



Tropentag, September 9-11, 2020, virtual conference

“Food and nutrition security and its resilience
to global crises”

Architecture of Potato Roots *Solanum Tuberosum* Group Phureja in Early Stage

PEDRO ARTURO WAGNER RODRIGUEZ¹, TERESA MOSQUERA VAZQUEZ²

¹ *University National of Colombia, Faculty of Agricultural Sciences, Colombia*

² *University Nacional of Colombia, Faculty of Agricultural Sciences,*

Abstract

it is evaluated the morphological response of 5 varieties of diploid potato (*Solanum tuberosum* L. Phureja group) subjected to *in vitro* conditions was evaluated. The hypothesis proposed was based on the architecture of each of the varieties, presenting a differential response in the angle of insertion as a diagnostic character associated with tolerance to water stress. The objective of this study was to determine differences in the endogenous early response of the tolerant and non-tolerant materials to water stress previously studied in (Ariza, 2017, Moreno, 2017), for this a morphological characterisation was carried out.

The experiment was carried out in the Faculty of Agrarian Sciences of the Universidad Nacional de Colombia, Bogotá headquarters with geographic coordinates 4 ° 35'56"57 LN and 74 ° 04'51"30 LO and altitude of 2,600 meters above sea level. For this the treatments were arranged in a completely random design with three repetitions. Three varieties of *S. tuberosum* group Phureja susceptible to water deficit were evaluated: Dorada, Ocarina and Colombia and two tolerant to water stress: Violet and Milagros. They were evaluated during 4 months with an interval of 3 days to measure the variables of angle of insertion, average length of primary roots and length of secondary roots, maximum length, number of roots and number of secondary roots and perimeter area. As a result, the description of the potato root architecture of the five contrasting varieties was obtained with respect to the response to water stress in the field where no differences were found in the variables evaluated.

Keywords: Propagation invitro, root architecture, root morphology, *Solanum tuberosum*, tolerance to drought