



208/B

Relationship between canopy PAR distribution and conversion ratio of fresh berry weight to dry berry weight of Black pepper (*Piper nigrum* L.)

H M P Ananda Subasinghe

Central Research Station, Department of Export Agriculture, Matale.

Black pepper is a perennial climbing plant which needs a live or dead support to maintain a vertical and cylindrical canopy and also for capturing enough solar radiation. The cylindrical shape of the pepper canopy results in light penetration that is quite different from that seen in other crop species, which may in turn affect the productivity of the crop. The conversion ratio of fresh berry weight into dry weight is an important yield determining factor in pepper which also helps in selection of high yielding varieties in plant breeding research. Therefore, an investigation was carried out with the objective of examining the relationship between canopy PAR distribution and berry conversion ratio (fresh weight to dry weight) of different black pepper selections.

Five different black pepper selections of BD/WA2, BD/MN42, BD/HM35, BD/GM29 and BD/NK27 were selected for the study. PAR absorption measurement and collection of mature spikes were done in each layer and fresh and dry berry weights were recorded. The study revealed that the percentage of PAR absorption drastically decreased from the upper layers to lower layers of the pepper canopy. Black Pepper selections BD/MN 42 and BD/GM29 facilitate more PAR penetration into the canopy as compared to other selected pepper lines. The conversion ratio of fresh berry to dry berry weight significantly increased from upper layers to lower layers of pepper plant canopy while decreasing the light penetration for lower layers of the canopy. Therefore, a negative correlation between percentage of PAR absorption and conversion ratio of fresh berry to dry berry weight can be observed in the canopy of black pepper.