

琉球大学学術リポジトリ

Litterfall, carbon and nitrogen inputs of mangrove
kandelia obovata stands in Manko Wetland,
Okinawa Island

メタデータ	言語: 出版者: 琉球大学21世紀COEプログラム 公開日: 2008-03-09 キーワード (Ja): キーワード (En): 作成者: 萩原, 秋男 メールアドレス: 所属:
URL	http://hdl.handle.net/20.500.12000/4976

**PE-9 Litterfall, carbon and nitrogen inputs of mangrove
Kandelia obovata stands in Manko Wetland, Okinawa Island**

Kangkuso Analuddin¹, [○] Sahadev Sharma¹, Rempei Suwa² and Akio Hagihara²

¹ Graduate School of Engineering and Science, University of the Ryukyus, Okinawa

² Faculty of Science, University of the Ryukyus, Okinawa

Litterfall was recorded at monthly intervals from April 2005 to January 2008 in a belt-transect (5 m × 125 m) of *Kandelia obovata* (S., L.) Yong stands using litter traps. The content of each trap was collected into bag, carried to the laboratory and sorted into leaves, woods/branches, propagules, stipules and flower parts, and they were dried for 2 days at 80°C and then weighed. The leaf litterfall showed a bimodal seasonal pattern: the main litterfall peak occurred in July and the lesser one was in February, which peaks characterized the seasonal fluctuation of total litterfall. The stipule litterfall was the highest in summer season (July), while the lowest in winter (February). The stipule litterfall, i.e. an indicator of new leaf flush, was positively correlated to leaf litterfall ($r = 0.556$, $p = 6.53 \times 10^{-5}$), which suggests that the leaf litterfall was followed by production of new leaves. On the contrary, the stipule litterfall was negatively correlated with flower litterfall ($r = -0.705$, $p = 1.14 \times 10^{-8}$) and propagule litterfall ($r = -0.490$, $p = 2.34 \times 10^{-4}$), which indicates that new leaf flush decreased with increasing flower and propagule production. The highest propagule litterfall was in spring (April and May), while there was no propagule litterfall in summer. Spearman's rank correlation coefficient r_s of leaf, stipule and branch litterfalls have been not changed significantly between years. It suggests that the seasonal trends of litterfalls were not different between years. Mean annual total litterfalls of the first year (April 2005 – March 2006) and the second year (April 2006 – March 2007) were respectively estimated as 935.5 and 1092.1 g (dw) m⁻² yr⁻¹, of which leaf litterfall comprised 64.2 and 54.4%, respectively. Carbon and nitrogen contents in leaf litterfall were different among seasons. The highest carbon content was in winter, while the lowest in spring. On the other hand, the highest nitrogen content was in autumn, while the lowest in winter. However, the C: N ratio was the highest in winter, while it was the lowest in autumn. Annual amounts of total carbon and nitrogen from leaf litterfall were 281 and 3.96 g m⁻² yr⁻¹, respectively.