FEATURES OF THE PRODUCTION OF APRICOT KERNELS AS A SECONDARY RAW MATERIAL FOR THE FOOD INDUSTRY

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Abstract: In this paper, we proposed convective and combined methods for drying wet kernels of apricot stones. Kernels of apricot stones are a very ambiguous food product, during their heat treatment in them occurs not only the loss of mass due to the removal of moisture, but also the loss of mass due to biochemical changes occurring at high temperatures.

Apricot stones are a healer of human cells. All because their kernel contains a rare vitamin B17, which includes cyanide substance. When cyanide enters the body, cancer cells either die or are healed [1]. In stone kernel, it is concentrated from 35 to 60 % of non-drying fatty oil. Also kernels contain: glucoside amygdalin, emulsin, lactase and hydrocyanic acid. Kernels can be eaten raw, dried or roasted, but not more than 20 grams at a time. 100 grams of apricot kernels contain more than 450 kcal [1, 2, 3].

Apricot kernels are very often used in medicine, in cooking in the form of powders, which are added into glazes, ice cream, yogurts, creams and other dairy products.

The purpose of this work was an experimental study of the drying process of the kernels of the apricot stones by convective and combined - convection + UHF (high frequency currents) methods. In the first part of the study, were studied the kinetics of convective drying. In the second part of the experiment, was studied the influence of high-frequency heating in combination with the convective method of energy supply on the kinetics of drying.

It was experimentally established that the drying process should be carried out in two stages: the first stage lasts until the critical moisture content of 110 % is reached and it should be implemented by convective energy supply (100 °C). The second stage lasts until the equilibrium moisture content of 30 % is reached, using a combined energy supply (convention + UHF) with the strength of the electromagnetic field $E = 1.8 * 10^4$ $V \cdot m^{-1}$.

References

1. Chalaya, L. D., Biohimicheskaya i tehnologicheskaya ocenka plodov novyh perspektivnyh sortov abrikosa Krasnodarskogo kraya. Dissertacia na soiskanie uchenoj stepeni kandidata tehnicheskih nauk. Krasnodar, 2001.

2. Makarkina, M. A. i dr., Biologicheski aktivnye veshhestva plodov kostockovyh kultur // Nauchno-metodicheskij elektronnyj zhurnal «Koncept». - 2014. - T. 20. - pp. 451-455.

3. Poperechnyi, A.N., Intensificaciya processov pererabotki plodovyh kostochek. Proceedings of the 7th scientific and technical conference. «Low-temperature and food technologies in the twenty-first century». St. Petersburg, 2015, pp. 11-14.