

**Title** Postharvest handling and storage of cured vanilla beans  
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### **Abstract**

The vanilla bean, the fruit of the climbing orchid *Vanilla planifolia*, is used for the commercial production of vanilla flavour, consisting of vanillin and other numerous flavour compounds. Development of the prized vanilla flavour in harvested green beans is dependent, however, on a curing process. Studies on the botany of vanilla beans revealed that flavour precursors are found in the bean interior, where they are secreted onto the placental region around the seeds. Hydrolytic or other degradative enzymes, which catalyse the release of the flavour precursors to flavour compounds, are localised mostly in the outer fruit wall region. This insight suggests that the objective of killing, the first curing stage carried out by hot water scalding, freezing or by other methods, is to disorganise the bean tissue such that contact is created between substrates and their respective enzymes. Sweating, a subsequent step in curing entailing high temperatures (usually around 45–65° C) and high humidity, provides conditions for enzyme-catalysed production of flavour compounds and also for non-enzymatic oxidative reactions. The objective of the final curing steps, including drying and conditioning are designed to preserve the formed flavour compounds. The postharvest handling of cured vanilla beans is a continuation of the curing process, aimed at preserving quality attributes achieved in the production and curing of vanilla beans. Temperature, humidity, gas composition and type of packaging are some important factors that determine bean quality in storage. Further understanding on the botany, curing and postharvest handling of the vanilla bean may render a full flavour complex and, subsequently, significant economic gains.