Biological Treatment of Maintaining Bio-Quality of Allium sativum by Storing with Garcinia quaesita

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Storing garlic (Allium sativum) with garcinia (Garcinia quaesita) is a traditional practice continued for centuries in Sri Lanka to preserve garlic. Therefore, the science behind this traditional practice was investigated. It was hypothesized that storing garlic with garcinia may preserve bio-quality of fresh garlic with prolonged shelf life. Garlic and garcinia were purchased from the local market. The odor, taste, color, pH, antimicrobial activity, moisture and weight of 200g of garlic stored over 30 days of storage under four treatment combinations [garlic exposed to prevailing environmental conditions for 30 days (T1), garlic with 300g of dried garcinia in a closed clay pot (T2), garlic stored in a closed clay pot without garcinia (T3), garlic with 300g of dried garcinia in a closed plastic pot (T4)] were evaluated against fresh garlic that was used as the control. According to the sensory evaluation, odor, interior color and taste of garlic stored with garcinia (T2 & T4) were similar to that of fresh garlic while they were deteriorated in garlic exposed to ambient conditions. Higher acidity and antifungal properties were observed in garlic stored with garcinia than that of fresh garlic. The weight loss was minimal in garlic stored with garcinia (6%-7%) comparatively to those stored without garcinia (12% & 10% in T1 & T3, respectively). Observing higher antimicrobial properties in garlic stored with garcinia suggests that it preserve allicin which is responsible for the antimicrobial activity. Therefore, it can be concluded that storing garlic with garcinia may preserve bio-quality of fresh garlic.

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