

1. Processing of Black Pepper

The processing of the black pepper is considered quite simple and is mainly performed in order to protect this seasoning from contamination, besides increasing its conservation period and adding value to the products. Because it is consumed in human feeding, some hygienic cares should be taken during its harvest, processing and management in order to avoid macro and microbiological contamination.

The macrobiological contamination may be caused by the presence of stones, seeds of other vegetal, insects (alive, died, in whole or fragments) and the presence of moldy grains. The microbiological aspects that should be avoided are: the presence of *Salmonella*, fecal coliforms bacillus, aflatoxins, and residues of pesticides.



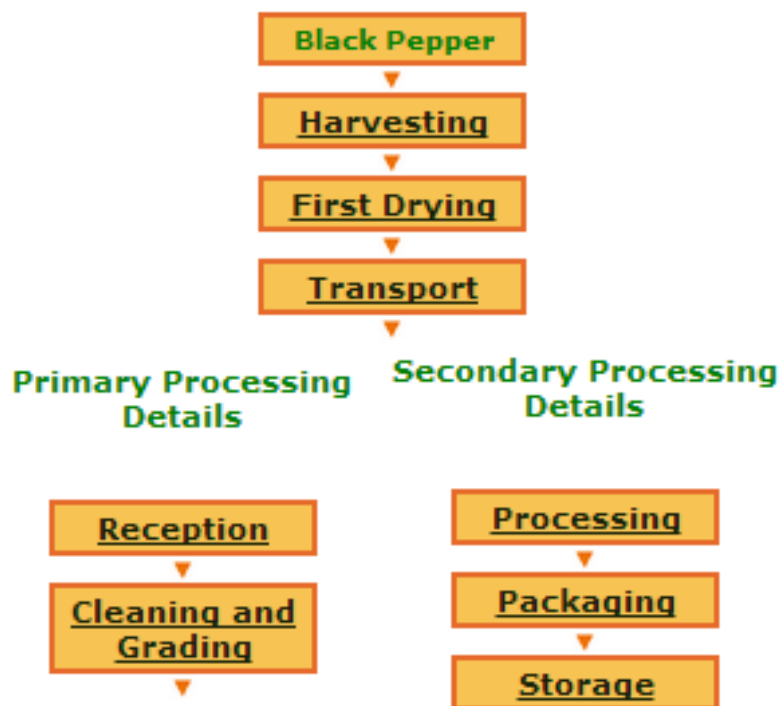
Post-harvest primary treatment is accomplished to guarantee the integrity of the grains until they arrive to the industry. The adequate harvesting and transporting processes and the first drying hampers the contamination until the raw material is processed. The primary processing involves several different processes, that are designed to sorting and removing inedible fractions from the vegetables and clean. The primary processing is responsible for the elimination of either polluted grains and polluting matters. The secondary processing is the use of the primary products (cleaned pepper) to make them interesting and add-value to the products.

Projects and small businesses may involve only one or several of the activities in the total chain, from the growing of crops through to the production of edible products. Some small businesses are set up to clean, cut and package spices.

These businesses can be successful as there is very little need for equipment. However, as with all businesses, there must be a rigorous quality control and there must be a clear demand for the product, too.

Black Pepper Processing details

Post-Harvest primary Treatment



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Harvesting

The harvesting of the black pepper should be manually accomplished. As it is known, the pepper is offered in the market under two types: black pepper and white pepper. The type one wants to produce will determine the maturation point at which the bunches should be harvested. When the objective is to prepare black pepper, the harvest should be accomplished when the fruits are completely developed and at the beginning of the maturation stage, as presenting yellowish coloration.

In India, the harvest begins on January and extends until March, and the Brazilian harvest comes soon after. In Vietnam, the harvest coincides with the India, since it extends from February to April. In Malaysia, from which the main producing region is Sarawak, the harvest is began soon after that of Vietnam and extends over the period from May to July.

First Drying

The first drying is accomplished in order to reduce the moisture content of the raw material and to darken the fruits. The decreased activity of the water within the fruits is important for their conservation during transportation, as well as until they are properly processed. After harvesting, the bunches taken to dry in boards in the sun or properly fenced terrain.

During the drying process, the dry fruits get loose from the axis of the bunches. The pepper must be revolved in order to obtain an uniform drying. Those bunches axes that are mixed with the product may be removed with a small wooden scraper. The care should be taken to avoid the pepper to become wet by the rain or condensation.



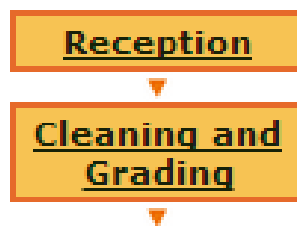
Transport

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Black Pepper Primary Processing Details

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Cleaning and Grading

The cleaning and selection of the pepper grains concomitantly occur in the same equipment. The cleaning consists of removing wood chips, leaves, rotten fruits and other impurities that might prejudice the quality of the product, and mainly stones and metal pieces that could damage the equipment. This is a very important procedure that will guarantee the quality of the product. As higher is the purity degree level of the grains as higher will be their selling value. When selecting the raw material, however, the objective is to discard those grains that are inappropriate for processing and consumption. Besides, it is possible to separate the grains with adequate size and shape in order to be sold in whole. The defective grains, can be consumed under the triturated form. The removal of the impurities, inappropriate and defective grains are possible due to the differences in mass, shapes, size and colors.

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The cleaning and selection can be accomplished by equipments consisting of vibratory sieves, ventilation systems and color-based classification.

Black Pepper Secondary Processing Details

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Processing

The process that will transform the raw material into product happens at this stage. In other words, the raw material will be transformed into dehydrated fingers or curcuma powder. See in Intact Black Pepper or Ground Black Pepper.

Packaging

The black pepper (in whole or ground) should be packed into polypropylene packaging (bags or flasks) or glass. All packaging must be hermetically sealed to avoid loss in the mass or modifications in the moisture content. Some care should be taken when removing the air from within the packaging before sealing. The vacuum packaging improves the conservation of the quality of the dehydrated pepper.



Storage

The dehydrated pepper must be stored in fresh places that are protected from the light and moisture. The light alters the color, whereas the heat reduces the life time of the product.