Firewood value assessment: A comparison on local preference and wood constituent properties of species from a trekking corridor, west Sikkim, India

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Abstract

Local people's preference scores for firewood species were studied through pair-wise ranking tools of Participatory Rural Appraisal technique from Yuksam-Dzongri trekking trail, Sikkim, India. A wide variety of plant species used as firewood was enlisted. These woody tree species with potential firewood use value were analysed for their Firewood Value Index (FVI) considering energy value, density, moisture content and ash content. The local people's preference scores and the constituent properties were then compared with 17 widely used firewood species using Pearson correlation and multiple regressions. Quercus spp. and Rhododendron spp. were the most desirable firewood according to their high ranks in local preference scores as well as FVI compared to other species. Local people's preference ranking energy and ash contents were vital constituents for determination of firewood quality. Local knowledge and scientific assessment closely matched to each other emphasizing that highly preferred species by the communities invariably showed better firewood value. However, there were some disparities when people's perception in relation to availability of species and convenience was considered. The local knowledge could be a good tool for species selection in forestry programmes.