

wood supply in New Zealand, and even making up about 60 per cent of the logs delivered to independent sawmills, there is the potential for reduced competition which could have an adverse impact on market performance. I did, however, get the impression that the independent sawmills did not consider the supply situation to be difficult, although it would depend on the general demand situation

both domestically and on export markets, as well as on location of the sawmill. The fact that log buyers and sellers have to relate more or less directly to the log export prices in both contract negotiations and price re-negotiations appeared unpopular amongst independent sawmills, but seems rational from a market performance point of view, knowing that log export is significant and that log export is an option

for most suppliers of roundwood.

If planting continues at 60,000 hectares or more per year, the potential annual harvest could increase to more than 60 million m³ in the next 30 years. This harvest level would put New Zealand on the same footing as the largest producer in Western Europe, Sweden. New Zealand will in that case emerge as one of the leading players on the world markets for wood-based



NEW INFORMATION



Radiata pine and nitrogen

Over the years, forestry has played an increasing role in rural livelihoods. Recognising a need for adequate forestry fertiliser information and advice, the Forest Research Institute conducted a research programme with radiata pine and N-rich urea, much of it in the central North Island's Kaingaroa Forest.

Without doubt, healthy radiata pine plantations in New Zealand are responsive to nitrogen fertiliser, provided it is applied shortly after thinning or pruning, or a combination of both. Where the crop has the opportunity to expand the canopy as a result of silviculture, nitrogen fertiliser ensures this happens quickly.

For forests chronically short of nitrogen, such as the sand-dune forests along the west coast of the North Island at Aupori, Woodhill, Poutu (north of Auckland) and Santoft (south of Wanganui), further trial work with nitrogen fertiliser demonstrated large growth gains. Of particular note, researchers found that under especially low nitrogen conditions, silviculture is not necessarily a prerequisite before fertilising.

However, also of note, any effectiveness of the applied nitrogen is over within four years. At this stage, growth rates of fertilised trees parallel those of unfertilised control trees.

During the research programme, FRI identified 200 kg N/ha as the optimum biological application rate, and that about 70% of the response could be obtained at 100 kg N/ha. This rate is high in relation to the trees' capacity to take up nitrogen. Volatilisation of nitrogen from N-rich urea can account for part of the applied nitrogen being lost as nitrogen gas and average annual uptake of nitrogen by a healthy radiata pine crop (above-ground only) can vary.

Recent work by FRI for BOP Fertilisers Ltd has identified excellent potential for improving plantation productivity with

nitrogen (and phosphorus) fertilisers. This conclusion was reached by applying FRI growth models, which incorporate fertiliser effects on productivity, to the FRI foliar nutrient database for forest estates from Auckland to the central North Island. The outcomes of this research were not only greatly increased productivity, but also marked changes in wood flow over time, giving management the opportunity to reschedule the timing of harvest.

The use of N-rich urea is normal practice in forestry, and the experimental programme being initiated with CRN promises further advantages in the future for forest managers concerned with improving the effectiveness of N-rich urea.

A matter of timing

The effectiveness of nitrogen release from N-rich urea for pines is strictly time limited; it can be a matter of a few months. As the applied nitrogen rapidly enters the organic matter/microbial cycle (and release within the cycle as mineral nitrogen is small), any technique to both slow down the rate of release and minimise volatilisation has advantages for any tree crop. CRN has the potential to meet these requirements. Small quantities of this experimental product have been imported by Petrochem for use in ongoing studies.

Thanks to the generosity and resources

of organisations like Carter Holt Harvey Forests, Fletcher Challenge Forests, Rayonier NZ Ltd, Ermslaw One, Timberlands West Coast Ltd, and Petrochem, FRI has begun a programme to examine CRN's potential to improve the efficiency of nitrogen use in pines.

In particular, the programme will match the rate of release of nitrogen with the trees' uptake potential, and overcome the gaseous nitrogen loss by volatilisation. It will also test the effectiveness of N-rich urea (46%) applied at 200 kg N/ha in spring, against CRN (t-60; 41% N) applied at 200 kg N/ha.

Meanwhile, alternative rates of CRN fertiliser will be examined to define to optimum:

- Control- no fertiliser
- CRN (t-60) at 50 kg N/ha
- CRN (t-60) at 100 kg N/ha
- CRN (t-60) at 200 kg N/ha.

Other design features include four replicates of each treatment with 25 trees per plot. The trial will be conducted in production-thinned stands about 11-12 years old and preferably thinned six to 12 months prior to spring 1997. The two trials are scheduled to run for four years, with the possibility of less intensive measurements continuing.

This exciting research initiative has potential to offer the forest industry some major improvements in nutritional management programmes, and in obtaining data for ongoing nitrogen use.

Dr Malcolm Skinner
Soils and Site Productivity
Scientist, New Zealand Forest
Research Institute Limited

Dothistroma pine needle blight

Each year the Dothistroma Control Committee, a sub-committee of the New Zealand Forest Owners' Association Inc., mounts an aerial spray programme to control Dothistroma.

The committee is concerned that the owners or managers of small forest blocks may overlook Dothistroma in their plantations until serious damage to the stands

has occurred.

Any forest owner in the North Island who has infected trees may use the Dothistroma Control Committee services to have their trees aerial sprayed with a copper fungicide.

The main functions of the Dothistroma Control Committee are to:

- purchase bulk supplies of suitable cop-