

## Short Description

### **BEST MANAGEMENT PRACTICES FOR OIL PALM CULTIVATION ON PEAT: GROUND WATER-TABLE MAINTENANCE IN RELATION TO PEAT SUBSIDENCE AND ESTIMATION OF CARBON DIOXIDE EMISSIONS AT SESSANG, SARAWAK**

The study on peat subsidence was carried out in an area of shallow and deep peat at the MPOB Research Station in Sessang, Sarawak. Upon completion of the latest phase of peat development for oil palm planting in 2001, water management was improved to maintain the ground water-table at 30 to 50 cm below the soil surface, over the whole plantation. Data on peat subsidence and oil palm yields were collected from 10 blocks of oil palm of different ages planted on peat soils of different depths, ranging from shallow to deep peat. A regression equation was established with subsidence data as a dependent variable, while ground water-table and time with quadratic effects were independent variables. Two separate equations were developed for the different depths of peats. The study shows that the subsidence rate was very much related to the age of peat development, i.e. the number of years after oil palm was planted. The subsidence rate over the years declined and was stabilised after 15 years of peat development. A relationship between the bulk density of the peat and the age of peat development was also established. The carbon dioxide emission was estimated, using the method based on the depth of the ground water-table. From the current study, it was found that maintaining a high ground water-table was better for oil palm agronomics, while at the same time, it reduced the decomposition and mineralisation rates of peat, and hence prevented excessive CO<sub>2</sub> emission.

This short description describes the article by Hasnol Othman; Ahmad Tarmizi Mohammed; FaraWahida Mohamad Darus; Mohd Haniff Harun and Muhammad Pilus Zambri. (2011). **Best management practices for oil palm cultivation on peat : ground water – table maintenance in relation to peat subsidence and estimation of CO<sub>2</sub> emissions at Sessang,Sarawak.** *J.Oil Palm Res.*23(2): 1078 – 1086.

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