

How to Shell Hemp Seed

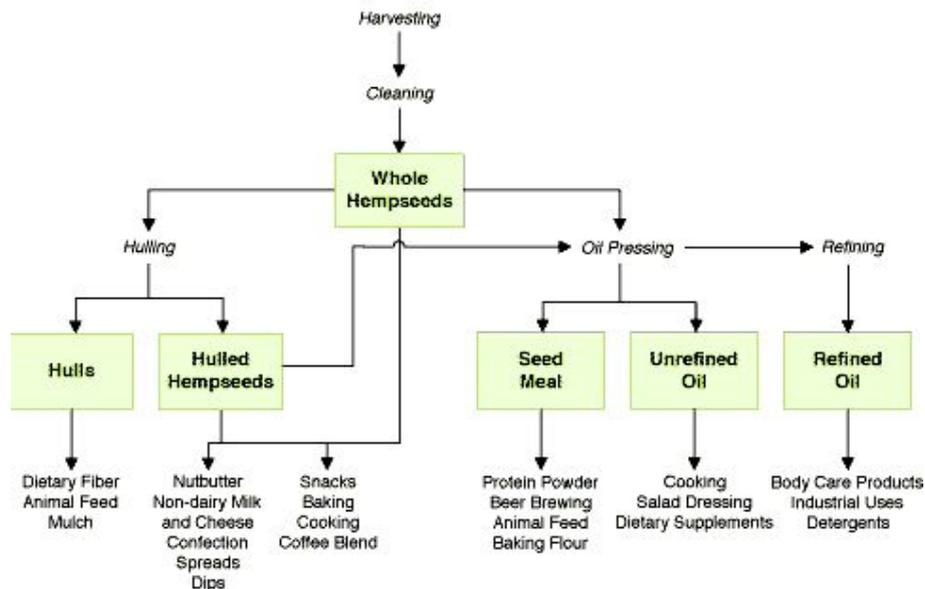
1. Hemp Introduction

Hemp belongs to Cannabis plant which can produce fiber, oil and seed. Hemp is used for many varieties of products, and it can be refined into products such as hemp seed foods, hemp oil, wax, resin, rope, cloth, pulp, paper and fuel which is made from hemp seed and stalks and the fermentation of the plant as a whole. Hemp is usually planted between March and May in the northern hemisphere, between September and November in the Southern hemisphere. It grows up in about three to four months.



As we all know, hemp comes from a variety of Cannabis, but the plant contains extremely low levels (or none at all) of THC, which is considered a drug in most countries. While, as scientific experiments show that it is not possible to use industrial hemp as a drug.

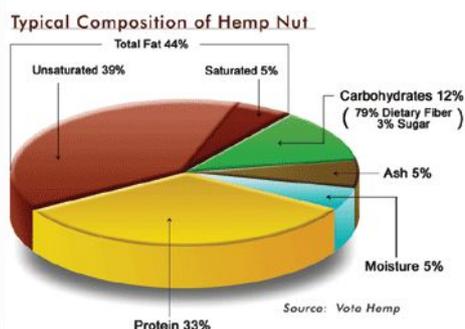
Industrial hemp production has remained legal throughout most of the world and the private sector has been free to invest in production research and processing facilities. A group of German researchers has also developed a laundry detergent and an industrial cleaner produced from hemp oil and yeast. Various sources have reported 20-25,000 different uses for industrial hemp fiber, oil and seeds. Not to be deprecating, figures such as these can be easily exaggerated or matched by other products.



The mainly producers in the world are China, South Korea and the Russia Federation. These countries has ever produce more than 70% of total world supply. China, Russia, Ukraine, Romania and the European Union are all in hemp production.

2. Overview of Hemp Seed

Hemp seeds come from the hemp plant which is known for its durable fiber. Hemp seeds are also called hemp nuts or hemp hearts and are used in varieties of products today. Hemp seed may be one of nature's most perfect foods. As research shows, hemp seed delivers 5 grams of protein in a 2 Tbsp serving, making them a great addition to vegan and vegetarian diets. Hemp seeds provide a perfect balance of omega-3 and omega-6 essential fatty acids in each serving. These fatty acids promote heart health, lower triglycerides, work to reduce inflammation, promote brain health, and support the immune system.



Hemp seeds contain more protein and energy than other foods and provides human body essential acids that we need. Four tablespoons Hemp Seeds(42 g), enough for a meal on cereal, fruit, yogurt or salad, contains:

energy	240cal
Essential fats	15g
Mono-unsaturated fat	2.7g
Saturated fat	2.1g

Hemp Seeds greatly exceed most energy bars for protein and provides a complete spectrum of vital, natural proteins. 4 Tablespoons contain:

Protein	15g
Fiber	2.5g
Carbohydrates	4.5g
Cholesterol	0

2.1 Application of Hemp Seed

Hemp Seed for Food

Hemp seeds are used in many packaged products, which can be found in health food stores. Some of these products are relatively simple to make at home, such as hemp milk and ground hemp flour. Hemp seeds which are frequently sold as a superfood, can be added to smoothies both at home and in many cafes and juice bars. They can also be used in baking and cooking though the nutritional content is at its highest in its raw state. When cooking, people can sprinkling hemp seeds over a salad, as a topping on granola, puddings or other desserts.

Hemp Seed for Extruding Oil

The hemp seeds contain about 29 to 34 percent of oil by weight. The hemp seed oil can be used both for human consumption and industrial applications. Due to the high content of polyunsaturated oils, it is fairly unstable and becomes rancid quickly unless preserved. The seed cake contains 25 to 30 percent protein and can be used in food and animal feed.

2.2 Benefits of Hemp Seed

Great source of essential fatty acids including Omega 3, 6 and GLA in the perfect balance.

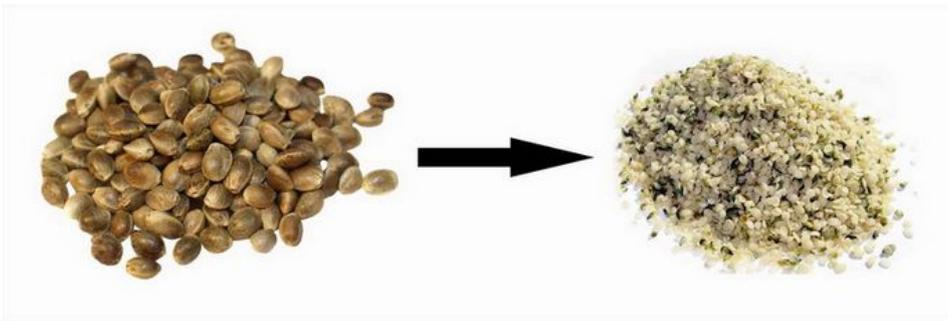
- More digestible protein than meat, whole eggs, cheese, human milk, cows milk or any other high protein food
- Rich in Vitamin E
- Hemp seed with no known allergies can be eaten by those people who are unable to tolerate nuts, gluten, lactose or sugar.

2.3. The Market of Hemp Seeds

Hemp seed products are usually sold in health food stores or through mail order. Hemp seeds can be used as a food ingredient or pressed for oil and meal. As we all know, the hemp seeds can be consumed by human , animals, and birds as hemp seeds contain 20% high-quality, digestible protein.

3. Hemp Seed Shelling Process

Whole hemp seeds have hard outer shells and are difficult to eat. Therefore, de-hulled hemp seeds are in need. There are two ways of shelling hemp seeds.



3.1 Use Hemp Seed Shelling Machine

Hemp seeds de-hulling and separating equipment consists of input hopper, spiral elevator, de-hulling & separating unit, pneumatic device for back-flowing materials, re-separator, kernels collector and electric control cabinet. It can be used to de-hulling, remove shells, separate kernels from hemp seeds. The equipment can separate the un-hulled seeds and make them go back to the de-huller for re-dehulling.

The hemp seed shelling equipment can adjust the frequency rate of de-hullers according to the variety or water content of hemp seed. The equipment adopts vibrating re-separator for seed & kernels separation works in order to reduce the kernels percentage content in seeds for second round of de-hulling.



Processes of Shelling Hemp Seeds

- **Elevating:** Pour the hemp seeds into input hopper. According to different hemp seed variety or the water content, adjust the frequency rate.
- **De-hulling & Separating:** Use the de-hulling & separating unit to shell the hemp seed. Due to the high oil content, the mixture after de-hulling inside the chamber of de-hullers will stick to the inner wall of the de-hullers easily, the special unit cleans up at any time. After de-hulling, the seeds are separate into shells and un-shelled hemp seeds and kernels.

- **Shells Discharging:** After separating, the shells flow out.
- **Re-separating:** Use the re-separator. After the shells go out, un-shelled hemp seeds and kernels are left. After re-separating, the pneumatic device make the un-shelled seeds back-flowing for de-hulling again.
- **Re-dehulling:** The back-flowing materials are de-hulling again in the equipment.

3.2 Manual Shelled Hemp Seeds

Besides the automatic hemp seed shelling machine, hemp seeds can also shelled by hand. Following are the materials that needed and the steps of shelling hemp seeds.

Materials:

- Table
- Wooden board
- Wooden mallet
- Water
- Colander

Steps of Manual Shelled Hemp Seed

- Pour the hemp seed on the table and spread them out into a single layer. Make sure they are relatively close together so more will fit beneath the board.
- Put the board on top of the hemp seeds.
- Tap the board with the wooden mallet; hit it every few inches to ensure that all of the hemp seeds are broken.
- Put the hemp seeds into water.
- Stir hemp seeds vigorously, so the shells will float to the surface of the water while the seeds sink to bottom.
- Pick out the empty hulls from the water until none remain. Crack individually the seeds that still have their shell with the mallet. Then put into the water and continue stirring until all of them are shelled.
- Pour the contents of the bucket. Pick out the freshly hulled hemp seeds.

4. Hemp Seeds Oil & Processing Steps

Hemp seed oil is a tasty oil with a green or golden color extracted from the seeds of the hemp, which is traditionally used for food and body care. Essential fats containing of hemp seed oil is 78% , greatly exceeds soy oil at 40%, canola oil at 30%, olive oil at 10% and other oils. The hemp seed oil contains omega 3 and omega 6 essential fats which may reduce cholesterol, blood pressure, coronary heart disease and stroke. Research shows that hemp oil contains omega 3 EFA components than are found in any fish and in most fish-oil supplements.



How to Extract Oil From Hemp?

Hemp seed oil can be used as an edible oil in cooking and food items, in personal care products such as soaps, shampoos and cosmetics and as a drying oil in paints, sealants, lubricants and other commercial products. With a press, you can extract hemp oil from hemp seeds by yourself.

Materials:

- Hemp seeds

- Oil press
- Large plastic container
- Small plastic container
- Glass jar with lid

Steps of Making Hemp Seed Oil:

- Prepare some dry, fresh hemp seeds. Clean seeds and remove any sticks, rocks, leaves or other debris.
- Place the small plastic container under the press to catch the expressed oil. Position another larger container to catch the pressed seeds at the end of the press.
- Pour enough hemp seeds to fill the seed hopper about 2/3 full. Crank the handle of the oil press or turn on the motor that operates the press.
- Press the hemp seeds down to keep them feeding into the oil press properly. Check the oil container. As it fills up, remove the container and pour the oil into a large glass jar. Continue feeding seeds into the hopper until all the seeds are pressed. Empty any oil remaining in the container into the bottle.
- Place a lid on the glass jar that contains the finished hemp oil. Put the jar in a warm, dark location in order to let the oil to separate from any water or other matter extracted during the pressing. Pour off the oil the next day.