
EFFECTS OF CTIS ON FUEL CONSUMPTION

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Abstract:

Central Tire Inflation Systems (CTIS) enable the driver to vary the tire pressure depending on aspects such as vehicle speed, ground structure or loading condition. Results of research projects in Sweden and North America show a number of ergonomical, ecological and economical benefits caused by adjusted tire pressure on timber-haulage vehicles. Various studies prove decreasing fuel consumption, tire damage and maintenance needs of roundwood haulage rigs equipped with CTI-Systems. The contact area of the tires and the traction of the vehicles on forest roads increase, thus damages on forest roads decrease and the weather depending traffic ability is longer. These potential benefits are predictable in Germany, but experiences made in other countries are not conferrable one-to-one to transport conditions in Germany. The objective of the joint research project "CTI-Holz" is to identify the potential benefits of an adjustable tire pressure on logging trucks in Germany and to refine the CTIS-technology for a better adaptation to the particular requirements of timber transports. Measurements on special test routes showed considerable effects of an adjusted tire inflation pressure on the fuel consumption. Especially on soft surfaces like sand consumption of diesel fuel decreased with reduced tire inflation pressure. This was observed both for the loaded and for the empty truck.

Keywords: timber logistics, Central Tire Inflation System, logging trucks, fuel consumption

Remark: Full paper has not been submitted.