

Abstract:

It is reported that the best method for preservation berries is frozen storage at $-20\pm 2^{\circ}\text{C}$. However, significant quality differences are present between cultivars of the same culture. An objective of this study was to determine quality changes of raspberries and blackcurrants after frozen storage, and differences between cultivars. The study was done in Dobeles HPBRS, Latvia, during 2001. 15 cultivars and 2 hybrids of raspberries and 21 cultivars of blackcurrants were analysed. Fresh and frozen berries were analysed for content and stability of ascorbic acid, anthocyanins and soluble solids. Friability was examined in frozen raspberries by 3-minutes-long shaking, proportion of undamaged berries was determined. Drip loss was determined in frozen raspberries after during 5-hour-long thawing. In total, frozen storage did not significantly changed contents of ascorbic acid, anthocyanin, and soluble solids in raspberries and blackcurrants. However, cultivars significantly differed in initial amounts of ascorbic acid, anthocyanin, and soluble solids, and response to frozen storage. The best raspberry cultivar for whole frozen berries was 'Meteor' because of low friability (61% undamaged berries), medium drip loss (24.8%), and high content (54.4 mg/100g) and stable anthocyanins. The best red raspberry cultivars for juice and puree were 'Meteor' (good content of anthocyanins and soluble solids (8.8%)), 'Sputnica' (high content of anthocyanins (65.8 mg/100g)), 86-25-46 (high content of anthocyanins (59.6 mg/100g)), and 'Brjanskij Rubin' (good content of anthocyanins (50.7 mg/100g) and soluble solids (8.4%)). Black raspberry cultivar 'Jewel' had an outstanding value for juice and puree because of extremely high anthocyanin content (328.2 mg/100g). 'Ijunskaia' and 'Chornij Kentavr' were the best blackcurrant cultivars for frozen storage with the highest anthocyanin (245.1 and 201.3 mg/100g, respectively) and ascorbic acid contents (124.57 and 107.43 mg/100g, respectively). 'Titania', 'Vernisaz', and 'Bagira' had high anthocyanin content, but only medium ascorbic acid content.