

Letter to the Editor

SITE INDEX EQUATIONS FOR RADIATA PINE IN NEW ZEALAND

Sir,

Burkhart & Tennent (1977) presented site index equations for *Pinus radiata* D. Don (radiata pine) which allow its height development to be represented for the major exotic forest areas in New Zealand. Because of the large proportion of New Zealand covered, these equations have received considerable use by workers in forest management and forest research (cf. Manley & Knowles 1980; Tennent 1981; L. C. Evans, pers. comm.), and have been found to be generally representative of the areas described by Burkhart & Tennent (1977).

The equations were derived from data with various ranges in tree ages for various regions, as shown in Table 1 of Burkhart & Tennent (1977), the youngest being between ages 5 and 10 years. Not stated by the authors was the fact that the data at these youngest tree ages were restrictive. As a result the youngest ages were under-represented.

It has come to my notice, through research and informal comments from forest management, that the Group 3 site index equation over-predicts site index when ages below about age 10 are used for Kaingaroa State Forest. The published equations predict too low a height at younger ages, resulting in an over-predicted site index at age 20. The extent of the over-prediction appears greatest at age 5, where as much as a 3-m over-estimate of site index has been observed. The over-estimate decreases progressively until about age 10, from which age the equation appears reliable.

Sufficient information is not to hand to enable similar statements to be made for other regions. However, as the same equation was used for all regions the same problem is likely to occur. The final sentence of Tennent & Burkhart (1977) is still pertinent:

"When possible, height growth data should be collected in local areas to verify the validity of these equations".

REFERENCES

- BURKHART, H. E.; TENNENT, R. B. 1977: Site index equations for radiata pine in New Zealand. **New Zealand Journal of Forestry Science** 7(3): 408-16.
- MANLEY, B. R.; KNOWLES, R. L. 1980: Growth of radiata pine under the direct sawlog regime. **New Zealand Journal of Forestry** 25(1): 15-34.
- TENNENT, R. B. 1981: A simulation model for *Pinus radiata* in New Zealand. Ph.D. dissertation, University of Georgia, United States. 72 p.

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