Title	Hormonal status in grape berry during ripening: importance of calcium to polyamine and abscisic acid synthesis
Authors	I. Geny, C. Deytieux, A. Darrieumerlou and B. Doneche
Citation	ISHS Acta Horticulturae 689: 234-250. 2005
Keywords	berries, ripening, growth regulator biosynthesis, calcium

Abstract

Calcium, abscisic acid and polyamines are essential elements for the growth and the development of the higher plants. Polyamines have been implicated in many physiological processes such as cell division and embryogenesis while abscisic acid may be associated with the ripening and senescence processes. Calcium is generally accepted as a mediator of many cell responses. The evolution and the distribution of calcium, abscisic acid and different categories of polyamines were analyzed in berries during ripening to better understand the role of calcium on polyamine and abscisic acid biosynthesis. The applications of calcium, abscisic acid and fusiccocin at stage BBCH 71 modified the ripening process, hormonal status and calcium levels in the grape berry at maturity. The application of calcium induced a delay in the ripening process and was accompanied by an increase in abscisic acid and a decrease in polyamines due to polyamine catabolism. The abscisic acid and fusiccocin treatments changed the calcium contents and ripening process. Our work established the relation between calcium, abscisic acid and polyamines in grape berries and the nature of the processes underlying these interactions.