

Innovative process for the continuous dehulling of rapeseed - German company offers the individual configuration and construction of an industrial plant for the developed dehulling process for rapeseed.

Summary

Profile type	Company's country	POD reference
Technology offer	Germany	TODE20230621014
Profile status	Type of partnership	Targeted countries
PUBLISHED	Investment agreement	• World
Contact Person	Term of validity	Last update
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General Information

Short summary

The technology offer includes the configuration and plant construction of an industrial plant for the continuous dehulling of rapeseed. The technology allows the treatment of 1 t/d to 750 t/d. The process is based on the use of circulating fluidized bed technology as the process-determining step.

Full description

Innovative process for the continuous dehulling of rapeseed - German company offers the individual configuration and construction of an industrial plant for the developed dehulling process for rapeseed.

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The essential process stages of the procedure are:
- pre-comminution of the rapeseed,

- continuously operating fluidized bed,
- fluidization technology including preheating of the fluid flow for drying the rapeseed,
- separation stage rape seed - rape hulls and
- required MSR processes.

The pre-cut rape seed is conveyed via a rotary feeder into the fluidized bed unit. This is designed as a continuously operating fluidized bed chute. The added product passes through the apparatus from the feed side to the discharge side with a dwell time depending on requirements. To avoid a short-circuit flow of the digested rapeseed, the fluidized bed is divided into several sections, which are separated from each other by adjustable overflow and underflow weirs. The fluidizing air mass flow can be adjusted separately for each section. The temperature of the fluidizing air and the product temperature are measured for each chamber. In addition, the differential pressure across the inflow floor and the layer material of each chamber is measured. In the last chamber of the fluidized bed apparatus (before discharge), a capacitive inline moisture measurement system is installed. This is used to measure the moisture of the rapeseed during the drying process. The rapeseed husks and rapeseed dust are discharged from the fluidized layer. The rape seeds remain inside the fluidized bed and are discharged from the fluidized bed on the discharge side via a rotary valve.

The separation of the discharged husk and dust fraction takes place in the first step with the help of a cyclone. The product is collected at the bottom of this device and discharged via a rotary valve. For further purification of the exhaust air, it is passed through a filter after the cyclone. The dust separated here is collected in a collecting container. The filter is cleaned pneumatically via compressed air pulses. The material is fluidized by means of two blowers with frequency converters, one designed as a pressure blower and one as a suction blower. This allows a defined pressure level to be set within the system. The air volume measurement provides the specification for the process control system. The fluidization air is heated according to the existing on-site conditions.

Advantages and innovations

Advantages and innovation of the technology offer are seen in:

- compared to the state of the art, the technology is efficient and environmentally friendly,
 - peeling, drying and conditioning are possible in one process,
 - the technology has been tested in a pilot plant, and
 - the existing models for the process engineering design of an industrial plant allow safe scale-up factors, based on the existing pilot plant.
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Technical specification or expertise sought

Stage of development

Available for demonstration

Sustainable Development goals

- **Goal 2: Zero Hunger**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 3: Good Health and Well-being**

IPR Status

No IPR applied

Partner Sought

Expected role of the partner

The process has been tested on a pilot scale. An investor is being sought for the technical realization of the technology.

Type of partnership

Investment agreement

Type and size of the partner

- **Other**
- **Big company**
- **SME 11-49**
- **SME 50 - 249**
- **SME <=10**

Dissemination

Technology keywords

- **03003 - Apparatus Engineering**
- **07001001 - Agriculture Machinery / Technology**
- **07001004 - Crop Production**
- **03002 - Process Plant Engineering**
- **08001004 - Food Processing**

Targeted countries

- **World**

Market keywords

- **05008002 - Food and feed ingredients**
- **08003007 - Other industrial equipment and machinery**
- **05009001 - Food & feed ingredients**
- **09005 - Agriculture, Forestry, Fishing, Animal Husbandry & Related Products**
- **05009004 - Plant health**

Sector groups involved