

Oil expellers (oil extraction machine) : Screw type oil expeller are advanced in oil processing machinery, characterized by their high oil output rate with good quality, simple design, easy to use & continuous operation. Rather than mustard, they can use for various raw material, such as sesame, olive and sunflower etc. Expellers are continuous in operation and work by grinding and pressing the raw material as it is carried through a barrel by a helical screw. The pressure inside the barrel, and hence the yield of oil, are adjusted using a ‘choke’ ring at the outlet. The equipment has higher production rates than similar sized presses but is more expensive to buy and operates.

Precautions before oil extraction

- Seed should be neat and clean before oil extraction process.
- Seed should be properly dried.
- There should be no straw and other materials in the seed.



These are the pictures of processing and storage house of mustard

Oil packaging and storage : Use clean, dry containers to package and store oils. Sealed glass or plastic bottles are adequate for small quantities. Coloured containers in a dark box help increase shelf life. Steel or plastic tanks work well for large quantities. The shelf life of oil is usually 6 to 12 months if it is properly packaged and kept away from heat and sunlight. Keeping air away from oil is perhaps the most important step to prevent rancidity. Completely fill whatever size container you chose so there is no air space and then cap the container tightly.



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Post-Harvest Management in Rapeseed-Mustard Cultivation



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Post-Harvest Management in Rapeseed-Mustard Cultivation

Post-harvest technology is an inter disciplinary science and technique applied to agriculture produce after harvest for its protection, conservation, processing, packaging, distribution, and utilization to meet the food and nutritional requirements of the people in relation to their needs. After being harvested, the mustard under goes a series of post-harvest operations such as threshing, cleaning, transportation and storage management.

The proper harvest, threshing and storage of the crop are important to avoid post harvest losses. The crop should be harvested when 75 per cent of pods turn to golden yellow in colour. At this stage, majority of seeds are firm when pressed between the fingers. The oil content in the seed is the maximum at this stage. Harvesting during the green pod stage reduces the yield and oil content. The crop should preferably be harvested in the morning when the pods are damp with night dew, which minimizes the shattering losses. For manual harvesting, use a sickle that is light in weight and easy to handle (example : Naveen sickle). It will reduce the drudgery and the time taken for harvesting. After harvesting the harvested plants are made into bundles and stacked in the sun in for 7-8 days before threshing. Threshing should preferably be done by using threshers. Threshing is followed by winnowing, where the seeds are separated from the straw. The seeds should be sun dried for approximately one week to reduce the moisture content. For safe storage, moisture content of seeds should be eight per cent.

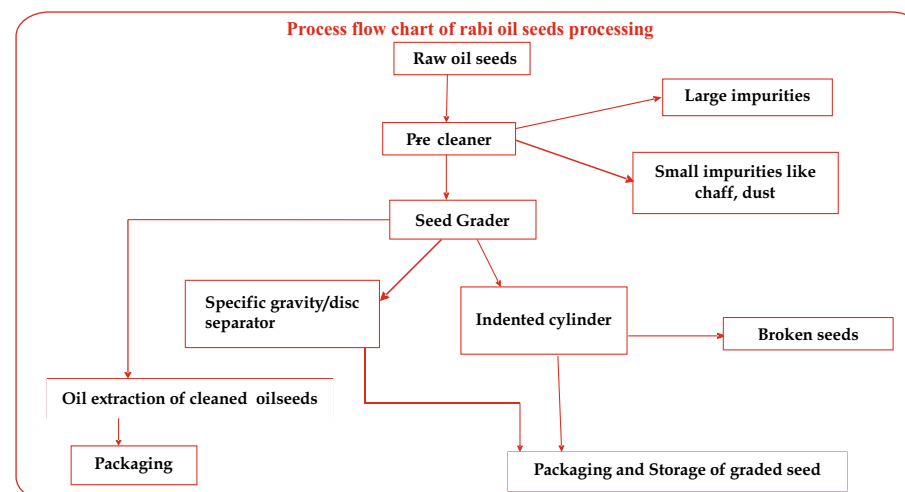


Importance of post-harvest technology : Proper handling, packaging, transportation and storage reduces the post-harvest losses in mustard. The technology has become a necessity to improve the food safety and strengthen nations food security. The technology helps to boost export of agricultural commodities in the form of preserved and value added products.

Threshing : Threshing should be done when moisture content in seed between 15-20%. When crop is very dry (6-12 % moisture), it will be tuff to minimize the post-harvest losses. Make bundles of the harvested plants and stalk them in the sun drying for 7-8 days before threshing. Threshing should be done either treading by bullocks or running of tractor over the dried plants or using threshers. Separate the seeds from stover by winnowing.



Post-harvest processing of rabi oil seeds



Storage management : For safe storage, moisture content of seeds should be 8%. This can be achieved by sun drying the threshed seed for approximately one week. Seed quality is decrease at moisture content of 6% and at this moisture content if we storage the seeds, seeds dried in which quality easily deteriorate in storage. Neat and clean seeds should be storage at appropriate moisture content for maintain the quality of seed. An adverse effect was observed when seeds of mustard storage in hot weather with high moisture content. So, for safe and long viability storage, mustard seeds should be dried at appropriate moisture.



Importance of storage : Good storage facilities are important to the farmers all over the world. They help to ensure household and community food security until the next harvest and commodities for sale can be held back so farmers can avoid being forced to sell at low prices in the glut that often follows a harvest. Though considerable losses occur in the field, both before and during harvest, the greatest losses are noticed during storage.

- Loss in quantity :** Losses of the seed in terms of weight are quantitative losses. Insects, rodents, etc. feeds on the product causing weight loss. These weight losses are not always apparent. For example, some insects eat only the centres of grain kernels so, even though the volume of grain may appear to remain the same, there can be considerable weight loss.
- Loss in quality :** Losses of this type can be nutritional, chemical, through contamination with toxic moulds or foreign matter. Pests that selectively eat a part of the food-stuff (such as the nutritious germ of the grain) will reduce the value of the food-stuff as a whole.

Principles of storage : Most developing countries are in the tropics, often in areas of high rainfall and humidity. These conditions are ideal for the development of micro-organisms and insects which cause high levels of deterioration of crops in store. Food losses during storage are the result of biological, chemical or physical damage.

In order to reduce the amount of losses, the environment in the store needs to be controlled so as to lower the possibility of:

1. Biological damage by insects, rodents and micro-orgamsms.
2. Chemical damage through rancidity development and flavour changes, etc.
3. Physical damage through crushing, breaking, etc.

Good storage thus involves controlling the factors, like temperature, moisture, light, pests and hygiene.

i) Temperature

The temperature within a store is affected by the sun, the cooling effect of radiation from the store, outside air temperature, heat generated by the respiration of both the store material and any insect pest present.

ii) Moisture

All micro-organisms, including moulds, require moisture to survive and multiply. If the moisture content in a product that is to be stored is low, micro-organisms will be unable to grow, provided that the moisture inside the storage structure is also kept low. Moisture should therefore, be pre-vented from entering the store.

Precautions for safe storage

1. Storage facility should be far away from mustard field and it should be neat and clean.
2. Transport vehicles used in mustard production such as bollock, truck and tractor trolley etc. should be insect free before storage of mustard seeds.
3. Seeds should be sun drying in the day and in the time of evening it should be fill in the bags.
4. Packing bags used in rapeseed-mustard seed should be dried, new and insect free.
5. All cracks and wholes in roof and floor should be closed with the help of cement and flat the floor in storage house.
6. Wholes of rats should be closed with the help of cement in storage house.
7. New seed should not mix with old seeds because old seed may have affected from insects.