

Monitoring Fuel Wood Supply with Fleet Manager

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Abstract:

Job management within fuel wood supply from road side storages to costumers with machine activity based controlling offers a new way to increase efficiency. Truck mounted chippers and trailer-trucks for transport have to be scheduled without any delay in order to make profit. In large part process data along the whole fuel wood supply chain are gained with extensive time studies for specific work steps. Although time studies can detect details within production of fuel wood, they can only describe certain time windows. Long-term data recording the whole year around could also cover seasonal and short time effects. This study aims to analyze and monitor chipping and transport processes of forest fuels semi-automated with a focus on time and fuel consumption. Data recording was carried out with common fleet management equipment for transport over a period of more than 14 months. Large data sets were gathered automated as good as possible and with less additional effort by drivers and operators. Vehicle data including GPS data were recorded and sent with an interval of one minute. Data management was carried out on a preconfigured database containing already defined reports running at the institute. Assignment of work steps was implemented with SQL-routines using the raw data based on machine activities in combination with GPS. More than 240 loads were analyzed concerning chipping and transport activities with a focus on fuel consumption and time needed and traffic ability. Average distance between chippings site and plant was close to 54 kilometers. Fuel consumption reached 50 liters/100 km for transport. Chipping unit reached a productivity of 12.8 odt/PSH15 with a fuel consumption of 58 liters per operating hour.

Keywords: logistic, fleet manager, supply chain, fuel wood