

O-40 (227)**TARGETED METABOLIC PROFILING REVEALS SHIFTS IN POLYPHENOL METABOLISM IN GRAPEVINE (VITIS VINIFERA) FOLIAR PART**

Maliheh Eftekhari, Department of Horticultural Science, Tarbiat Modares University (TMU), P.O.Box 14115-336, Tehran, Iran; m.eftekhari@modares.ac.ir (Presenting author)

Dr. Abbas Yadollahi, Faculty of Agriculture, TMU, Tehran, Iran; yadollah@modares.ac.ir
Assoc. Prof. Christopher Ford, School of Agriculture Food and Wine, UA, Adelaide, Australia; christopher.ford@adelaide.edu.au

Dr. Abdolali Shojaeiyan, Faculty of Agriculture, TMU, Tehran, Iran; shojaeiyan@modares.ac.ir

Changes in polyphenol metabolism during grapevine development play a fundamental role in determining the final polyphenol composition of canes which are an important source of valuable medicinal phenolic compounds. The present work designed to find metabolic shifts during grapevine development and to offer perceptions into the timing of developmental adjustment of polyphenol metabolism. Several phenolics from polyphenol metabolism pathway were measured using high pressure liquid chromatography coupled to diode array detector and spectrophotometric assays during the development of grapevine (July to November) from seventy cultivars of field-grown vines. Principal component analysis discriminated the different phases of vine development with a characteristic phenolic profile and provided convincing evidence that the grapevine canes are not only a worthy source of important secondary metabolites but vine foliar parts can be used as an appropriate typical system to examine regulation of polyphenol metabolism in grape. The metabolites measurement showed that there was a pronounced switch in metabolism around fruit ripening time, characterized by quickly increasing or decreasing different phenolics levels in leaves or stems which could be related to transcriptional and developmental changes within the vine to achieve an integrated understanding of vine development.

Keywords: cane phenolic composition, grape development, polyphenol metabolism, secondary metabolite profiling, *Vitis vinifera*