

Impact of maturation on the bio-properties of Saba banana: an in vitro study
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Owing to its abundance, low cost, nutritional benefits, convenience, and wide range of applications, Saba became one of the most important banana cultivars in the Philippines in terms of production and trade. This banana variety is also gaining popularity in other countries; however, information about its functional components and the digestibility of its bioactive substances are still insufficient. This study was conducted to investigate the bio-properties of Saba banana fruit as affected by maturation. Five maturity stages were identified based on peel color index (stage 1, all green; stage 2, green with trace of yellow; stage 3, more yellow than green; stage 4, yellow with green tip; stage 5, yellow with brown flecks). Bio-properties were assessed in terms of chemical composition (starch and sugar contents, proximate composition, and pectin content) and functional components (total content of bioactive compounds, antioxidant activities, and individual phenolic compounds). The study also examined the changes undergone by these components during in vitro gastrointestinal digestion. Moreover, the potential of Saba banana peel, in comparison to the pulp, as source of health-beneficial agents were evaluated. Results showed that maturation significantly affected the bio-properties of Saba banana, particularly of the peel. With few exceptions, both peel and pulp showed high values in unripe stages and then decreased as ripening proceeded; however, data of pulp were mostly insignificant. In vitro digestibility studies revealed that the changes in the composition of the fruit accompanying maturation in combination with physical properties of the digesta (i.e. viscosity and physical structure) could account for the decreasing trend of starch hydrolysis as ripening proceeded and the slower release of bioactive components in ripe fruits than unripe counterpart. The study suggests that determination of proper maturation could ensure an optimal exploitation of biological activities which could have an effect on their absorption efficiency during digestion.