Predictive biomass equations of chir pine silvipasture ecosystem of Himalayas, India

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Abstract

In the present study, the above-ground herbaceous biomass was examined, and species-specific and multispecies power-law allometric equations for six dominant grass species of chir pine silvipasture ecosystem were developed, considering basal area and number of tillers as a predictor. The mean above ground herbaceous biomass and carbon content were estimated to be 3.02 ± 0.16 Mg ha^{-1} and 1.36 ± 0.7 Mg C ha^{-1}, respectively. All allometric relationships fitted to similar power-law models, with the basal area as the most influential predictor for the majority of grass species, however, the number of tillers proved to be a good predictor for above ground biomass of *Panicum maximum*. Although the fit improved when the number of tillers and basal area were combined in the model. Species-specific equations gave much better fits than multispecies allometric equations. A validation test indicated that these models made a precise prediction of grass biomass of the region.