Editorial Board

For Authors

- Authors Declaration
- Instruction to Authors
- Guide for Authors
- Copyright Statement
- Submission

For Reviewers

- Guide for Reviewers
- Reviewers Login

Subscription

Czech J. Food Sci.

Lapišová K., Vlček R., Klozová J., Rychtera

M., Melzoch K.

Separation techniques for distillery stillage treatment

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The separation of stillage was tested by means of the pilot plantARNO600-BIO using three-channel ceramic membranes with the pore diameter range from microfiltration to ultrafiltration (1.4 µm – 5 kDa). The permeate from the last membrane step was able to be recycled as technological water. The best results were achieved in the arrangement of series using 0.2 µm membrane as the first step supplemented by ultra-filtration membranes (50 kDa and 15 kDa), predominantly, where the reduction of the chemical oxygen demand (COD) extended 80%. With this process, we try to get some advantages over the conventional process in terms of eliminating both land and energy costs for the wastewater treatment process and improving the quality of the discharge water. The main goal in this study is to

analyse different separation steps and conditions to find both the best separation options for the decrease of the final volume of distillery stillage, and the way how to make the bio ethanol production more profitable.

Keywords:

distillery stillage; bio ethanol; membrane filtration; ceramic membranes

[fulltext]