PILOT TRIALS
OF WINE TARTARIC STABILIZATION

Optimal design of electrodialysis application on wine demineralization needs to be based on data obtained on real feed, because wine differs from plant to plant. Fully equipped pilot scale unit for beverage industry is used for estimation of product composition as well as determination of electrodialysis unit capacity.

RESULTS OF PILOT TRIALS

- Wine stabilization parameters evaluation of diluate (product – stabilized wine) and concentrate (brine – potassium and cactium tartarates, malates, lactates etc.)
- data for scale up to industrial size electrodialysis unit
- specific consumption of water, electricity and chemicals

PROCESS CONDITIONS

Equipment	pilot unit P1 EDR-Y/50-0.8
Feed	Wine after filtration
Product	demineralized wine to specific value defined by long term temperature during storage
Brine	Wine organic acids salt solution, conductivity controlled by water dosing, pH adjustment by acid dosing
Mode	batch or feed-and-bleed
Working temperature	15°C

MEASURED PARAMETERS

Voltage, current, flow rates, diluate inlet and outlet conductivity and outlet pH, concentrate outlet conductivity and pH, initial and final weight of diluate and concentrate, weight of water added to concentrate, quantity of acid added to concentrate, quantity of chemicals added to diluate for product pH adjustment.

EXAMPLE OF A SCHEDULE OF PILOT TRIAL COMBINED WITH TRAINING

1st day	Installation of the pilot ED unit, chemical cleaning and sensor calibration (test preparation and practical training). Short introduction to the procedure of pilot test accompanied by short adjustment test (goal: specification of final demineralization level).
2nd day	Evaluation of final demineralization level (2 batches + cleaning = 12 h operation).
3rd – 4th day	2 days of continuous testing (4 batches + cleaning = 24 h operation)
5th day	Unit cleaning and conservation after pilot trials.

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