

PLANTATION NUTRITION MANAGEMENT IN NEW ZEALAND – 25 YEARS ON

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It is more than 25 years since Graham Will's cornerstone work 'Nutrient deficiencies and fertiliser use in New Zealand exotic forests' was published. This FRI bulletin, focussing primarily on radiata pine, summarised over 30 years of research and trial results on the nutrition of plantation forests in New Zealand, and also presented recommended nutritional management strategies.

Since this time a substantial amount of research on forest nutrition, soil quality, nutritional genetics and wood quality has been undertaken and although reported in various journals and unpublished reports there has been no attempt to integrate this new knowledge into a useful format until recently with the publication of "Plantation Forest Nutrition". Another development has been the establishment of a national foliage nutrition database with more than 60,000 records collected over 30 years that allows us to determine nutritional trends in space and time and aid in better focussed fertiliser prescriptions.

Current research is examining in more detail the relationships between soil properties and productivity, wood properties, the influence of genetics, symbiotic relationships and environmental controls on plant responses to fertiliser application. The environmental fate of N fertilisers has also been a current focus along with the role of rhizobacteria in producing plant growth promoting substances and the influence of forest management practices on this activity as well as soil carbon sequestration. Finally, nutritional data has recently been developed into a software tool now being adopted by the forest sector to aid planning and management of nutrition and fertiliser use, saving time and effort while maximising economic returns.

Editor's Note: An extended manuscript has not yet been submitted for this presentation.