

DIVERSITY AND CARBON STOCK OF HERBACEOUS PLANTS IN NEWLY PLANTED OIL PALM AREA IN BELAGA, SARAWAK

Isa Ipor¹, Sharifah Mazenah Wan Yusuf¹, Idris A S², Cheksum Tawan¹,
Maizatul S M² and Ismail Jusoh¹

¹Department of Plant Science and Environmental Ecology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak (UNIMAS), 94300 Kota Samarahan, Sarawak, Malaysia

²Ganoderma and Diseases Research for Oil Palm (GANODROP) Unit, Malaysian Palm Oil Board (MPOB), Bangi, 43000 Kajang, Selangor, Malaysia

ABSTRACT

The survey on herbaceous plants grown was conducted in newly planted oil palm area of MPOB Research Station at Sg. Asap, Belaga, Sarawak, East Malaysia. A total of 119 herbaceous species were identified within the 100 quadrates of 1m x 1m. *Trema orientalis* was the most dominant species with the value of Summed Dominance Ratio (SDR) 9.27 and then followed by *Scleria sumatrensis* SDR 7.50, *Mikania micrantha* SDR 6.85, *Tetrastigma indica* SDR 5.25 and *Paspalum conjugatum* SDR 5.24. The least species grown in surveyed area are *Euodia malayana*, *Alocasia longiloba* and *Trichosanthes wallichiana* with SDR 0.06 each. The estimated above ground biomass of the area is 7.163.58 t/ha which the highest contribution is from *Trema orientalis* followed by *Scleria sumatrensis* and *Musa acuminata* with 8844g, 6122g and 6087g respectively. The estimation of carbon stock for the entire area was 3.58 t/ha.

Key words: herbaceous, biomass, diversity, carbon stock.

INTRODUCTION

Weeds were the major component in the oil palm plantation management. Its population is mainly mixture of grasses, sedges, and broad-leaved plants. The composition of weeds is influence by the shade provided by the palm canopy, and the grass species tend to dominate the area as the palm getting bigger (Wan Mohamed *et. al.*, 1987). Weeds control in the oil palm plantation contributes 75% of total cost of pest management. The methods involved are cultural, mechanical, chemical and integrated approach such as production system of using livestock to control or managed the weeds in oil palm plantation.

The roles of weeds (herbaceous plant) are yet to be discovered. The weeds in oil palm plantation, such as *Stenochloena palustris* can be used to treat the soil erosion especially on the sloppy part of the soil. Some weeds species can be used to treat the soil fertility. The weeds also can be used to fix the nitrogen. It is clearly understood that weeds in oil palm plantation effectively sustain the plant diversity in that area. The herbaceous plants such as weeds are believed to be carbon sequester. It enhanced of reduction the carbon dioxide content in the atmosphere. The carbon dioxide gas is the gas which caused the greenhouse effect. The carbon contain in atmosphere will be sequestered by herbaceous plant through the photosynthesis process where the carbon is convert into oxygen and carbohydrates. Sequestration of carbon removes the carbon in atmosphere into long lived carbon pools. The present study was to determine herbaceous (weed) diversity and carbon stock in newly planted oil palm plantation at Sg. Asap, Belaga, Sarawak.