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Pilot Plant Concept "EthaNa" for Ethanolic Extraction of Dehulled Rape Seeds

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Gunter Börner¹
Agnes Pior¹
Daniela Pufky-Heinrich²
Markus Henneberg³

1 B+B Engineering GmbH,
Magdeburg, Germany

2 Fraunhofer CBP,
Germany

3 AVA GmbH, Germany

PLENARY TALKS

The presentation gives a summary and an outlook of current results and targets of various research activities in developing a new concept for a rape seed bio-refinery.

EthaNa represents the aim and technological background: Ethanolic Mild Extraction of Oilseeds. This concept, researched by a consortium of institutes and industry, includes process development and new products from processing of dehulled rape seeds. In order to prepare this new technology and its benefits for industrial use a pilot plant has been developed and will be constructed.

First process step is a new dehulling process using fluidized bed technology with the goal of less than 3% hull content in the rape seed kernels.

The innovative approach of using dehulled rape seed is a special treatment of breaking the cells of the seed followed by a direct extraction with ethanol. After separation of the different phases and the desolventation step, a high valuable rape-seed-kernel-concentrate for different applications e.g. for improved animal feed quality and for production of different rape seed proteins will be obtained.

The careful conditions of the process allow the extensive elimination of anti-nutritive substances from the rape-seed-kernel-concentrate without damaging the proteins.

The extracted oil has an improved quality and can be considered as a pre-refined oil with significantly less expenditure on the refining process.

The separated middle fraction contains various high added value components which can be fed to an additional isolation process gaining e.g. lecithin, tocopherols, polyphenols and further valuable components depending on the application of specific technologies.

A prospective outlook for industrial use of the EthaNa-Concept will be presented.

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