

MECHANISED PRUNING

Presenter:

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Meeting Date:

7th October 2022

BACKGROUND

- **Pruning of Radiata Pine in NZ has not advanced in 30 years and is now faced with labour shortages, high costs and high health and safety considerations.**
- **Mechanised pruning addresses these issues and importantly provides significant added value to the forest.**



DEVELOPMENT WORK

The development work commenced earlier this year and included the manufacture of ALPHA prototype mechanised pruner.

Trials showed that while functioning correctly, the blade /branch engagement could be improved.



BLADE DESIGN I

- To ascertain the type of blade that would provide the cleanest cut with minimum bark damage, lab tests of a range of 16 blade configurations were undertaken.



BLADE DESIGN II

- The lightly serrated angled blade provided both cleanest and lowest cutting force results
- Cutting force of 10,000N x 5 simultaneous cuts will be provided by Beta prototype.

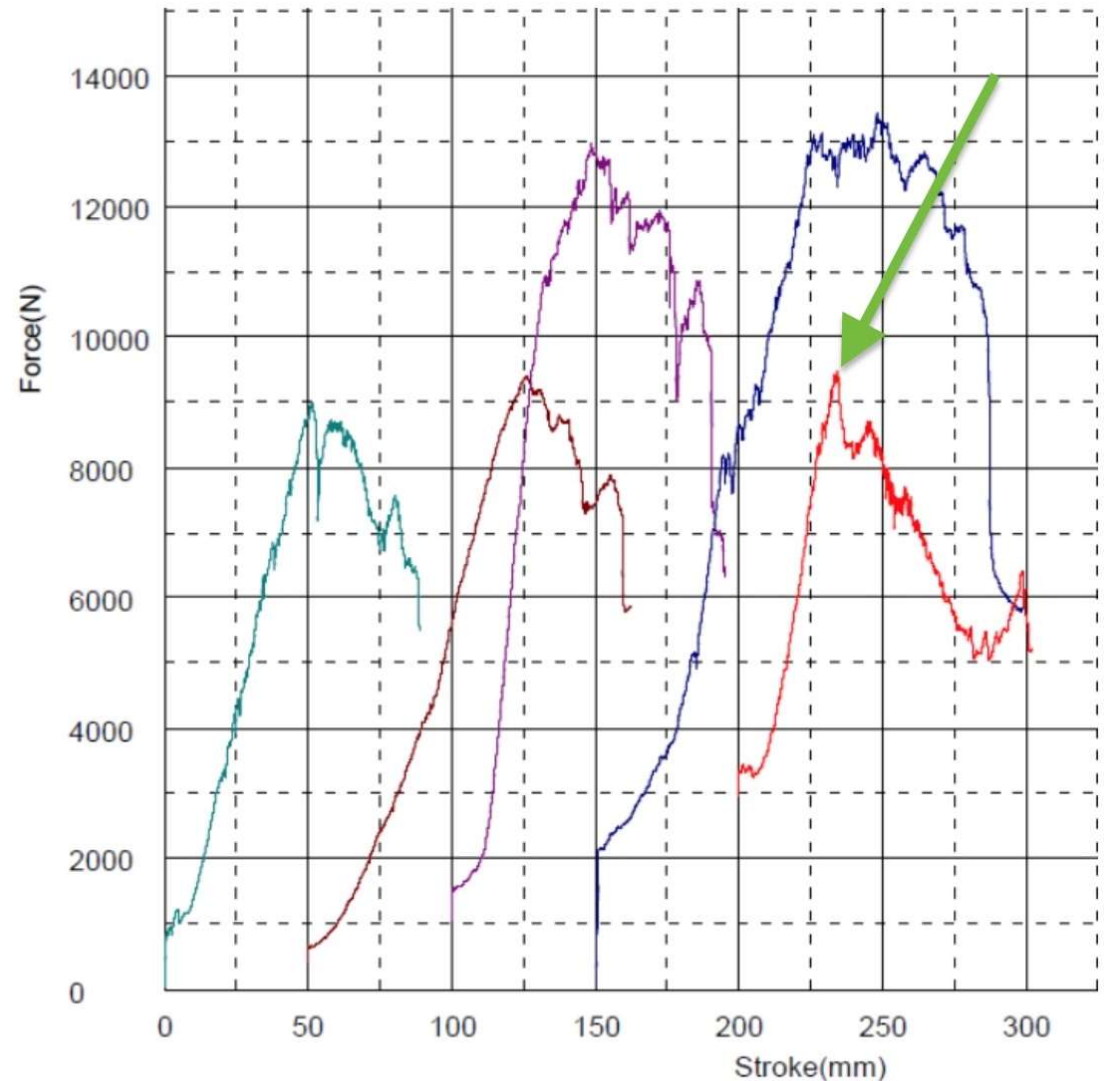


Figure 4 45-degree blade angle graph

ALPHA PROTO

- The Alpha prototype has been fitted with new finely serrated blades and trialled.
- This achieved clean acceptable cuts as shown. Blade edges caused bark damage. Not shown



BETA PROTO

- The Beta prototype is now being designed .
- Key Features
 - 5 Blades up from 3 in Alpha
 - 10 Wheels to control bark to blade gap. (up from 3 wheels in alpha)
 - Slimmer design and easier to operate.
 - Original work plan budget for 2 Beta units was \$500k.
 - Now proceeding with 15-20% to produce first Beta unit. Once performance is proven, a second unit would follow.
 - First unit to be trialled before Xmas.

INVOLVEMENT FROM INDUSTRY PARTNERS

- **Hudson Clearwood wishes to acknowledge support from Manulife Investment Managers and Woodhill Forest Owners, Ngā Maunga Whakahii o Kaipara for the provision of trial forest. Manulife also attended all trials with Silviculture experts and provided practical and constructive comments**

Precision Silviculture Partnership

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