

Title Influence of growing conditions on the storability and shelf life of bulb onion (*Allium cepa*) varieties

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Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords cold storage; sprouting; quality; soil types

Abstract

In Estonia bulb onions are grown mainly from set onions. Currently more varieties are available that can be grown directly from seed. To determine the most suitable varieties for growing directly from seed under Estonian conditions, the following 16 varieties were studied: 'Hyfort'F1, 'Friso'F1, 'Tasco'F1, 'Drago'F1, 'Nerato'F1, 'Blancato'F1, 'Summit'F1, 'Marco'F1, 'Copra'F1, 'Musica'F1, 'Hyred'F1, 'Albion'F1, 'Mustang'F1, 'Renate'F1, 'Jagro'F1, 'Centurion'F1. The varieties 'Hercules' F1 and 'Stuttgarter Riesen' were planted from sets as control. Field experiments were carried out in 2003 and 2004, and in both years experiments were conducted in two locations having different soil types (clay loam and sandy loam). Onion seeds were sown in two lines per furrow; the space between lines was 10cm and between furrows 65 cm. Both experimental sites were fertilized before seeding with NPK fertilizer (50 kg ha⁻¹ N; 20 kg ha⁻¹ P; 85 kg ha⁻¹ K) and during the growing period with ammonium saltpeter (60 kg ha⁻¹ N). Onions were harvested in August and September when 70-80% of plants had tops down. After harvest and curing, onion bulbs were stored at 1°C±2°C until the end of May. Decayed and sprouted bulbs were recorded monthly and from these data storage loss was calculated. After storage shelf life of 14 varieties was tested with respect to sprouting at 20-22°C. Percentage of bulbs with tested with respect to sprouting at 20-22°C. Percentage of bulbs with green visible sprouts was recorded at five day interval during 30 days. Onions grown on sandy loam soil had better storage ability than those grown on clay loam soil. There were significant differences in storage ability of onion varieties after storage when losses varied from 1.6 to 99%. White skinned onions. 'Albion'F1 and 'Blancato'F1, and the mild taste variety 'Musica'F1 had the greatest storage loss. Onions grown on sandy loam soil showed less sprouting than those grown on clay loam during the shelf life test.