II.2.1.27 Treatment of grapes by pulsed electric fields

Definition:

A process that consists on the application of sufficiently high pulsed electric fields (PEF) to destemmed and crushed grapes that causes the permeabilization of the cell membranes especially of the grape skins.

Objective

a) Treatment of red grapes destemmed and crushed by PEF in order to

- Facilitate and increase the extraction of valuable substances such as polyphenols, yeast available nitrogen, aroma compounds including precursors, and other substances located inside the grape cells
- Reduce maceration time

b) Treatment of white grapes destemmed and crushed by PEF in order to

- Facilitate and increase the extraction of valuable substances such as yeast available nitrogen, aroma compounds including precursors, and other substances located inside the grape cells.

Prescriptions

The technique consists on the application of pulsed electric fields in the range of nanoseconds to milliseconds which are sufficiently high to permeabilize the cell membranes. The destemmed and crushed grapes are treated in at least one treatment chamber with at least one pair of electrodes.

Recommendation of OIV

Admitted