

The incidence of resin pockets

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Resin pockets are the most frequently occurring random defects to cause degrade in products from pruned radiata pine logs. They are present at some level in all New Zealand stands of radiata pine. The most useful general measure of resin pocket incidence to emerge from early studies by Park and Parker (1982) became the standard and is now routinely used as an essential variable to supplement PLI (Pruned Log Index) in pruned log quality definitions.

The incidence of resin pockets (rp/m²) is defined as the number observed per square metre of sawn surface area in timber from the clear and intermediate (clear-cuttings) zones of pruned logs.

Degrade due to resin pockets varies depending on the numbers present, size and type, the timber grading criteria, and how well logs have been pruned. Consequently, accurate definitions of resin pocket degrade can only be derived through mill specific studies. Nevertheless the total incidence alone (rp/m²) does indicate whether or not these defects are at background, acceptable or problem levels. The generalised degrade classes given in Table 1 emerged from a series of pruned log conversion studies undertaken whilst at FRI in the late 1980s and early 1990s. Further conversion studies periodically undertaken by Interface Forest & Mill Ltd over the past decade have confirmed the continuing relevance of those generalised degrade classes.

Interface routinely samples stands for pruned log quality for a wide range of clients and in a wide range of geographic locations. In 1997 we had a database on 95 stands analysed by sawing and summarised results on resin pockets were included in our widely circulated "Forest Growers Guide to PLI" and also reported by Somerville (1997). We now have results on 336 pruned stands analysed by sawing so it is timely to update previous publications to redefine the national average for resin pocket incidence and present some regional trends.

Table 1 summarises resin pocket incidence by five generalised degrade classes and redefines the national average, previously calculated as 0.62 rp/m², at the lower figure of 0.47 rp/m². A breakdown by 12 forestry regions spanning the length of New Zealand is given in Table 2. Areas represented by less than 6 stands have been grouped as 'Other'. The minimum and maximum for each region has been included to supplement the mean and standard deviation in order to make

a very important point. While regional means may differ markedly there are some 'clean' stands in all regions and there are stands with 'significant' to 'problem' levels of resin pockets in all but two of the regions.

References

- Park, J.C.; Parker, C.E. 1982: Predicting value losses due to resin pockets in timber from pruned radiata pine. New Zealand Forest Service, *FRI Bulletin* No. 6.
- Somerville, A. 1997: Resin pockets – their description, methods of assessment and measures of incidence. Pp 38-44 in *Proceedings of Forest and Farm Plantation Management Co-operative*, May 1997.

Table 1: Summary of incidence of resin Pockets in 336 Stands

Degrade Class	Range rp/m ²	Stands		rp/m ²	
		no.	%	mean	std dev
Clean	<0.40	185	55	0.20	0.10
Minor	0.40 - 0.79	91	27	0.56	0.12
Significant	0.80 - 1.19	40	12	0.95	0.12
Problem	1.20 - 2.00	17	5	1.39	0.16
Major	>2.00	3	1	2.48	0.52
		336	100	0.47	0.40

Table 2: Resin pocket incidence by region.

Region	Stands no.	Resin Pockets (rp/m ²)			
		min	max	mean	std dev
Northland	26	0.05	2.22	0.82	0.61
Auckland / Waikato	6	0.12	0.61	0.27	0.18
NE Bay of Plenty	6	0.23	0.85	0.68	0.23
SW Bay of Plenty	104	0.01	1.61	0.31	0.27
Taupo / Turangi	98	0.03	1.31	0.33	0.24
East Coast	15	0.34	0.94	0.60	0.24
Inland Hawkes Bay	23	0.13	1.21	0.81	0.28
Coastal Hawkes Bay	7	0.21	1.58	1.06	0.46
Nelson / Marlborough	9	0.41	1.31	0.79	0.34
Canterbury	7	0.41	3.07	1.22	0.88
Westland	21	0.06	0.89	0.24	0.19
Southland	6	0.12	0.74	0.31	0.24
Others	8	0.07	1.37	0.81	0.51
ALL	336	0.01	3.07	0.47	0.40

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