Association of Food Scientists & Technologists (India)

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FE 9

Storage studies on carrot sticks Subjected to radio frequency drying

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FE 10

Texturized pineapple gels: Screening experiments to identify the important variables on gel formation and its properties

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FE 11

Studies on standardization of drying conditions for the preparation of spray dried noni powder

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FE 12

Computational fluid dynamic (CFD) simulations for study the particle histories during spray-freezing operations

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FE 13

Effect of conditioning on drying kinetics of buckwheat seed (*Fagopyrum esculentum*)

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FE 14 (Registration fee not received till date)

Studies on effect of pretreatments on dehydration characteristics of mint leaves

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FE 15

Kinetics of moisture loss and oil uptake during deep fat frying of Gethi (*Dioscoria kumeunensis*)

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FE 16 (Registration fee not received till date)

Dehydration characteristics of Spinach

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FE 17

Heat pump drying of green nendran banana (*Musa paradisiaca*)

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FE 18

Optimization of process variables for the preparation of neyyappam with longer shelf-life

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FE 19 (Registration fee not received till date)

Effect of operation parameters on ultrafiltration performance of thin sugar beet juice

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FE 19

The effect of operation parameters on ultrafiltration performance of thin sugar beet juice

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Objectives: The main objective of sugar industry is to decrease the non-sugar compounds such as colorants, turbidity, and other impurities in sugar beet juice to increase its purity before the crystallization step. In recent decade, many studies conducted to reach this aim, one of them is application of membrane technology especially ultrafiltration. In this study, the effect of different process conditions on the ultrafiltration performance of thin sugar beet juice has been studied.
Methodology: Thin sugar beet juice was processed using a polysulfone-amid ultrafiltration membrane with molecular weight cut-off (MWCO) of 20 kDa. The UF process conditions were temperature at three levels of 30, 40 and 50°C, transmembrane pressure at three levels of 1, 2 and 3 bar and operating time at three levels of 15, 30 and 45 min. The ultrafiltration performance parameters including permeate flux, fouling and rejection of sugar and non-sugar compounds have been evaluated as a function of process variables.
Results and conclusions: The results showed that increase in processing temperature increased the flux; however, the fouling, non-sugar and sugar rejection were decreased. Increase in transmembrane pressure led to increase in flux and fouling, but it had a positive effect on rejection. It was also found that after few initial minutes of process the flux reached to a steady state condition and after that its variation with time was negligible. In addition, increase in processing duration increased non-sugar rejection and decreased sugar rejection. In this study, the average permeate flux, fouling, Brix rejection, sugar and non-sugar rejection were obtained 24.84 kg/m^{3}h, 26.6%, 2.9%, 1.77% and 23.91%, respectively.