

Soil respiration of *Larix gmelinii* forests in continuous permafrost region of central Siberia

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Soil respiration is an important component process of carbon cycle in terrestrial ecosystems. The area of larch forests in the continuous permafrost zone of Siberia is much larger than the area of boreal forests in the other region, where studies of soil respiration have been numerous. On the other hand, the studies of soil respiration have been few in Siberia. Therefore, with the aim of characterizing and comparing the soil respiration with other boreal forests, the rate of soil respiration was measured a closed-chamber technique in a *Larix gmelinii* forest on three types of forest floor vegetation: in mosaic patches of *Cladina stellaris*, *Pleurozium schreberi*, and *Aulacomnium palustre* in two growing season of 2005 to 2006. The soil respiration rate was the highest in July 2005 among the measurements in all floors. The mean values and their standard deviation ($\text{mg C m}^{-2} \text{ hr}^{-1}$) were the following: *Pleurozium* (60 ± 43), *Cladina* (47 ± 31), *Aulacomnium* (38 ± 28). The soil respiration was positively correlated with soil temperature ($r=0.75$) and negatively correlated with soil moisture ($r=-0.59$). The lowest soil respiration in the *Aulacomnium* patch was due to low soil temperature and high soil moisture. The soil respiration was smaller than the previously reported values for boreal forests due to the existence of permafrost and difference in vegetation type.