Research Journal of Chemical and Environmental Sciences
Res J. Chem. Environ. Sci. Vol 7 [2] April 2019: 27-29
Online ISSN 2321-1040
CODEN: RJCEA2 [USA]

Website: www.aelsindia.com/rjces.htm

RJCES

ORIGINAL ARTICLE

The Effect of ultraviolet on storage of late melon varieties

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ABSTRACT
This article discusses the global overview of the use of radiation technology in the food industry. And also analyzed the results of laboratory tests, exposure to ultraviolet rays in the traditional method of storage late-ripening varieties of melons.
Keywords: *Radiation, storage, melon, ultraviolet, organoleptic.*

Received 21.02.2019 Accepted 28.03.2019

INTRODUCTION

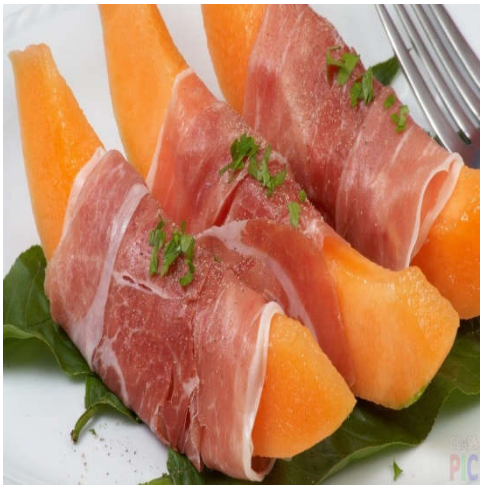
Ensuring food security and increasing the export potential of the Republic of Uzbekistan is impossible without introducing efficient and environmentally friendly technologies into the agro-industrial sector, among which radiation technologies (RT) are promising.

Radiation technologies can be used to increase crop yields and improve product quality, increase shelf life and reduce storage losses, destroy pathogenic microflora and insect pests, select new varieties and disinfect livestock waste [1–4]. These technologies are based on interdisciplinary knowledge of the fundamental laws of nuclear and radiation physics, dosimetry of ionizing radiation and radiobiology, they require the development of specific technological processes and the creation of special radiation technology.

Compared with conventional RT methods, they allow to replace or drastically reduce the use of food preservatives, fumigants and other chemicals.

Technological orientation and world market of radiation technology. According to the IAEA, worldwide interest is growing in the use of radiation technologies of the agro-industrial profile. In particular, 69 countries have permission to irradiate more than 80 types of products, about 40 countries carry out irradiation food products on an ongoing basis [4, 5]. Currently, about 220 specialized centers for the irradiation of agricultural products and foodstuffs have been established in the world. The leaders in the field of radiation technologies are china and usa. The total annual amount of irradiated products in the world to date is estimated at 700–800 thousand tons, and the irradiation market is worth over $ 2 billion and has a steady growth trend [6, 7].

Many are not familiar with the Central Asian names of melon varieties, but their photos invariably amaze both melon growers and ordinary consumers. There is no such variety of forms and types of melons as in Uzbekistan anywhere in the world. The shape of the fruit can be completely different, and the palette of colors on the peel is smooth or with small cracks.




Since ancient times, late-ripening melons such as Shabboz beshagi, Ola homma, etc., have been kept in special rooms in a suspended state from November to April, depending on the air temperature.

During the storage period, they ripened, the sugar content increased, and a pleasant melon aroma appeared. During storage, there are difficulties and this is associated with infection of stored melons with diseases such as fusarium and anthracnose.


Mushrooms of the genus Fusarium produce various mycotoxins, including deoxynivalenol and T-2 toxin, which are subject to maximum limits for the content in grain and its products, as well as NT-2, zearalenone, nivalenol, etc. its metabolites, producing a number of substances that are toxic to various organisms.

Traditional disinfection methods based on the use of chemical disinfecting agents and radiation sterilization methods using radiation ionizing radiation in relation to feeds cannot be considered satisfactory, as they are environmentally unsafe and, in addition, can lead to significant and undesirable changes in physical and chemical and biological properties of the processed objects. Thermal disinfection methods in their various modifications are very energy intensive, require expensive equipment and have limited scope. In addition, during high-temperature processing, partial thermal destruction of protein and other biologically active structures of the original product inevitably occurs. Radiation sterilization. New reception abiosa, aimed at the destruction of microorganisms or insects. To

do this, use ultraviolet, infrared, x-rays and gamma rays. Irradiation of perishable foodstuffs or their environment with ultraviolet rays allows keeping food for some time without the use of cold. The methods of disinfection and disinfection of some products by irradiation with infrared rays have been developed. Certain doses of beta and gamma rays give a good sterilizing effect without changing the taste and nutritional qualities of the product.

RESULTS AND DISCUSSION

A dose of ultraviolet irradiation equal to 100 kJ / m 2, in addition to bactericidal effects, also leads to inactivation of fungal microflora (fungi of the genera Fusarium and Alternaria), since a dose of UV radiation from 20 kJ / m 2 is sufficient to inhibit its growth [8].

The purpose of our research work was to determine the positive effect of pretreatment of later ripe melons before storage with ultraviolet bactericides. To conduct the experiment on the territory of the experimental site at Urgench State University (for melon storage), two rooms with the same geometric and thermal indicators were selected.

Physical methods of antiseptic treatment included a section of fruit stalks 3-5 cm long and processing of the melon's cutting site during harvesting with a solution of beekeeping antiseptic products, as well as ultraviolet irradiation (before drying) for 20 minutes. Ultraviolet antiseptic treatment was carried out in a box at a temperature of 22-24 ° C with ultraviolet lamps BUV-30. The lamps were installed at the top, bottom and sides so that the fruits were placed at the same distance of 30 cm from each source in one layer on a nylon mesh 3x3 cm stretched in the middle of the box. The room where antiseptic melons are to be stored for more than 24 hours is processed with ultraviolet lamps. Melons in a suspended state were stored from September 29, 2018 to April 29, 2019, that is, for 7 months.

CONCLUSION

As a result of long storage and storage opening, it was revealed that 33% of untreated melons underwent infection (change in color and taste) and 12% of melons from pre-treated melons underwent infection and, very importantly, a large difference in color and taste was revealed (organoleptic) that is, processed melons had a more pleasant taste and light.

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CITE THIS ARTICLE

Radjabov M. F, Khakimova B. B, Karimov Sh.X and Rajabov J. M. The Effect of ultraviolet on storage of late melon varieties. Res. J. Chem. Env. Sci. Vol 7 [2] April 2019. 27-29

