

BREEDING FOR RESISTANCE TO COFFEE LEAF RUST (*Hemileia vastatrix* BERKELY AND BROME) AND COFFEE BERRY DISEASE (*Colletotrichum kahawae* WALLER AND BRIDGE) IN RWANDA

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Abstract

Coffee leaf rust (CLR) and Coffee berry disease (CBD) are the most important diseases limiting coffee production in Africa. This study was undertaken to evaluate Rwandan coffee germ-plasm for resistance to CBD and CLR. Screening for resistance to CBD was done using the hypocotyl inoculation test while selection for resistance to CLR was carried out using the leaf disc inoculation method. In the pre-selection for CBD resistance, a mean grade of infection was calculated for each genotype in every replication and subjected to analysis of variance. Highly significant differences ($p < 0.001$) were observed between genotypes with regard to CBD resistance indicating the presence of genetic diversity in the germplasm collection. Commercial cultivar “BM 139” along with introductions such as Locale Bronze, Ke 5, Matinho, Blue Mountain Guatemala, CIFC 8224 and Catimor T8663 showed resistance to CBD. In addition, Catimor T8663, Selection 5A, Selection 6 and CIFC 8224 were highly resistant to CLR. Percentage infected discs, days to sporulation and days to 50% sporulation were positively correlated except for days to sporulation and the percentage sporulating disc where the correlation was low and non significant. Cultivar BM 139 may be improved for resistance to CLR by backcross breeding using one of the CLR resistant accessions such as Catimor T8663. The study indicated that CIFC 8224 and Catimor T8663 introductions are resistant to both CBD and CLR and they should be further tested for yield, cup quality and adaptability in varying environmental conditions.

Key words: Coffee, coffee berry disease, leaf rust, resistance