Mechanisms in controlling the enzymatic browning of strawberry nectar

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The polyphenol oxidases (PPOs) responsible for enzymatic browning have a substantial impact on strawberry nectars' colour. The action of PPOs has been inhibited using physical and chemical techniques. Chemical inhibitors can be classified as antioxidants, reducing agents, chelating agents, acidulants, or mixed-type PPO inhibitors according to how they work. Physical techniques work by heating or applying high pressure to the enzyme, denaturing it, and rendering it inactive. In this study, the effects of 5 chemical and 2 physical PPO inhibitors on strawberry nectar were examined. The remaining activity (RA) of PPO was assessed, and the total colour difference (dE) and CIE Lab parameters for lightness (*L) and redness (*a) were utilized to estimate colour changes. A Minolta colorimeter was used to measure colours. These elements led to the identification of the most efficient strategy for preventing the enzymatic browning of strawberry nectar. However, safety and cost-efficiency have been key considerations in controlling enzymatic browning. Furthermore, consumer demands call for further attention to natural sources, health advantages, and sustainability.