

Track #1 - Published Abstract

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Trends and perspectives of European forest technology

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This presentation offers an overview of the trends in European forest technology, and some examples of promising developments. The scope of the review includes harvesting operations and road transports, and pays special attention to the biomass sector, which is a new driver of technology development. Especially in northern Europe there is a trend towards more cost-efficient machines, which in many cases means larger machines. At the same time there is a clear demand to avoid negative impacts to both the ground and remaining stands that necessitates better planning and decision support systems as well as more environ-gentle machines. Hence, an increase in the number of axles or the adoption of tracked solutions can be observed. Originating from a similar concern with increased cost-efficiency and reduced soil impact, winch-assist solutions have become very popular in central Europe, and are offered by all main producers of ground-based forest technology. The authors will produce updated information about the main trends in European yarding technology, including the new self-propelled carriages on tracks, automated yarder management, integrated cable-based operations and new electric carriages with power recycling. Fuel efficiency is another important topic and the development of diesel-hybrid forest machines has now been extended to chippers and yarders, and may soon become widespread. Operation management and product tracking are also developing rapidly: the large amount of data collected by the machines are used to track production, and to benchmark operations, directing any potential improvement measure. Applications where machine data is used to provide improved forecasts of assortment yield from stands similar to harvested ones is under development.

In biomass operations, the need for cost efficiency leads to increasing machine size and road mobility, together with a higher sophistication in setting adjustments that allows quick adaptation of machine work mode to the job at hand. In many cases, biomass contractors are moving towards vertical integration, in order to capture a larger share of the added value generated in the supply chain.

There is a general trend in Nordic-Baltic towards larger trucks where road conditions permits their use, e.g. gross vehicle weight has increased from 60 tonnes to 74 tonnes in Sweden and to 76 tonnes in Finland. Furthermore, there is an increased use of logistic decision support systems, both to find the best routes and to optimize the wood supply.