

## عنوان مقاله:

Above-ground Biomass and Fuel Value Index of Selected Tree Species for Fuelwood Production in Ethiopia

## محل انتشار:

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## نویسندگان:

.G. Morketo - Forest Products Innovation Research and Training Center

M. Fekadu - Central Ethiopia Environment and Forest Research Center, Ethiopian Environment and Forest  
.Research Institute, Addis Ababa, Ethiopia

.T. Dajene - Ethiopian Environment and Forest Research Institute, Addis Ababa, Ethiopia

## خلاصه مقاله:

The present study investigated appropriate tree species for biomass energy utilization by determining trees' dry biomass and fuel value index, taking into account that developing countries rely heavily on fuelwood for energy consumption. In Ethiopia, biomass currently meets more than ۸۹.۵% of total energy consumption. Despite this reliance on biomass, there is a scarcity of fuelwood as well as data on dry biomass potential and fuel value indices of tree species utilized in various parts of the country. This study was done on the selection of trees for fuelwood purposes based on their dry biomass potential and fuel quality characteristics. Five highly performed Eucalyptus tree species were selected and aboveground biomass was measured using the destructive approach, whereas the fuel value index was computed using the effective method with four parameters (Calorific Value, Wood density, Ash content and Moisture content). These parameters were determined following the American Society for Testing and Materials method. Finally, aboveground biomass and carbon content varied from ۱۳.۹۶kg to ۸۷.۴۷kg and ۶.۰۳kg to ۳۷.۸۶ kg Tree<sup>-۱</sup>, respectively. The biomass and carbon content of E. globulus and E. viminalis were both high. The maximum fuel value index was ۲۷۶.۳۴ for E. saligna. The computed fuel characteristics were statistically varied among tree species at ( $P \leq 0.0001$ ). Based on the tree fuel characteristics findings, E. globulus, E. viminalis, and E. saligna were identified as the best fuelwood species and were suggested for future plantations.

## کلمات کلیدی:

Ash Content, Calorific Value, Carbon Content, Moisture content, Wood Density

## لینک ثابت مقاله در پایگاه سیویلیکا:

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