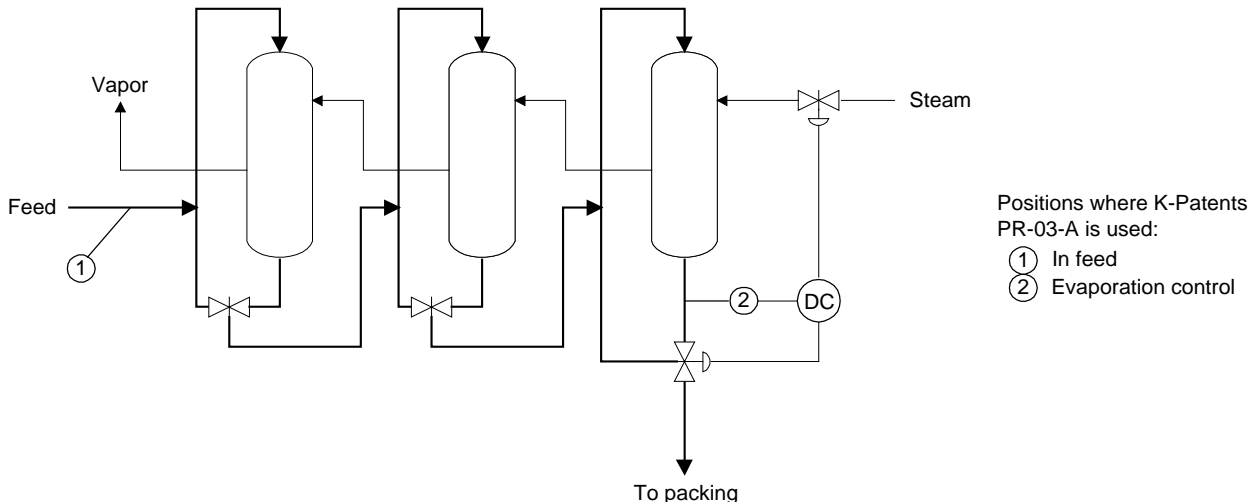


Fruit Juice Concentrate Process

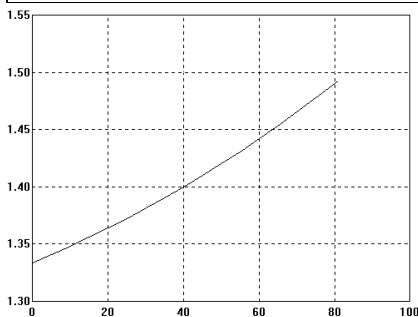


Fruit Juice Concentrate

Typical end products

Fruit juices

Chemical curve: R.I. per Brix



R.I. Reference Temp. 20°C

See also

Online Blending of Fruit Juices 2.04.02

Introduction

Juices are produced from various fruits that are not necessarily harvested the whole year round. Despite this they should be available 365 days of the year. Before shipping to its final destination the

extracted juice is concentrated to ensure longer storage life and easier transportation.

The concentration of fruit juices requires the partly removal of water, leaving all the original solid components such as fruit sugars, minerals and vitamins to the more concentrated solution.

Application

After extraction of the juice, screening and centrifugal depuration, the juice goes to the primary chest. In this chest the juice concentrations are not constant, but vary from 9 to 12 Brix depending on the fruit quality, amount of rain during the year, etc. After this tank, the juice goes to the evaporation plant.

Typically a 3-stage falling film evaporation plant is used for concentration of the fruit juices. Evaporators have a constant capacity. In the evaporation process the concentration value is typically increased from 10 to 50-70 Brix.

Installation

K-Patents Sanitary Refractometer, PR-03-A is mounted at the outlet of the evaporator. It provides a signal for a controller to control the Brix value by adjusting the inlet flow through the evaporators.

If the Brix value increases, the valve is opened to increase the flow rate of product through evaporators and thereby bringing the Brix value back to the set-point. Typical measurement range is 30-80 Brix.

Removing water during the concentration process requires a lot of energy in form of steam. A tight control of the evaporator station results in great energy savings that are gained by using K-Patents PR-03-A.