

Title Effects of storage temperature and ca conditions on postharvest quality of garlic bulbs (*Allium sativum* L.)

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Abstract

'Seosan' and 'Daeseo' garlic were stored at controlled atmosphere (CA) condition (3% O₂, 5% CO₂, -1±1°C), low temperature (-1±1°C), and room temperature (20±5°C), to investigate quality changes. Sprouting rate, weight loss, enzymatic pyruvic acid contents, and degree of greening in crushed garlic were determined during storage. Sprouting rate was higher in 'Daeseo' than in 'Seosan' garlic under the different storage conditions. In both cultivars, sprouting rate was retarded for eight months under low temperature, and was effectively suppressed in CA storage. Weight loss was the highest under room temperature condition in both cultivars as compared with the weight loss under CA and low temperature conditions. Between the cultivars, 'Daeseo' showed higher weight loss than 'Seosan'. Enzymatic pyruvic acid (EP) contents of both cultivars increased at room and low temperatures during three months storage period, and gradually decreased as the storage period increased. Under CA condition, EP contents decreased dramatically during storage period of both cultivars. Greening was observed in crushed garlic bulbs stored at low temperature for more than one month. Greening did not occur in garlic bulbs stored either in room temperature or CA storage.