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Morphological analysis of chainsaws – useful decision making tool

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Aim of this paper is to conduct morphological analysis of chainsaws, which are most commonly used in Croatian forestry (Stihl, Husqvarna, Jonsred), and to compare results with results obtained from morphological analysis of chainsaws performed by Poršinsky et al. (2008). Morphological analysis is used to determine current status, technical characteristic but also historical and possible course of development of chainsaws as tools for felling and processing of wood. The results of the research can be used to help forestry experts and private contractors in forestry when choosing a new chainsaw.

Research is conducted on the basis of data collected about chainsaws. Data was taken from web pages, catalogs of producers and importers of chainsaws. Twelve basic morphological features were chosen for 24 types of chainsaws: mass, engine power, cylinder volume, smallest and longest bar length, vibrations on front and on back handle, noise level (Lpa), noise power (Lwa), volume of fuel tank, volume of lubricant tank, price of chainsaw.

Analysis covered following morphological characteristic of chainsaws: technical, technological, ergonomic, economic characteristic. Mass is most significant parameter which defines chainsaws. Therefore dependence of technical, technological, ergonomic, economic characteristic of chainsaws is expressed in relation of chainsaw mass. Comparison of the results with results of morphological analysis performed in 2008, revealed changes in dependence of certain parameters. Morphological analysis proved to be a useful tool in the evaluation of chainsaws characteristic and therefore can help forestry experts and private contractors with their choosing.