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PL2 – MEMBRANE TECHNOLOGY AND THE FOOD INDUSTRY

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Considered as an economic alternative for many traditional separation processes, membrane technology already has been showing a great acceptance in many sectors of the food industry. As the separation is carried out under mild conditions of temperature and pressure, the use of these processes can preserve the final product quality, as for example, in the juice industries where the traditional use of heat significantly modifies the sensory and nutritional properties of the products. In Brazil, the dairy sector is the one that has been using this technology, mainly for the recovery of whey protein by ultrafiltration. New technologies employed on milk and its components (proteins, lipids and carbohydrates) will suit more to the consumers' demands on health and wellness. Membrane technology has been increasing in the fruit juice and beverage industries. Cold pasteurization, clarification and concentration are the main applied processes. By this way microorganisms can be removed of fruit juices by microfiltration process, sodas, drinks, gelatins and jellies can be produced from juices clarified by microfiltration or ultrafiltration. In the concentrated juice production, the use of the thermal processing also results on quality problems. Membrane separation processes, reverse osmosis and osmotic evaporation, are particularly useful in the fruit juice concentration as they can be carried out at room temperature, minimizing the risk of quality reduction. Pervaporation has been pointed out for the recovery of natural aromas, like coffee, fruits and beverages. It presents as advantages, when compared to the conventional extraction processes, not using solvent during the extraction as well as the possibility of operation in mild temperatures, preventing the degradation of thermosensitive components of the raw material and reducing energy costs. The food industry produces throughout its chain, a large amount of agro-industrial wastes that cause money losses and many environmental problems. Nevertheless, the complete utilization of those wastes as ingredients for feed processing aim to add up value to these by-products. In the last few decades the use of membrane technology has grown significantly in many fields including wastewater treatment and co-products recovery.