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Relative water content in *Coffea arabica* leaves in response to Brazilian *Pseudomonas syringae* pv. *garcae* infection

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Introduction Interruption of water flux at the infection site is recognized that a physiological mechanisms involved in the gene-to-gene response, in order to quickly limit the growth of the pathogen (Duniway, 1973; Freeman and Beattie, 2009). We conducted a study to establish whether the response of *Coffea arabica* to bacterial halo blight (Figure 1) induces a reduction in vascular flow at inoculation sites.

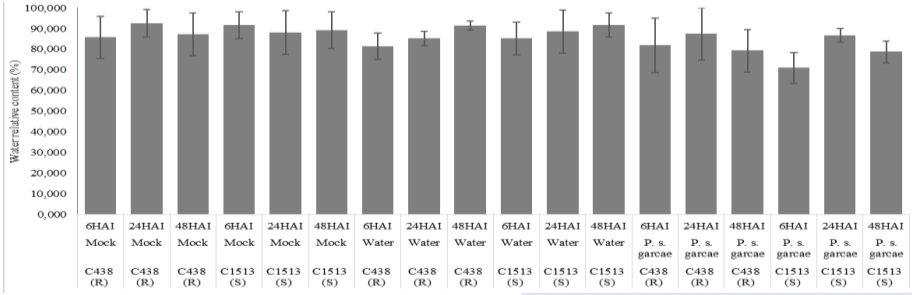

Figure 2: Relative water content in leaf discs of *Coffea arabica* under different treatments. HAI = hours after; (R) = resistant; (S) = susceptible genotype.

Materials/Methods Contrasting wild accessions from Ethiopia for resistance or susceptibility to bacterial halo blight had young leaves infiltrated with bacterial suspension of *Pseudomonas syringae* pv. *garcae*; Six, 24 and 48 hours after the infiltrations, leaf discs were cut out and the relative water content (RWC) was estimated according to the Barrs (1968) methodology.

Figure 1: Bacterial halo blight symptoms in nursery

Results/Discussion

Analyzes revealed little or no relationship between bacterial infection and RWC. If, the reduction of vascularization at the inoculation site may indicate the resistance response, as demonstrated by Freeman and Beattie (2009), the fact of equality between treatments vs. reaction of the genotype, may be associated with the absence of this mechanism of resistance in the interaction *C. arabica* – *P. syringae* pv. *garcae* Brazilian strain.

Conclusion/Perspectives There was no induction of HR in a coffee genotype resistant to Brazilian *P. syringae* pv. *garcae* in the period between the moment of infiltration up to 48 hours after inoculation of the pathogen. Therefore, a more efficient mechanism in relation to the occurrence of HR must be associated with the defense mechanism of coffee trees. Knowledge of the defense mechanism of *C. arabica* against the causal agent of the bacterial halo blight will be use in breeding programs that seek to incorporate the durable resistance to pathogen.

References

Barrs. 1968. Water deficits and plant growth. NewYork, Academic Press, p.235-368.

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