Integrated Energy Wood and Pulpwood Harvesting in First-thinning Stands

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The integrated wood procurement system based on the two-pile method, in which pulpwood and energy wood fractions are stacked into separate piles in early thinnings.
Drawing: Juha Varhi, © Metsäteho Oy.

Aims of the study:

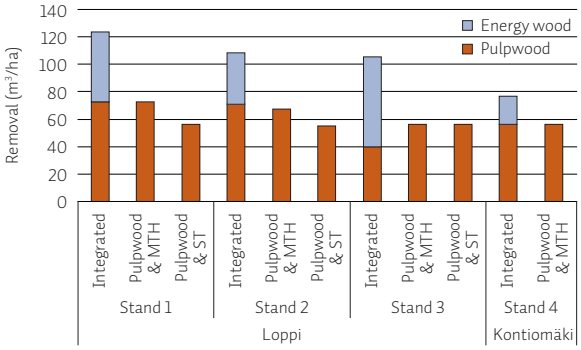
1) To determine the time consumption and productivity in cutting work when using the integrated cutting of first-thinning wood,
2) To clarify the development of the total removal in integrated harvesting operation, and
3) To investigate the quality of pulpwood poles when using integrated cutting with multi-tree handling.

Main results:

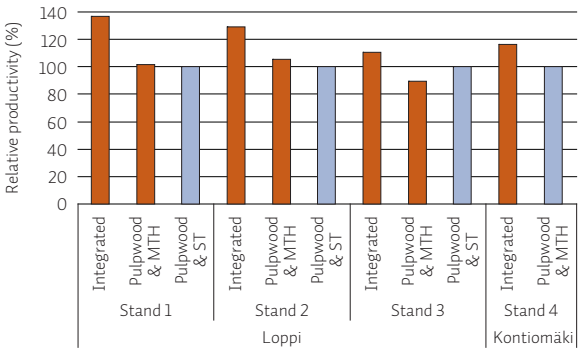
- The total removal in integrated wood harvesting increased significantly compared to that of conventional, separate roundwood harvesting.
- When the total removal from the harvesting site increased considerably, there was a significant increase in the productivity of cutting work in integrated wood harvesting compared to the situation in separate pulpwood harvesting.
- In addition, the delimbing quality and bucking accuracy of the pulpwood poles obtained in multi-tree processing were comparable to those produced in single-tree handling.
- There were no problems with measuring the work output by a grapple scale attached to the boom of the forwarder.

Conclusions:

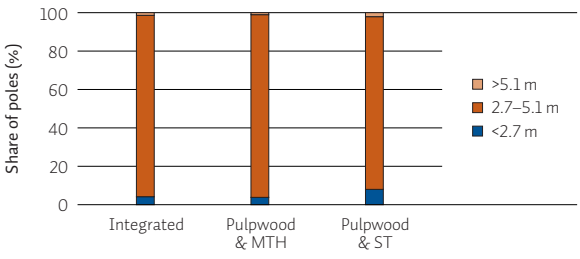
As the studies indicated very promising experiences in integrated wood cutting, integrated harvesting is likely to continue to increase in both first and later thinnings in Finland.



Total removals (pulpwood and energy wood) by time-study stand and cutting method tested:
I) Integrated cutting,
II) Separate pulpwood cutting by applying multiple-tree handling (MTH), and
III) Separate pulpwood cutting based on single-tree (ST) processing.



Relative cutting productivity by time-study stand and cutting method tested. Productivity level of 100 (blue bars) = at Loppi the cutting productivity in Separate pulpwood cutting based on single-tree (ST) cutting, and at Kontiomäki in Separate pulpwood cutting by applying multiple-tree handling (MTH).



The length distributions of bucked pulpwood poles by tested cutting method at Loppi.

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