

扎龙芦苇湿地生长季的甲烷排放通量

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Methane emission flux of Zhalong *Phragmites australis* wetlands in growth season.HUANG Pu-yi¹, YU Hong-xian¹, CHAI Long-hui¹, CHAI Fang-ying², ZHANG Wan-feng³

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摘要

为研究高寒地区天然淡水芦苇湿地的甲烷排放特征, 采用静态箱-气相色谱法, 测定了扎龙不同水位芦苇湿地生长季的甲烷排放通量. 结果表明: 观测期内, 扎龙芦苇湿地甲烷排放通量平均为 $7.67 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$ ($-21.18 \sim 46.15 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$), 其中深水区(平均水深100 cm)和浅水区(平均水深25 cm)的平均甲烷排放通量分别为 5.81 和 $9.52 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$, 排放峰值分别出现在8月和7月, 最低值均出现在10月. 深水区夏季(6—7月)的甲烷排放通量显著低于浅水区, 而春(5月)、秋(8—10月)季节显著高于浅水区. 生长季甲烷排放通量的变化为夏季>秋季>春季; 昼夜排放量为12:00和14:00最高, 0:00最低. 温度和水位是高寒地区淡水芦苇湿地甲烷排放通量变化的主要影响因子.

关键词: 甲烷 排放通量 芦苇 扎龙湿地

Abstract:

Static chamber/gas chromatogram method was adopted to measure the methane emission flux of Zhalong *Phragmites australis* wetlands with different water levels in a growth season from May to October, 2009, aimed to understand the methane emission pattern in natural freshwater *P. australis* wetland in frigid region. During the observation period, the average methane emission flux of test wetlands ranged from -21.18 to $46.15 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$, with a mean of $7.67 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$. In deep water zone (average water level 100 cm) and shallow water zone (average water level 25 cm), the average methane emission flux was 5.81 and $9.52 \text{ mg} \cdot \text{m}^{-2} \cdot \text{h}^{-1}$, with a peak in August and July, respectively, and the minimum in October. In summer (from June to July), the methane emission flux in deep water zone was significantly lower than that in shallow water zone; while in spring (May) and autumn (from August to October), a reversed trend was observed. The methane emission flux had a seasonal pattern of summer > autumn > spring, and a diurnal pattern of being the highest at 12:00 and 14:00 and the lowest at 0:00. Temperature and water level were the major factors affecting the methane emission flux in freshwater *P. australis* wetlands in frigid region.

Key words: methane emission flux *Phragmites australis* Zhalong wetland

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- [1] 李愈哲, 樊江文, 尹昕, 杨恩毅, 魏维, 田志慧, 达良俊. 入侵植物加拿大一枝黄花与乡土植物芦苇的相互化感作用[J]. 应用生态学报, 2011, 22(05): 1373-1380.

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