

QUALITATIVE FEATURES OF THE STORED APPLES BASED ON THE RESULTS OF SENSORIAL ANALYSIS

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Summary

We concentrated our work to the evaluating of quality one of the most important fruit variants – apples. Beside the biological and hygienic quality that actually affects the whole quality of fruit to which a consumer attributes the highest importance. the next crop during the storage. We have to say that by compiling the results of measurements and evaluations scientific sensorial analysis which in the matter of objectivity puts stress on the selection of suitable evaluating methods, the selection of appropriate evaluators and even puts stress on the own duration of on evaluation and it is able to notify clearly and exactly a different suitability of individual variants for

Key words: aples, quality, storage, sensorial analysis

Introduction

Fruit and vegetable belong to a group of agricultural products whose qualitative features can be evaluated by physical, chemical, biological and sensorial analyses in the original, storage and sensorial analyses in the original, storage and processed forms. There has been a rapid increase of an interest in an evaluating the sensorial quality in last few years. A sensorial analysis which deals with stating the organoleptic features of food mostly by human senses is an important part of a science about food, independently objective, if it operate in conditions providing optimal and reproducible results.

Material and methods

We aimed an attention in our research to noticing the qualitatives qualities of apples by using methods sensorial analysis. There was observed a dynamism of changes in analysed features during the storage of samples in model storage with modified atmosphere. There were the following climatic conditions in a storage – the temperature 0°C, relative humidity 95 %, N₂ 96 %, CO₂ 3 %, O₂ 1 % . There were classified six autumn an winter varieties of apples like: Denar, Prima, Golden Delicious, Idared, Champion and Melodie.

The apples were stored for seven months in a storage with modified atmosphere. There were also relaxed checkings of a quality of the apples that happened in a regular 7-week intervals. A sensorial quality was classified by an evaluating exam with a scale. To classify the apples there was used a descriptor for classifying the apples which watches a sensorial quality of apples in 12 features – the balance of fruits, the wholeness of fruits, the shape of fruit and their weight, freshness, the basic and the covering colour of a peel, the peel texture, the colour of a flesh, the taste and the smell.

Results and discussion

The best sensorial quality had Prima variety before storage. This variety was marked by high evaluations its exterior, textural, gustatory and smelling features. The firmness of a flesh, the smell and the storage Prima variant had a firm flesh but insubstantial while the winter variants had only firm flesh. Smell and taste of a sample were more intensive than they were in Idared and Golden Delicious variants at the beginning of the storage. There occurred intensified differences were caused by the fact ripeness that the winter varieties were riping to their consumptional and were increasing their sensorial quality, and the autumn ones were losing their optimal consumptional, ripeness so they were overripening and the quality perceived by the senses was falling. A sample Golden delicious had the best sensorial quality which improved its qualitative qualities in the features like the solidity of a flesh, the juiciness and the taste in the second classification.

Differences in a sensorial quality observed among the samples were mostly noticeable in the fruit and the fourth evaluation. Variants like Golden Delicious and Idared had the best sensorial quality in this period. The quality of the apples was at the median level 7-8 in the important descriptors of texture, smell and taste. Prima variant had the lowest sensorial quality at the end of the storage. This variant got very low evaluation in features like the colour of a flesh and its turning to brown colour, the firmness of a flesh and the taste. Even Denar variant had a very low evaluation in the feature concerning the firmness of a flesh in these variants was defined as a very little resistant towards making a flesh sore and vitreous flesh.

A sensorial quality of the apples was falling during the storage in features such as the wholeness of fruits, the freshness of fruits, the colour of a flesh and its turning to brown colour, the firmness of a flesh, the juiciness, the smell and the taste.

Winter variants Idared, Golden Delicious and Champion reached in the freshness of fruits, the colour of a flesh and its turning to brown, the firmness of a flesh, the juiciness, the smell and the taste very low or sometimes middle variability.

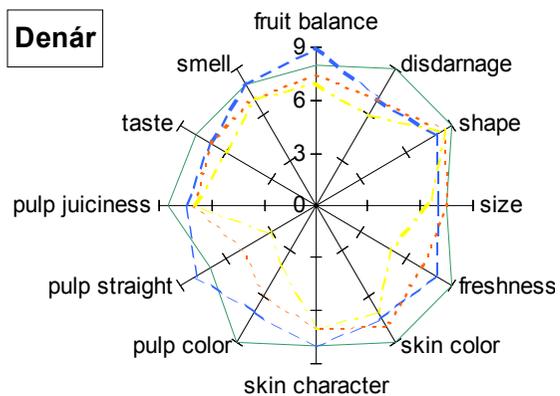
Autumn variants had the more significant differences in a quality of these features at the beginning and at the end of the storage. The apples reached the middle and mostly high level of variability in the observed features.

References

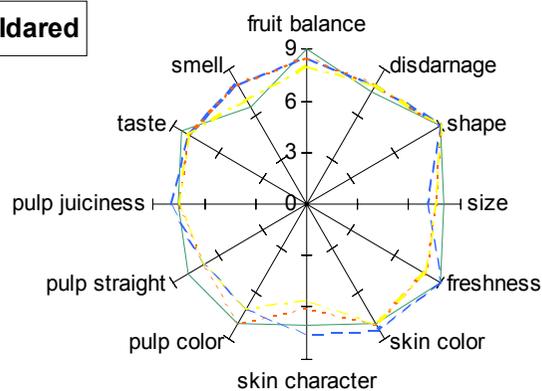
- Blanpied, g. d. et al.: Controlled – atmosphere disorders of commercial fruits and vegetables. Ottawa : Agriculture Canada Publication, 1990, 58 s.
- Goliáš, j.: Skladování jablek v řízené atmosféře. In: Záhradnictvo, roč. 20, 1995, č. 7, s. 5.
- hoRČIN, V.: Skladovanie ovocia, zeleniny a hrozna. 1. Časť- Látkové zloženie a skladovanie. Bratislava: Corvex Training, 1997, 91 s. ISBN 80-07-00512-9
- Kopec, k. – horčín, v.: senzorická analýza ovocia a zeleniny. nitra: Universum, 1997, 194 s.
- Pokorný, J.: Metody senzorické analýzy a stanovení senzorické jakosti. Praha: ÚZPI, 1993, 196 s. ISBN 80-85120-34-8
- Sidigue, m. i. et al.: Production and characterization of blends of apple, kinnow and persimmon juices. In: Journal of Agriculture, 29, 1991, s. 271-278.
- Tomala, k.: Prognozowanie zdolności przechowalniczej i wyznaczenie terminu zbioru jablek. Warszawa: WAU, 1995, 86 s. ISBN83-86241-76-4
- Vachůn, M.: Výsledky hodnocení kvalitativních znaků senzorickou analýzou některých odrůd jablek. In: Moderní vývojové tendence ve skladování ovoce, Lednice na Moravě, 1998, s.71 - 75.

Sensory quality apples during preservation (according to median)

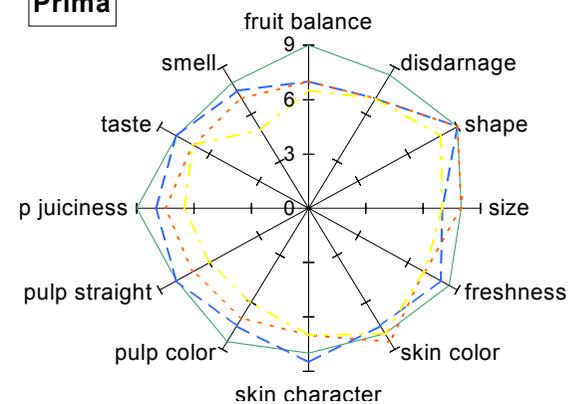
Denár



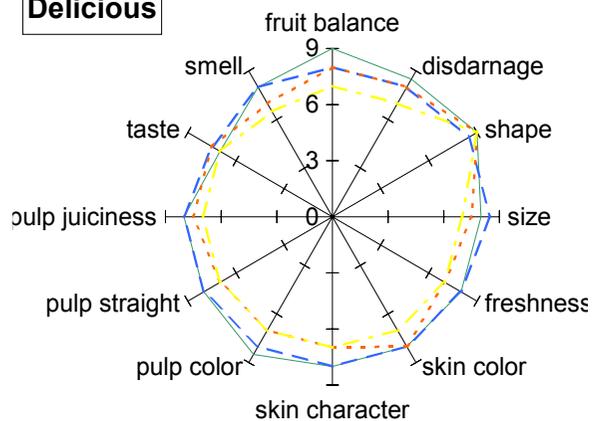
Idared



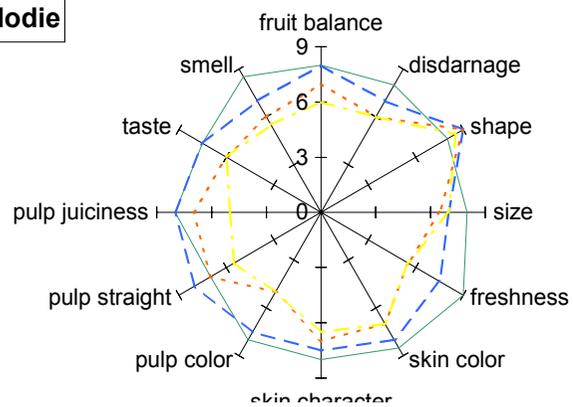
Prima



Golden Delicious



Melodie



Champion

