



Exploring the genetic and phenotypic diversity within and between onion (*Allium cepa* L.) ecotypes in Morocco.

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Abstract:

Gaining insight into crop diversity, both at genetic and phenotypic level is of paramount importance for breeding onions with an enhanced yield, quality. Given the economic value of onion, the erosion of genetic diversity of autochthonous ecotypes and the climate-related problems Morocco is facing, a better understanding of the genetic diversity in combination with the expressed phenotype under various growing conditions can provide useful information for future breeding programs. Based on a total of 192 different onion (*Allium cepa* L.) plants, representing 16 ecotypes, collected from 13 different regions throughout Morocco, the onion population was characterized using ISSR markers. For the phenotypic characterization, these 16 onion ecotypes were cultivated in three different environments. Based on the ISSR marker profile there was a clear grouping of the genotypes into the 16 different ecotypes. The ISSR markers revealed 8 to 18 polymorphic bands for the markers UBC 841 and UBC 840, respectively. The PIC value varied between 0.161 and 0.368. A Linear Discriminant Analysis revealed that based on a linear combination of the markers, the ecotype can be predicted with an accuracy of 93 %. The phenotypic characterization showed that for the polar diameter and the coloration compound a* seemed to be not effected by environment parameters. A clear grouping of the plants per growing environment rather than per ecotype was seen, underscoring the impact of environment on onion phenotype. Finally, the Spearman correlation analysis revealed a significant association between the presence/absence of certain bands and the some phenotypic traits. Graphical Abstract (OR) Speaker lab Photograph/Speaker Department Photography/Speaker University Affiliation Photo.

Biography:

Amal Brahimi, 26 years old women. She is an agronomist engineer since 2016. In addition she is second year PhD student at the Moulay ismail University, Meknes Morocco. She is a mem-



ber of the 1Laboratory of vegetal Biotechnology and molecular biology. In January 2019, she has done training at the Department of Plants and Crops, Faculty of Bioscience Engineering, Ghent University, for the genetic analysis

Publication of speakers:

- Biofouling. 2018, Jul The natural plant compound carvacrol as an antimicrobial and anti-biofilm agent: mechanisms, synergies and bio-inspired anti-infective materials.
- J Ethnopharmacol. 2019 Oct Antihypertensive activity of *Petroselinum crispum* through inhibition of vascular calcium channels in rats.
- Phytotherapy of Hypertension Endocr Metab Immune Disord Drug Targets. 2020
- Beneficial Effects of Alpha-Lipoic Acid on Hypertension, Visceral Obesity, UCP-1 Expression and Oxidative Stress in Zucker Diabetic Fatty Rats Antioxidants (Basel). 2019 Dec 16.

2nd Annual Congress on Cellular Therapies, Cancer, Stem Cell and Bio-Medical Engineering, July 18, 2020, Vienna, Austria

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