

Intensified Recovery of Valuable Products from Whey using Ultrasound

Salient features

- An efficient pre-treatment procedure that reduced the microbial load in the raw whey and enhanced its storage life.
- Pre-treatment included heat treatment followed by optimized ultrasound exposure.
- Production of whey protein concentrate (WPC) powder of required functional properties from the retentate obtained after ultrafiltration through an efficient spray drying process with ultrasonic atomization.
- Recovery of lactose from permeate obtained after ultrafiltration, without evaporative concentration, through anti-solvent assisted sonocrystallization process based on the use of ultrasound.
- Dependence of processing time, crystal size distribution and shape characteristics of lactose on the ultrasound parameters.

Advantages

- ✓ Best pre-treatment method of whey for the intensified recovery of lactose.
- ✓ Ultrasound assisted ultrafiltration maximizes the flux and the lactose recovery from whey.
- ✓ Enhanced process for recovery of proteins based on the use of ultrasound as a process intensification approach for pre-treatment, ultrafiltration and spray drying.
- ✓ Use of the ultrasonic reactor for the ultrasound assisted ultrafiltration and maximum lactose recovery by maximum foul removal.
- ✓ Use of dual frequency ultrasound (22+44 kHz) for ultra filtration of whey for maximizing the overall effect.

Process Technology / Product developed by

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More

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