EMPIRICAL ASSESSMENT OF TEMPERATURE, RAINFALL AND RELATIVE HUMIDITY IMPACT ON THE POPULATION OF *COELAENOMENODERA ELAEIDIS* (COLEOPTERA – CHRYSOMELIDAE), A PEST OF THE OIL PALM IN NIGERIA

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ABSTRACT

The leaf miner (*Coelaenomenodera elaeidis*) is the most serious pest of the oil palm. It breaks out in epidemic proportions periodically, resulting in severe leaf defoliation and consequently low fresh fruit bunch (ffb) yield. This paper reports a study attempting to relate the abundance of the pest to climate variability. The leaf miner was sampled during 2009-2010 in oil palm fields and records from previous surveys from 1976-1980 were utilized. The study analyses temperature, rainfall and relative humidity between 1961 and 2010 in the main station of the Nigerian Institute for Oil Palm Research (NIFOR). Data on temperature, rainfall and relative humidity were obtained from NIFOR meteorological unit. Decadal variation in air temperature indicated increase in air temperature between 1961-1970 and 2001-2010 while variation in rainfall and relative humidity indicated a decrease. It was also observed that there was temperature increase across seasons with highest increase in the dry season, and suitable for leaf miner control. Relationship between mean weather factors (temperature, humidity and rainfall) and leaf miner insect stages (larvae, pupae and adult) between 2009 and 2010 showed significant relationship ($P \leq 0.05$). This could be attributed to relatively higher weather values and higher leaf miner population. The need for continuous monitoring has great potential for control of insect pests in oil palm growing areas.

Keywords: *Coelaenomenodera elaeidis*, Climate variability, Oil palm, Monitoring.