

RESULTS TASK 5

SEMI-INDUSTRIAL OBTAINING OF TANNING EXTRACT FROM GRAPE SEED IN THE PROTOTYPE PLANT

Tannin extraction from grape seed

Degreased seed is treated in aqueous medium with metabisulphite to make tannins soluble under temperature and pressure conditions to make the sulphitation reaction of tannin molecules easier. The work pressure allows drain the tannin solution to be discharged through the external tank.

The treated seed, which remains inside the autoclave, is washed with water for reducing significantly the tannin content. The washed water is collected to be used in the following extraction with new seed. In this way, the tannin content increases in the tannin solution.

The washed and treated seed, which contains 70% of humidity, is drained with a press (wine press) in order to recover part of washed water to be added on washed water collected in the plant.

Tannin concentration

Tannin solution is settled and after that, it goes through an ultrafiltration membrane to obtain a dark brown concentrated solution and a quite light brown permeate. This permeate goes through nanofiltration membranes to obtain a concentrated solution and a permeate. This permeate has the appearance of water and it is the waste water of tannin concentration process that is treated in the waste water treatment plant. In this way, two different products are obtained: the ultrafiltration concentrate and the nanofiltration concentrate.

The tannin extraction and concentration schematic process is as follows:

