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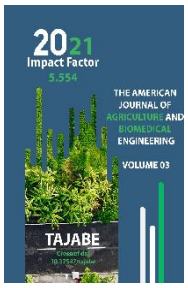

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Rules For Quality Storage Of Grapes

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ABSTRACT

An in-depth study of the biological and physiological processes involved in the storage of grapes, as well as a clear idea about them, is important for the quality of the product. To preserve the quality of grapes, it is necessary to know what processes take place in them during storage and what factors of the external environment affect the course of these processes.

The fact that grapes do not lose their quality over some time and lose minimal weight determines their durability. Storage resistance of grapes is determined by their shelf life in favourable conditions. The ability of grapes to be stored in a certain zone and season, as well as in agro-technical and technological regimes is called preservation. Storage is usually defined as the percentage of the weight loss of a product during storage.

KEYWORDS

Physical and chemical composition of grapes, biological and physiological processes in storage, environmental factors, storage resistance of grapes, sucrose, glucose, evaporation rate, evaporation rate, cooling temperature of fruits, respiration, self - self-heating.

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INTRODUCTION

The main task of preserving grapes is to preserve their physical and chemical composition, ie appearance, colour, taste, nutritional value and other properties. Therefore, proper and scientific organization of grape storage solves the problem of providing the population with this product throughout the year. An in-depth study of the biological and physiological processes involved in the storage of grapes, as well as a clear idea about them, is important for the quality of the product [1-3]. To preserve the quality of grapes, it is necessary to know what processes take place in them during storage and what factors of the external environment affect the course of these processes. The fact that grapes do not lose their quality over some time and lose minimal weight determines their durability. The ability of grapes to resist microorganisms is called their immunity. Products that are not resistant to these two properties are closely related to each other and are usually susceptible to microorganisms.

THE MAIN PART

Storage resistance of grapes is determined by their shelf life in favourable conditions. The ability of grapes to be stored in a certain zone and season, as well as in agro-technical and technological regimes, is called preservation. Storage is usually defined as the percentage of the weight loss of a product during storage. In general, the storage resistance of grapes is their natural feature. Therefore, the same variety can be stored differently in different conditions [4-6]. The shelf life of grapes depends on many factors. If the size, density of grains, thickness, shape and integrity of the skin, colour and other characteristics of the grapes in a single variety are specific to a particular variety, such grapes are well preserved. Restriction of grapes from their specific properties reduces their shelf life.

When grapes are stored, they do not accumulate valuable nutrients and flavourings, but decompose. After the late varieties are cut, the above substances accumulate for some time and then begin to decompose.

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

During storage, the acidity of grapes changes relative to sugar. By the end of the storage period, the fruits are much sweeter and then tasteless as a result of the loss of acids. Pectin substances break down during the storage of grapes to form soluble pectins, which cause the grapes to soften. Physical properties of grapes and technological and chemical control of their storage It is important to know their physical properties during storage, the use of these properties in the storage on a scientific basis. The physical properties of grapes are of great importance in their collection, transportation and storage.

The physical properties of grapes include water evaporation, perspiration, thermal properties, mechanical toughness, shedding, porosity, and more. During storage, the

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products evaporate large amounts of water, sweat, and eventually wither. The amount of evaporation depends on the type, variety, morphological structure and chemical composition of grapes. Fruits with thin skin, waxy skin, low protein and colloidal 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 rate of evaporation.

The rate of evaporation also depends on the amount of water in the fruit. If the grapes are watered before pruning, the fruit will be wet and will evaporate quickly at the beginning of the storage period. They often develop bitter mould. Fruits that do not drink water for a long time before ripening also quickly evaporate and wither during storage, and they spoil quickly.

Moisture on their surface promotes the growth of microorganisms. For storage of grapes are cooled artificially - in refrigerators and naturally using ventilation-outdoor air. Cooling of the fruit occurs from - 0.5 °C to - 1 °C. The cooling temperature of your fruit depends on the amount of water it contains. 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 is reduced. Mechanically damaged fruits are more likely to die from the cold.

The thermal properties of fruits are also important in their preservation. They are characterized by poor heat and temperature conductivity. Because of this, and because of their large porosity, they cool and heat very slowly. Due to the poor thermal and thermal conductivity of grapes, spontaneous heating occurs in warehouses, as a result of which part of the stored product is lost.

The most important physiological process in the storage of grapes is respiration. As a result of respiration, the carbohydrates, acids, fats and additives in the products are oxidized, which are broken down into the final product - water and carbon dioxide, which releases a certain amount of energy. It is also difficult to refrigerate products that have a high respiratory rate. The process of respiration is closely related to the release of heat. In products that are mechanically damaged and contaminated with disease and pests, the respiratory process is much faster. The upper layers of the fruit breathe more rapidly than the inner layers.

CONCLUSION

The process of respiration is a natural feature of grapes, usually, the first breath of products that cannot be stored for a long time is fast, and then slows down, the respiration of products that can be stored for a long time lasts for a month. Dry matter is expelled during respiration and their weight is reduced. Although all the recommendations are followed, the temperature of the grapes cannot be lowered by ventilating the warehouses, but spontaneous heating can be prevented only if a ventilation system is installed on all sides of the warehouse. Thus, during the storage of grapes, disorders of respiration and metabolism lead to several physiological disorders, which reduce the quality of the product and lose its marketability.

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