Development and improvement of the process of vegetable raw materials cleaning is an actual scientific and technical goal. One of the most perspective directions of intensification of vegetable cleaning process is the development of the combined methods for their processing. The improvement of the tuber cleaning process is based on the combination of the process of heat treatment of Jerusalem artichoke with steam and the process of subsequent mechanical after-treatment.

The necessity of creating equipment for the realization of the combined cleaning process of Jerusalem artichoke tubers is proved. A combined purification process, which is based on the combination of thermal and mechanical effects on the product under purification is proposed.

Experimental studies are carried out to study the influence of the parameters of the process of Jerusalem artichoke heat treatment on the change on the surface layer of the tuber. The influence of steam pressure and the duration of tubers’ heat treatment on the depth of thermal treatment of the tuber surface layer, as well as on the efficiency of peel separation, is investigated. In addition, the influence of the duration process of tubers’ mechanical after-treatment on the quality of cleaning is studied.

An experimental sample and an appropriate technique that allow to carry out investigations of the combined process for cleaning Jerusalem artichoke tubers with the ability to determine the influence of all its parameters on the percentage of raw material losses and the quality of cleaning are developed. Rational parameters of the combined process of Jerusalem artichoke cleaning are established.

It is proved that the increase of steam pressure and duration of heat treatment process raise the depth of thermal treatment of the surface layer and reduce separation forces of peel from the tuber. It is determined that an increase in the duration of mechanical after-treatment process increases the percentage of peeled tubers of Jerusalem artichoke, but increases raw material losses. It is determined that the reduction in the separation force of Jerusalem artichoke peel during heat treatment makes it possible to reduce the duration of mechanical post-treatment process. It is determined that with increasing depth of thermal treatment of the surface layer of Jerusalem artichoke, raw material losses grow. It is proved that Jerusalem artichoke tubers, which have a longer shelf life, need to increase the duration of their mechanical post-treatment process to ensure the required quality of cleaning.

Rational parameters of the combined process of cleaning Jerusalem artichoke are determined, which allow significantly intensifying and mechanizing the cleaning process, decreasing raw material losses and improving the quality of cleaning.

**Keywords:** Jerusalem artichoke, combined effect on raw materials, cleaning parameters, preliminary heat treatment, mechanical after-treatment.