

# CONCENTRATION SERVICE THROUGH FALLING FILM EVAPORATION

**Innovations and Benefits** - The falling film evaporation technology, characterized by very high exchange coefficients, is suitable for the concentration of juices and aqueous solutions with low initial viscosity and low suspended solid content. Thanks to the short standing time, it is particularly used in the food industry where it is necessary to preserve the nutritional and organoleptic qualities of the concentrated product (e.g. tomato, whey and wine industries). In addition, since the removal of water from the initial matrix takes place at low temperature, it is also suitable for the concentration of products whose constituents are heat sensitive. Reducing the volume of products allows various advantages including lower storage and transport costs. The plant has a treatment capacity of 80 kg/hour, the process temperature does not exceed 50 °C and the operating pressure is 100 Torr.

**Use** - Experimentation, development, scale up of concentration processes of agri-food liquids, of agro-industrial and industrial derivation in general (juices, syrups, molasses, fermentation broths, etc.).

**Applications and ongoing Activities** - R&TD activities in collaboration with SMEs and Research Institutions both through Contract and through joint Projects on regional, national and EU measures. As part of the service supply activity with industrial operators in the agro-food and energy sectors, concentration campaigns were conducted for products deriving from fermentation processes and broths-syrups obtained downstream of biomass chemical or thermal pretreatment techniques ( tobacco, straw). These R&TD activities are accompanied by assessments on the technical-economic feasibility of the process.



*Falling film evaporation plant Agrobiopolis Technological Hall of CR Trisaia (MT)*

