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Annals of Biological Research

Abstract

[Measurement of gas exchange characteristics and stomatal](#)

[conductance of Hibiscus cannabinus infected with Meloidogyne incognita](#)

Author(s): Yaghoob Tahery

Sixteen (16) varieties of kenaf of different origin were planted in green house and inoculated with known concentration of RKN. In order to determine the physiological responses of kenaf (*Hibiscus cannabinus* L.) to infection with *Meloidogyne incognita*, stomatal conductance, Vapor pressure deficit based on Leaf temp (VPDL) and internal leaf CO₂ concentration of plants were measured at interval of 30,60 and 90 days after planting. All gas exchange characteristics measured in this study were affected by *M. Incognita* race1. Intercellular CO₂ concentration and VPDL were significantly lower in infected plants than in controls; whereas stomatal conductance showed the greater value in infected plants than controls. Hence, nematode infection in this study affected gas-exchange properties of kenaf by decreasing intercellular CO₂ concentration, and VPDL and significantly increasing of stomatal conductance, compared to control plants. The different genotypes used in the experiment showed different responses of gas exchange to nematode infection. The most affected variety in term of intercellular CO₂ concentration was entry 3740, VPDL and stomatal conductance was KK60(M). The least affected variety in term of stomatal conductance was entry 4650, intercellular CO₂ concentration was G4 (Kelantan) and VPDL was G4(Terengganue). Gas exchange measured in both infected and non infected plants however did not have a consistent trend with the time of measurement.

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