INFLUENCE OF OIL PALM PLANTATION AGE AND HYDROLOGY ON DISSOLVED ORGANIC CARBON CONCENTRATION OF MALAYSIAN TROPICAL PEATLAND WATER RESOURCES

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Due to boom recorded globally in oil palm industries, many palm oil producing countrie like Malaysia and Indonesia converted the sizeable parts of their carbon-rich previous stable peat swamp forests to oil palm plantation. This conversion resulted in huge loss the soil carbon in dissolved and gaseous forms to atmospheric body and nearby stream This paper thus focuses on assessing the influence of oil palm plantation age a hydrological factors on dissolved organic carbon concentration in the tropical peatlan Four different plantations were considered with different years of peat swamp for conversion ranging from 2000, 2002, 2006 and 2010. The plantation tagged 2010 was f cleared in 1978 and hereby referred to as 2010/1978 in this study. Two tube wells w installed in each of the plantations for monitoring DOC concentration of groundw between September 2013 and December, 2014. The results showed positive influenc heavy storm events on DOC concentrations and that the lowest DOC concentra ranging from 18.10 mg/L to 28.60mg/L was observed at 2010/1978 plantation as aga the highest DOC concentration of range 169.2 mg/L to 250.50 mg/L at 2000 planta The results therefore justify the influence of age of plantation as 1978/2010 plant recorded the lowest DOC concentration as against the 2000 plantation recordin highest DOC concentration. It is thus recommended that oil palm cultivatio peatlands should be avoided as this practice, if not well-managed, leads to flu emission of stored soil carbon in both dissolved and gaseous forms to the surrou water resources and atmospheric body.

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