

Methane Flux of Dominant Species of Alpine Meadow on the Qinghai – Tibetan Plateau

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Abstract: To determine the methane flux of dominant species of alpine meadow, we had done a indoor cultivation of 15 kinds of dominant species by using closed chamber – GC method from may to august in 2009, and did a comparative study on cross-section treatment and longitudinal treatment to find the effect factors of plants methane emission rate. The result shows that 8 species of them emitted methane, the other 7 absorbed methane, 7 out of 11 herb species emitted methane and 3 out of 5 shrub species absorbed methane; Methane flux rate remarkably influenced by temperature ($p < 0.05$), Q10 of these methane emission plants was 1.75, then Q10 of the absorption plants was 1.44; methane emission rate increased by 10.9% ~ 244.06% after the cross-section treatment and plants methane emission rate increased by 27.04% ~ 37.44% to longitudinal treatment, all the shrub species methane flux decline after cross-section and longitudinal treatment. The methane emission rate to longitudinal treatment was significantly higher than the other two treatments ($p < 0.05$).

Key words: Methane flux; alpine meadow; dominant species; greenhouse gases

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