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メタデータ	言語: 出版者: 琉球大学21世紀プログラム 公開日: 2007-06-26 キーワード (Ja): キーワード (En): <i>Kandelia obovata</i> , growth pattern, biomass, photosynthesis 作成者: Suwa, Rempei, Khan, M. Nabiul, I., Analuddin, Kangkuso, Hagihara, Akio メールアドレス: 所属:
URL	http://hdl.handle.net/20.500.12000/671

**PE-7 Structure and productivity along tree height gradient in a mangrove
Kandelia obovata forest at Manko Wetland, Okinawa Island**

Rempei Suwa¹, M. Nabiul I. Khan², Kangkuso Analuddin¹ and Akio Hagihara³

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

²Forestry and Wood Technology Discipline, Khulna University, Bangladesh

³Faculty of Science, University of the Ryukyus, Japan

Structure and productivity in a *Kandelia obovata* forest at Manko Wetland, Okinawa Island, were investigated along a tree height gradient. Tree height H decreased sharply from ca. 5 m to ca. 1.5 m toward the fringe according to an increase of yearly waterlogging period. The decreasing tendency of stature was attributed to a decrease of the asymptote of H in the $D_{0.1}$ (stem diameter at a height of one-tenth of tree height)- H relationship. Drastically high annual increment of $D_{0.1}$ resulted in the differences of the $D_{0.1}$ - H relationship. Common allometric equations for estimating phytomasses of aboveground parts and branches were successfully established among the morphological variations, while allometric equations for estimating phytomasses of stems and leaves were significantly segregated between high and low stature populations. Some previous studies focusing on low stature stands in other mangrove forests, found that the low stature stands showed lower productivity than the high stature stands. In the present study, however, biomass increment of the low stature stands was equivalent to that of the high stature stands. Moreover, light saturated net photosynthesis and leaf nitrogen content were higher in the low stature stands than in the high stature stands. These results indicated that *K. candel* is a high waterlogging tolerant species.

Keywords: *Kandelia obovata*, growth pattern, biomass, photosynthesis