

Effects of Storage Temperature and Duration on the Carbohydrate Content of Lily Bulbs¹

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Abstract

In this study, 6 different cultivars of lily were stored under 3 different low temperatures, and the changes of their soluble sugar and starch content were measured every month. The results showed that when the lily bulbs were stored at -1, 1 and 3°C, the starch content decreased when the soluble sugar content increased of different varieties with the increase of storage time. The highest soluble sugar content of the 6 cultivars of lily bulbs were stored for 2 mon, and the content was higher when stored at -1 and 1 °C. After storage, the soluble sugar content of different cultivars can be increased at least 2.78 times, even 4.34 times, while the starch content was the lowest when stored for 2 mon, decreased to 62.9-78.7%. The content of soluble sugar and starch in lily bulbs was significantly affected by different cultivars, storage temperatures and storage duration. And there were extremely significant interaction effects among all treatment factors. These results showed that when lily bulbs were stored at -1 and 1 °C for 2 mon, there would be higher soluble sugar content, and the accumulation of soluble sugar were depended on varieties.

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