

## Using of Agricultural Tractors for Harvesting Operations in Turkish Forestry

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### **Abstract:**

*Worldwide, agricultural tractors have been used in various forestry operations such as extraction, loading, transportation, road construction, site preparation, and so on. The tractors having high horsepower to be able to run in difficult conditions and low power in also light conditions could be used with different attachments for miscellaneous forest harvesting activities. In this study, it was introduced the various usage forms of agricultural tractors used in timber skidding, firewood extraction, cable logging, and timber loading. The objective of the study was to describe the tractors types utilized in harvesting, to define the working techniques with tractors, to advertise the attachments mounted to the tractors, and to inform about production rate and unit cost. The field observations were carried out to obtain information about five type agricultural tractors performance for pine tree logging and loading in the South of Turkey. In this concept, it was determined that agricultural tractors with low capacity and new model could be successfully used in ground based skidding with chain for long length logs in sloping and smooth surface terrain condition, and in also extraction with carrier box mounted to front and end of a tractor for firewood. A medium capacity agricultural tractor with winch system was used in cable logging of whole stem, as well. Two different models were driven as loader with hydraulic grapple loader for the loading short and normal length logs to trucks. This indicated that the agricultural tractors could be utilized in forestry harvesting operations in partial time except for agricultural operations time, in reasonable manner.*

**Keywords:** forest roads, road quality analysis, criteria and indicators for quality, road assessment, Turkey