

## **Секція 9. УДОСКОНАЛЕННЯ ПРОЦЕСІВ ТА УСТАТКУВАННЯ ХАРЧОВОЇ І ГОТЕЛЬНО- РЕСТОРАННОЇ ІНДУСТРІЇ**

### **MEMBRANE JUICE PROCESSING EQUIPMENT (ОБЛАДНАННЯ ДЛЯ МЕМБРАННОЇ ПЕРЕРОБКИ СОКІВ)**

**Doe Daniel Boye, gr. M-15m**

Scientific supervisor – PhD in Tech. Sc., Associate Prof. **D. Dmytrevskiy**  
Kharkiv State University of Food Technology and Trade

За останні десятиріччя у світі набуло розповсюдження виробництво концентрованих плодово-ягідних соків. З метою підвищення споживчих властивостей фруктових та овочевих соків використовуються такі процеси, як освітлення та фільтрування. Мембранні методи вважаються передовими у виробництві й широко використовуються для очищення соків, а також для їх концентрування.

The use of membrane technology as a processing and separation method in food industry is gaining wide application. Membrane separations can be used either as alternatives to conventional techniques or as novel technology for processing new ingredients and foods. Membrane separations are considered green technologies. In many cases, membrane processes are more advantageous than traditional technologies. For example, using cold pasteurization and sterilization with suitable membranes instead of high temperature treatment for the removal of microorganisms is more economical in terms of energy consumption.

Using membrane filtration to remove microorganisms for shelf-life extension of foods instead of using additives and preservatives also create a green image for the processed foods as well as for the processing procedure. Concentration by membrane filtration instead of thermal evaporation does not employ severe heating and that it preserves the natural taste of food products and the nutritional value of heat-sensitive components.

The safety and quality of the products manufactured must be ensured with regard to microbiological, functionality, texture, flavor and taste factors. Future trends for the use of membranes in the fruit juice industry will be driven by the quest to achieve higher selectivity and permeability in clarification processes, to boost process intensification and to decrease operating costs as well as the costs of membrane production.

There is a trend towards increasing the use of disposable systems (bioreactors, ultrafilter membranes and enzymatic membranes) in process intensification which are attractive for production scale manufacturing, eliminating the need for the development and validation of cleaning cycles.