GENERAL INFORMATION

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GENERAL INFORMATION

Different European Biomass Expansion Factors (BEFs) were compared for the inventory-based quantification of total aboveground and belowground biomass in forests. Therefore a qualitative analysis is performed on the biomass results obtained through the BEF approach and those from experimentally established allometric relations based on destructively sampled and fully excavated trees. Total organic carbon (OC) stock in aboveground and belowground living biomass of Flemish forests amounts to 12 Mt on average, with a significantly larger OC stock per hectare in deciduous forests compared to coniferous or mixed forest types. Total forest biomass seems to be fairly well approximated by a multiplication of the standing stock with either one of the applied BEFs. However an indication of the volume and age class for which the BEFs are established and a refined diameter-volume-biomass relation for oak trees in Europe, are required to gain more accurate results.

MATERIALS & METHODS

study area	5n (scientific zone)
time period	1997 + ??
goal	Compare the usefulness of reported BEFs from European literature and allometric relations to calculate total aboveground and belowground carbon stock in living biomass for a typical Flemish deciduous forest stand. A forest inventory-based carbon quantification for the aboveground and below-ground living biomass of Flemish forest ecosystems.
set-up	
data collection	biomass data: felling of 12 oaks, 6 beeches, 6 ashes in 1997 (Janssens_etal_1998_rep), data on stem volume, cbh, wood density, total dry weight of stems and branches, coarse root biomass of two of the oak trees (VandeWalle_etal_2001_AFS) C conversion roots of the other species: literature BEFs: European literature
remarks	Aelmoeseneie forest used as a test case.

RESULTS

Using the reported general BEFs is the most practical way to assess the carbon stock in the Flemish forests based on forest inventory data. No differences were found between the 5 BEFs tested.

The total organic carbon stock in aboveground and belowground living biomass of Flemish forests was estimated to be 12 Mt. The estimated organic carbon content was significantly higher in broadleaved forests than in coniferous forests.