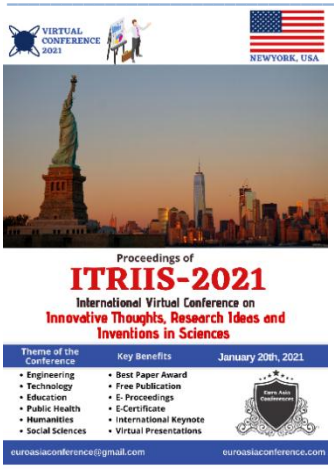

CHANGE OF GRAPE QUALITY PARAMETERS DURING LONG-TERM STORAGE

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Annotation:

Grape is a valuable food product known for its medicinal and dietary properties. Providing the population with such a valuable food product throughout the year is the primary task facing grape producers. To preserve the quality of grapes, it is necessary to know the processes occurring during storage, as well as the influence of environmental factors on the change in the quality parameters of grapes.

Key words:

Grapes, sugars, natural losses, organic acids, shelf life, quality control.

Grapes are grown at a certain time of the year and are the main source of a number of substances necessary for human nutrition - vitamins, mineral salts, carbohydrates, organic acids and others. The main task when storing grapes is to preserve the physical and chemical composition of the berries, that is, its appearance, color, taste, nutritional value and other properties. Thus, the correct and scientific organization of grape storage solves the problem of providing the population with this product throughout the year.

Reducing the natural weight loss of grapes by just one percent during storage will increase production by tens of thousands of tons. Therefore, specialists should pay more attention to the safety of grapes and thoroughly study all related issues.

The storage stability of grapes is determined by the period of storage in favorable conditions. Storage is usually defined as a quantity, calculated as a percentage of the weight loss of food during storage. In general, storage resistance of grapes is their natural feature. Therefore, the same variety can be stored in different ways under different conditions. The shelf life of grapes depends on many factors. If the size, density of grains, thickness, shape and integrity of the skin, color and other characteristics of grapes of the same variety are characteristic of a particular variety, such fruits are well preserved. Limiting the specific properties of the grapes reduces the shelf life.

During storage, grapes do not accumulate valuable nutrients and flavors, but decompose. After harvesting the late varieties, these substances accumulate for some time, and then begin to decompose.

As the fruit ripens, the sugar content increases, while the acidity and nutrient content decreases. During the ripening period, the ratio of sucrose and monosaccharide changes: during storage, the amount of fructose increases, and the amount of glucose and sucrose decreases. As the grapes ripen, the amount of sugar decreases due to their respiration. The sweetness of the grapes is determined by the amount of fructose, although the amount of sucrose and glucose is higher than that of fructose, the grapes are not as sweet.

During storage, grapes change acidity in relation to sugar. By the end of the shelf life, the berries become much sweeter, and then lose their flavor due to the loss of acids. During storage of grapes, pectin substances are destroyed with the formation of soluble pectins, which cause softening of the grapes. Softening of the grapes goes from the middle part of the fruit to the periphery (outer part). When pectin decomposes, methyl alcohol is formed, which darkens the berries. Pectin usually accumulates when grapes die off.

During storage, grapes lose their nutrients, and aromatic substances are oxidized by other enzymes. During this period, the amount of nitrogenous substances and vitamins in fruits decreases. In the early varieties, vitamins are lost faster than in the later ones. During storage of grapes, the reduction of vitamins is activated by high temperature and high air circulation. Thus, during the ripening of fruits, hydrolytic processes take precedence over synthetic ones.

The physical properties of the grapes are of great importance in its collection, transportation and storage. The physical properties of grapes include water evaporation, perspiration, thermal properties, mechanical strength, shedding, porosity, and more. During storage, food will evaporate a lot of water, sweat and dry out over time. The amount of evaporation depends on the type, variety, morphological structure of the grape and its chemical composition. Fruits with thin skin, waxy skin, low protein and colloid content, and poor water retention evaporate and cool quickly. The higher the temperature, the lower the humidity and the faster it moves in the warehouse, the higher the evaporation rate. Moisture on their surface promotes the growth of microorganisms. For storage, grapes are cooled artificially - in refrigerators and, naturally, with the help of ventilation. Cooling of fruits occurs from - 0.5 ° C to - 1 ° C. The cooling temperature of fruits depends on the amount of water contained in them. The faster the fruit is cooled, the slower the development of harmful microorganisms and biochemical processes, as a result, the shelf life of the product is extended and spoilage decreases. This all means that quality control during the storage period of grapes is an important factor in long-term and high-quality storage of the product and is the basis for uninterrupted supplies of grapes to the population and the consumer market throughout the year.

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