was least from small rata trees in even-sized stands, and was greater in the canopy than in the sub-canopy. Possum browsing patterns were similar to foliage loss patterns. Browsing was heaviest in the canopy of large trees but, in the two areas with high numbers of possums, seedlings and small trees were also browsed. Intensity and occurrence of possum browsing were significantly correlated with foliage loss on individual trees, and dying trees were the most heavily browsed. It is concluded that the stress imposed by possum browsing is a principal cause for the dieback of southern rata.

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The ecology of *Dacrydium pressinum:* a review

Norton D.A., Herbert J.W., Beveridge A.E. Vol. 26(1): 37-62 (1988)

Literature relating to the ecology of rimu *(Dacrydium cupressinum)* is reviewed with respect to the reproductive biology, vegetative morphology and growth, and population dynamics of this species. A comprehensive reference list is included.

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Mountain beech *(Nothofagus solandri* var. *cliffortioides* decline in the Kaweka Range, North Island, New Zealand.

Hosking G.P., Hutcheson J.A. Vol. 26(3): 393-400 (1988)

Forest dieback in the Kaweka Range appears to be a stage in the natural process of replacement for mountain beech. An examination of stand structure in stable, transitional, and unstable forest showed dieback and tree mortality to be associated with mature and over-mature stands. Recruitment peaks suggest periodic natural disturbance, such as severe drought, initiates tree decline. Insects and disease, although contributing to the rate of decline, were shown to be symptoms rather than causes.

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Evolutionary interpretation of a high temperature growth response in five New Zealand forest tree species

Hawkins B.J., Sweet G.B. Vol. 27(1): 101-7 (1989)

A controlled environment experiment was undertaken to determine optimum growing temperatures for rimu *(Dacrydium cupressinum),* kahikatea *(Dacrycarpus dacrydioides),* totara *(Podocarpus totara),* kauri *(Agathis australis),* and mountain beech *(Nothofagus solandri* var. *cliffortioides),* at three light intensities.

Light intensity had no significant effect on the growth of any of the five species.

All species achieved maximum growth at a day temperature of 27°C, and at night temperatures of 22°C or 27°C. Significant differences in growth occurred for all species between the five temperature regimes examined.

All species showed a significant difference in net photosynthetic rate between temperature regimes. Rimu, kahikatea, totara, and kauri experienced maximum net photosynthetic rates in one of the 27°C regimes. Mountain beech had a maximum net photosynthetic rate in the 21°C regime. Both rimu and beech allocated significantly more photosynthate to leaves at 27°C than at 21°C day temperatures.

The optimal temperatures for photosynthesis and growth are much higher than reported for other temperate species. It is suggested that this attribute evolved in the subtropical climates of the Miocene, and has remained as a relic trait to the present. The significance of this is discussed, with particular reference to timberlines.

Agroforestry video wins first prize

A video on radiata pine agroforestry produced by the Forest Research Institute in Rotorua, has won first prize as the best overall entry at a technical film festival in Czechoslovakia.

The New Zealand entry was awarded the MAGNA MATER Grand Prix, as the best of 144 productions from 53 countries. The entries covered a wide range of science and education aspects of agriculture, fisheries and forestry.

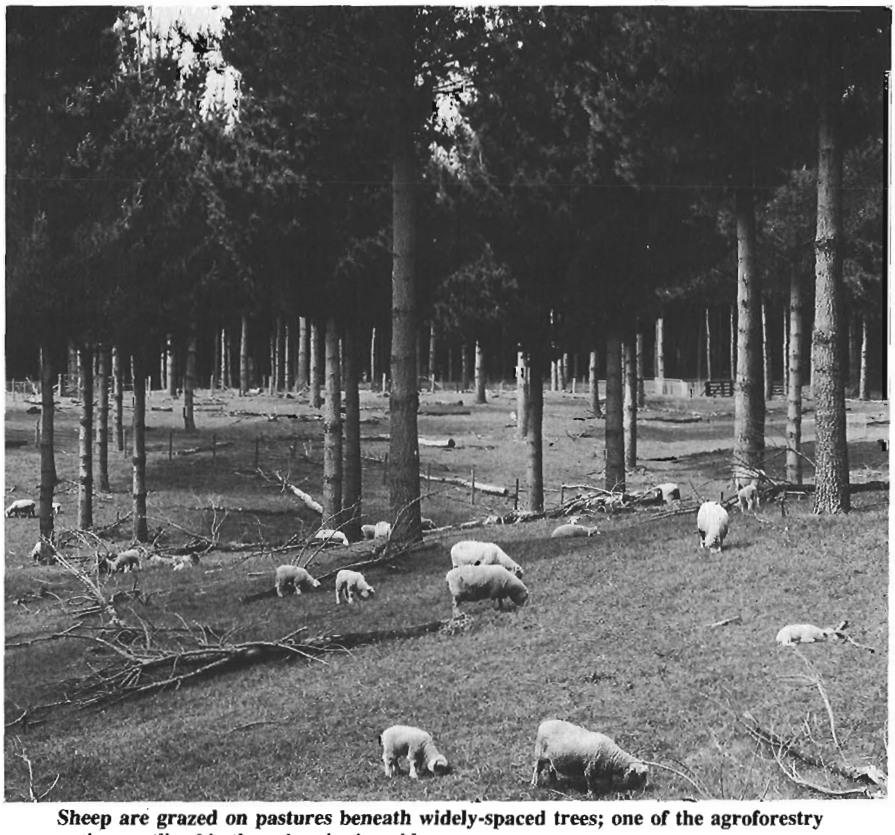
The 12-minute-long video is one of a series on agroforestry topics produced by the Forest Research Institute. It describes research and development into three different ways radiata pine and agriculture can be combined:

Forest grazing – forest sites are sown in forage legumes, and cattle are grazed to control weeds and to benefit tree growth;

Trees on pasture – widely-spaced trees are used in conjunction with understorey grazing as a profitable land-use system;

Timberbelts – shelterbelts are managed for both timber production and agricultural shelter. (This topic is also the subject of a separate, more detailed, video.)

The prizewinning video will be shown at various specialised events throughout Czechoslovakia over the next six months, on Czechoslovak television.



Sheep are grazed on pastures beneath widely-spaced trees; one of the agroforestry options outlined in the prizewinning video.