

3.131 Methyl chloride emissions from Bornean tropical tree species .

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Abstract:

Methyl chloride (CH_3Cl), a volatile organic compound emitted primarily from natural sources, is the major carrier of chlorine to the stratosphere, where it contributes to chlorine-induced destruction of ozone. Among a variety of natural sources, tropical forest ecosystems are considered the single largest source of CH_3Cl . Previous studies reported that CH_3Cl emissions by tropical plants are species-dependent and tens of tropical plant species, mainly dipterocarp trees, have been identified as CH_3Cl emitters. However, little is known about what controls the emission rates. In this study, we screened ~15 species of trees for CH_3Cl emission by using a canopy crane to gain access to the canopy in a lowland tropical rainforest at Lambir Hills National Park, Malaysian Borneo. We analyze the leaf-level measurements to investigate the intra- and inter species variability in CH_3Cl emission and discuss possible drivers of the emission rates.