

Abstract:

For cherries sold in the local market, economic gains can be achieved by optimal scheduling of storage and sales. The opposite effect of storage on cherry prices, as a result of a prolonged season of sales, and on the decrease in fruit quality, has been studied. The study included an analysis of relationships between storage duration and changes in cherry quality, based on packinghouse data; a mathematical description of changes in quality and its incorporation into a model of storage and selling schedules. The model was developed and implemented with the help of the GAMS (Generalized Algebraic Modeling System) optimization package. The results of the model solution (scenario C) were compared with two alternative scenarios: 1) direct sale of all cherry crop (scenario A), 2) non-optimized scheduling of storage and sale (scenario B). Profit at the packinghouse gate was greater by 10% for scenario C than for A and B. The increased profit in scenario C is explained by the prolonged season of sales, when 54% of cherries were sold from the end of June to July. For the same period, only 6% and 29% of cherries were sold in scenarios A and B, respectively.