

Title Storage of red chili pepper under hermetically sealed or vacuum conditions for preservation of its quality and prevention of mycotoxin occurrence

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Abstract

The effect of storage under hermetically sealed or vacuum storage methods, compared with the traditional method, on important quality indices for Turkish red chili peppers (RCPs) was evaluated at a semi-commercial scale in a warehouse. One tonne lots of flaked and mechanically dried RCP of maximum moisture content $10 \pm 1\%$ were stored for six months under a low absolute pressure of 80–100 mm Hg, under sealed, airtight conditions, or under traditional storage conditions (bags stacked in barns; as a control). Basic quality parameters related to microbiological counts, amount of aflatoxins (B_1 and total), pungency properties, colour levels, organoleptic characters and moisture contents were determined before and after 6 months of storage. The experiments indicated that the best quality RCPs were obtained by vacuum storage with quite low losses in quality indicators (capsaicin, colour and aflatoxin). Hermetic storage conditions resulted in major losses of colour, while microbial growth and aflatoxin occurrence were inhibited, and the pungency of RCP was protected. The results supported the feasibility of commercial application of airtight and vacuum storage technologies for long-term storage of RCP. The sealed flexible vacuum–hermetic storage technology introduces substantial advantages over traditional storage methods in the preservation of quality characteristics such as colour, pungency, and aflatoxin of RCP for longer storage periods.