

INTEGRATED PROCESSING OF MUSTARD SEEDS
(Process code – CPF 1820)

INTRODUCTION

Mustard and rapeseed forms the second major oilseed crop in India. Most of the oilseed is used for oil extraction of Ghani or expellers. In the traditional processing of mustard/rapeseed the material is crushed without any de-hulling. Mustard/rapeseed contains about 20% by weight of hull portions, which imparts dark colour, high amount of crude fibre (about 70%) in the mustard/rapeseed meal and also dark colour to the oil. Because of these qualities the cake finds very limited use for food/feed purposes. Hence an integrated approach for processing of mustard/rapeseed was developed for obtaining a good quality oil and mustard cake with low content of crude fibre suitable for food and feed uses. Because of the low fibre content and nutritional quality it finds a good protein supplement for poultry feed.

PRODUCT

Good quality high pungent mustard oil and low fibre mustard cake for food and feed uses. Mustard oil is edible oil and fetches high premium value depending upon pungency. Mustard cake obtained after extraction of oil from de-hulled kernels can be utilized as mustard flour for preparation of mustard paste and use in the preparation of pickles, etc. Because of low fibre content in the meal and nutrition superiority, it finds as a good protein supplement in poultry feed industry.

PROCESS

Integrated processing of mustard/rapeseed involves the following steps:

1. Seed pre-cleaning for removal of extraneous material like stones, mud, etc.
2. Seed grading to obtain uniform size seeds.
3. Conditioning the cleaned seeds for de-hulling
4. De-hulling of the conditioned seeds
5. Separation of de-hulled kernels and hull fraction
6. Proper conditioning of de-hulled kernels for obtaining high pungent oil
7. Extraction of oil in Ghani and expeller

LIST OF EQUIPMENTS

De-stoner, Seed grader, De-huller, Air classifier, Power ghani, Mini expeller, Cake breaker, Oil filtration unit, Pump for filtration, Truck drier, Sieve shaker (small unit), Weighing scale, Conveyer system, Material handling vessels, etc.,

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|------------------------|--------------------|
| a) Land | 200 m ² |
| b) Building | 100 m ² |
| c) Plant and machinery | Rs.9,00,000 |

TECHNOLOGY / MANUFACTURING PROCESS - AVAILABILITY

The technology for processing of mustard seeds production has been developed at CFTRI, Mysore using appropriate equipment optimal product recovery of right quality. The institute has the necessary expertise to provide technical assistance and guidance for setting up the project and implementation, under technical consultancy arrangements.

Salient features of the process:

1. Increased Ghani efficiency
2. Increased capacity of the Ghani
3. Powder requirement is less by 40%
4. Superior quality of oil in respect of colour, flavour, lower FFA and high pungency in oil.
5. The mustard cake is bright yellow in colour, low in glucosinolate and crude fiber content and can be used for feed/food purposes. Mustard cake can be used for preparation of mustard paste and use in the preparation of pickles.