Title The influence of freezing on the content of ascorbic acid in Vaccinium species berries

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Abstract

There has been an expansion of blueberry culture in Estonia where it is developing into a promising berry crop. For producers the chemical content of berries during storage is important, since the winter market is more profitable than the fresh market. That is why great interest is being given to berry quality during storage. Moreover, in Estonia there are not enough studies on the biochemical content of locally grown *Vaccinium* species. Investigations were carried out on the following species: *V. myrtillus, V. corymbosum x V. angustifolium* and *V. angustifolium*. The last two are key species currently of interest to berry growers. The analyses were done on fresh and frozen berries, after harvest (fresh berries) and 1.5, 5, 9 months of frozen storage (frozen berries). The analyses done on fresh berries showed that the content of ascorbic acid ranged between 6.2 - 14.3 mg/100 g FW. There were differences in ascorbic acid content between species. After 1.5 months of frozen storage, the content of ascorbic acid was 12.3 - 18.1 mg/100 g FW. The next set of analyses at 5 months showed a significant decrease in the content of ascorbic acid; the lowest level was 4.3 mg/100 g FW and the highest 5.7 mg/100 g FW. By 9 months the ascorbic acid content ranged from 6.8 to 8.5 mg/100 g FW. The effect of freezing on the content of ascorbic acid among blueberry species was significant. There was not a significant change in the content of dry matter which ranged from 12.6 - 20.9 % among different *Vaccinium* species.