be still the way to go. Other regimes have their place, particularly where the site quality is low, access is difficult or where there may be no markets for intermediate yields. The Carter Holt Harvey proposals show there is a need to look at the possibility of removing defects by machining rather than pruning and to determine if the capacity and capability of doing this is national or regional. There is also a need to look at the place of and the gains to be made from the use of clonal planting stock. Perhaps another Radiata Management Seminar is warranted.

*NZ Forest Products is the company which founded the forest estate on which CHH is based.