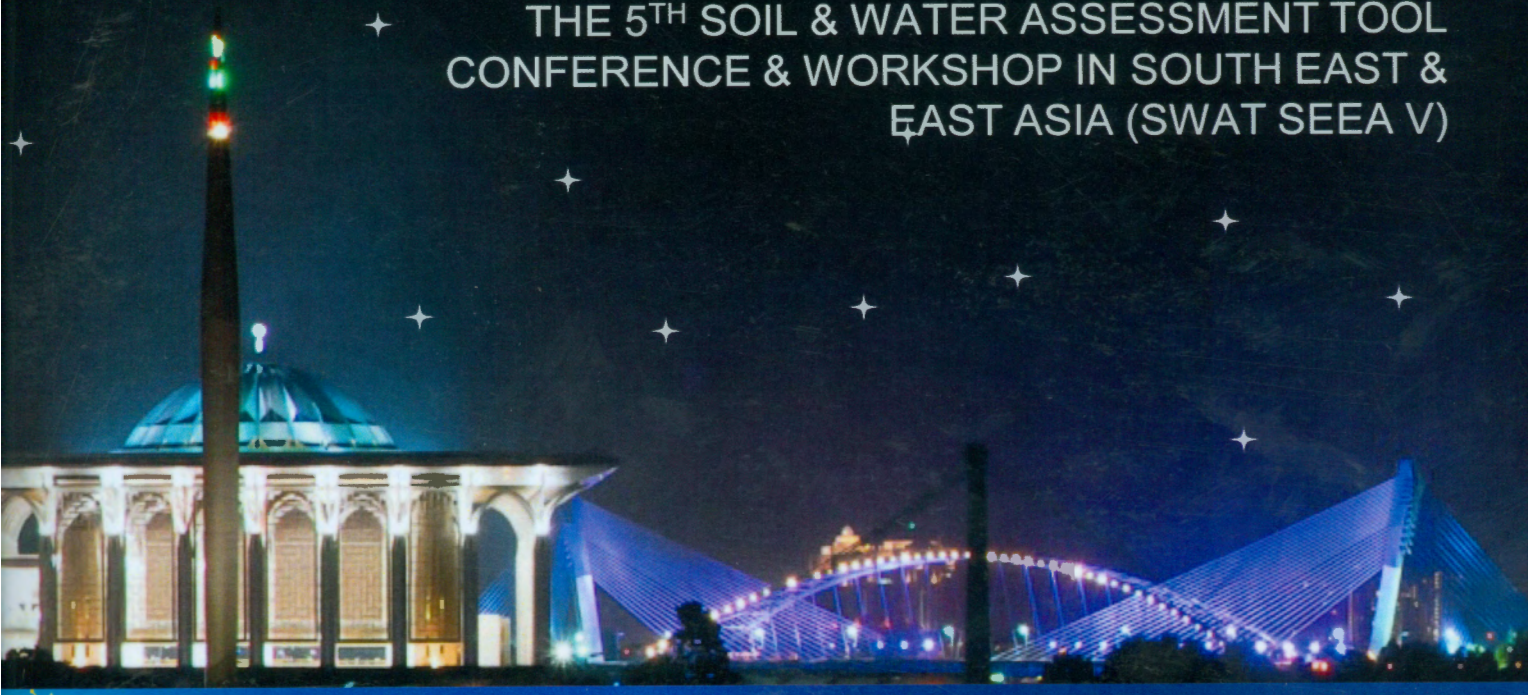
5th SWAT SEEA 2017

THE 5TH SOIL & WATER ASSESSMENT TOOL CONFERENCE & WORKSHOP IN SOUTH EAST & EAST ASIA (SWAT SEEA V)



23 - 26 OCTOBER 2017
HOTEL BANGI - PUTRAJAYA
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PROGRAMME & ABSTRACTS BOOK

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5TH SWAT

(SOIL & WATER ASSESSMENT TOOLS)

CONFERENCE & WORKSHOP in SOUTH EAST & EAST ASIA

(SWAT SEEA V)

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Paper 8

Title

Leaching Losses of Nutrients from Tropical Peat Soil under Different Water Table Depths.

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Abstract

Studies on nutrients leaching losses of tropical peat soil is limited especially in relation to the water table depths. Tropical peat soil is formed as the results of organic matter accumulation in a situation where the organic matter production is higher than the rate of its decomposition under anaerobic or extreme acidic condition and low temperature (Drissen, 2001). Water table depth, pH, seasonal changes, degree of decomposition and nutrients adsorption capacity affects the amount of nutrients transported in tropical peat soil (Andriesse, 1988). Nutrients concentration differs under different water table depth and high rainfall subject them to leaching (Zaharah et al., 2004). Water table is one the most important factors affecting crop growth and yield crop grown on peat soils (Lim et al., 2012) as the it should neither be too high nor too low otherwise crop growth and development is impeded (Yew et al., 2010). High water table of peat soils also hinders the use of heavy-duty tillage implement (Lim and Wahyudi, 2010).

Nutrients are essential for crop production. All plants require nutrients to grow and a significant portion of these nutrients are removed and exported when the crop is harvested. Losses of plant nutrients through leaching have been investigated on various soils. Potassium is the element which is more susceptible to leaching under oil palm cultivation because of the weak adsorption of potassium ions to soil particles (Corley and Tinker 2003). Chang and Zakaria (1986) found K leaching losses under young oil palm to be less than 8 kg ha^{-1} $year^{-1}$. This objective of this determine the effect of different water table of tropical peat soils on nutrients leaching losses.