

**Title** Comparative activity of peroxidase and polyphenoloxidase during fruit ripening in *Spondias citherea* Sonner, *Eryobotria Japonica* Lindl and *Syzygium malaccense* L. Merr and Perry growing under tropical conditions

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### Abstract

There are a series of biochemical changes during fruits ripening, including browning reactions and lignification of fruit tissues with the involvement of polyphenol oxidase and peroxidase enzymes, respectively. Fruits of *Spondias citherea* Sonner, *Eryobotriajaponica* Lindl and *Syzygium malaccense* L. Merr and Perry were used at different stages of maturation (green, turning, ripe and overripe) utilizing 50 grams of pulp of each state of maturation. Polyphenoloxidase and peroxidase enzymes activities were determined in crude extracts by method of Ponting and Josling (1948). Protein content determination was performed by the method of Bradford (1976). Studied fruits showed variable activity of polyphenol oxidase and peroxidase enzymes. In different stages of ripening, with exception of *Syzygium malaccense* fruits which there was no detectable activity of both enzymes. Peroxidase enzyme activity could be a biochemical indicator to determine the degree of lignification of these fruits underexploited in Venezuela. Polyphenoloxidase enzyme activity seems to be an indicator of enzymatic browning of studied fruits. *Spondias citherea* (qualitatively very lignified) and *Syzygium malaccense* (qualitatively not lignified) could serve as model systems for studying lignification processes in fruits.