

# GROUND CURCUMA





## Spices Processing Toolkit



### GROUND CURCUMA

#### 1.- Ground Curcuma General Information

The powdered curcuma is an indispensable constituent of the India seasoning curry, also used in mustard paste and in foods such as meat and bread-making products, egg-based desserts, cheddar cheese, ice creams, mixtures for cakes and dehydrated soups, and others. It is also used under association with paprika in many processed cheeses and in fat-based products. As seasoning, it can still be combined with the black pepper. The seasonings are used in order to enhance or to restore some characteristics, such as color and flavor, that can be lost during the processing. In addition, the use of seasonings as conservatives in foods is greatly interesting for consumers because they present no risks to the health, even when employed at relatively high amounts.

The powder obtained from the rhizomes of curcuma is used in cookery as colorant and has the capacity to substitute the artificial colorants and aromatizing compounds, as possessing a characteristic aroma and bitter flavor.

India, a country exporting curcuma created patterns that dictate the quality of the products proceeding from curcuma. This country offers standardized products and certificates through brands marks created by the government organization for regulation of the spice exports - India Spice Board.



#### General Characteristics

The curcuma powder should be prepared by grinding dry curcuma (*Curcuma longa* L.) rhizomes.

- It should have its characteristic taste, flavor and be free from musty odor.
- It should be free from dirt, mould growth, and insect infestation.
- It should be free from any coloring matter, such as the lead chromate, preservatives and extraneous matter such the cereal or pulse, flour or any added starch.

Special characteristics						
Grade designation	Moisture percentage by weight (max.)	Total ash percentage by weight (max.)	Lead as (Pb) parts per million (max)	Starch percentage by weight (max.)	Chromate test	Acid in-soluble ash, percentage by weight (max.)
Standard	10.0	7.0	2.5	60.0	Negative	1.5

Source: Samexagency

## 2.-Ground Curcuma Processing Details

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### 2.1.-Cutting

The cut is made to adapting the raw material to the processing. The primary rhizomes should be cut into slices. This procedure is important for dehydration of the rhizomes, since it reduces the drying time, when compared to the dehydration of the whole rhizomes. To guarantee the uniformity of the moisture content, it is extremely important the slices to be the same thickness.

This operation will be accomplished, by the use of food-processing equipments.

### 2.2.-Blanching

The main objectives of the healthy blanching are:

- Elimination of air from the material tissues, therefore reducing the possibility to occur oxidation of the material during storage;
- Fixation and emphasis of the product coloration;
- Reduction of the microbial load by the elimination of vegetative cells, fungus, yeasts and inactivation of deteriorative enzymes;
- Elimination of unpleasant odors and flavors;
- Removal of mucilaginous substances.

The blanching stage usually occurs through equipments that use water or steam. The blanching equipments provided with vapor injection system directly on the product usually present lower efficiency in relation to the use of energy and requires higher investments.

The water-bath blanching basically consists in conditioning the vegetables into a basket made of aluminum or stainless steel, by submerging them into boiling water.

The blanching of the rounded curcuma lasts from 1 to 3 minutes. To blanching the fingers of the curcuma, however, it might take more time because those fingers are not sliced.

### **2.3.-Drying**

The drying of the primary rhizomes happens similarly to that of the secondary rhizomes (fingers) and may be accomplished in the sun or using the drying equipments.

When drying is accomplished in the sun, the blanched material is dispersed on trays. From time to time the rhizomes are revolved to warrant the uniformity of the process. The drying occurs slowly (10 to 15 days). When the rhizomes are appropriately dry, they become hard and brittle. The drying by direct exposure to sun is still largely practiced. However, its use is limited to those highly insolated regions with hot and dry climate.

The drying processes accomplished with air circulation dryers rather promote the drying of the rhizomes at shorter time and the mean temperature should be 65 °C.

### **2.4.-Milling**

This operation consists into grinding the slices of the dehydrated primary rhizomes.

### **2.5.-Weighting**

When grinding is concluded, the weighting is performed as well as the calculation of the production from processing, based on the mass of the powdered curcuma that was obtained by using a determined raw material mass.

### **2.6.-Packaging**

The curcuma products must be packaged into polypropylene bags or flasks or into glass flasks. All packagings must be hermetically sealed to avoid either loss of product mass or modifications into moisture content. Care should be taken when removing the air from the packaging before sealing.

The wavy cardboard boxes are recommended for secondary packaging. In these containers, it is common to introduce silica-gel that is a chemical product able to absorbing the air humidity, therefore prolonging the storage time.

### **2.7.-Storage**

The products should be stored in fresh places that are protected from both light and moisture. The light changes the color, whereas heat reduces the life time e of the product.