

Development of different approaches to dispose of grape skin ripening markers

To evaluate grape maturity, oenologists dispose of soluble contents and acidity of the must and anthocyanin extractability measurements. This last test corresponds to the only appreciation of skin maturity, the other reflect pulp tissue ripening. However, during ripening, *Botrytis cinerea* sensitivity increase, resulting essentially in changes of skin structure, but actually the measurement of this parameter is far from being available. In this issue, we have initiate new characterisation of grape skin ripening. Firstly, we have established the hormonal profile of the skin, by the evolution of abscisic acid, indol acetic acid and polyamine contents. We note that the hormonal balance promotes and influences ripening process. It also appears that these hormones are concentrated in skin and it seems that abscisic acid progressively migrate from the pulp to the skin tissue during the ripening process. We completed these physiological evolutions by the determination of skin dehydration and water activity. We note that the maximal dehydration is concomitant with the maximal decrease in water activity and with the beginning if abscisic acid accumulation. These parameters gave indications about important morphological and physiological modifications occurring in the skin. These changes may reflect the capacity of grape to be infected by micro-organisms, as *Botrytis cinerea*, and the porosity of the skin. Following these approaches, differences occurring on skin morphology could be a direct consequence of its cell-wall evolution during ripening and can be considered as good markers of this development stage.