






TIGERNUTS FLOUR / HARINA DE CHUFAS

 Chufa

 Tigernut

 Erdmandel / Tigernuss

 Noix tigre / Souchet

 миндаль / Земляной

 Yer Bademi / Papyrus

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TIGERNUTS FLOUR PROFILE

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TIGERNUTS PLANT

1 TIGERNUTS TRADERS, S.L.

Tigernuts Traders, S.L. is a 100% Spanish Capital owned Company which was founded in 1997. Our main objective is to explore and develop the market and applications of the Tigernut (Spanish: Chufa; lat: Cyperus Esculentus), a tuber which has been traditionally cultivated in the area around Valencia (Spain). The almost unique use until this moment has been the preparation of "Horchata de Chufas", the delicious vegetable milk made from Tigernuts.

From the same moment the company was established we have invested very much in Research and Development. With the help of well known laboratories we have studied the intrinsic qualities of the Tigernut and its uses. Nowadays the initial project has grown and we sell our products to countries all over the world for use in alimentary and pharmaceutical industry, becoming Europe's main exporter of the Tigernut and its derivatives.

Tigernuts Traders, S.L. is continually investing in R+ D, to satisfy market expectations.

We can supply you with any kind of Tigernut / Chufa or its derivatives at any time of the year. **We have stock all year round, so we will always be able to meet your order!**



2 Introduction to the TIGERNUT (Chufa)

To be able to understand what "Tigernuts Flour" is made of, we should first clarify that the Tigernut is not a "nut" but a "TUBER".

This tuber was discovered more than 4000 years ago and has been cultivated ever since, in more or less quantities, depending on the local demand in a reasonably remote area along the Mediterranean coast, specifically Valencia, and some Arabic countries. Its health and nutritious values have remained the same through out the years, but only recently demand has increased tremendously, because of its values.

2.1 Brief description of the product (TIGERNUTS)

Dimensions: From 8 mm. – 16 mm, smaller sizes are not used for human consumption.



Shape: Long or round shaped. Properties however remain the same and are equally nutritious.

Colour: Brown

Cut (When eating):

- When hydrated it has a smooth tender, sweet and refreshing taste.
- When dehydrated it's slightly harder (nut texture), but with a rather more intense and concentrated taste.

Flavour: Sweet and intense.

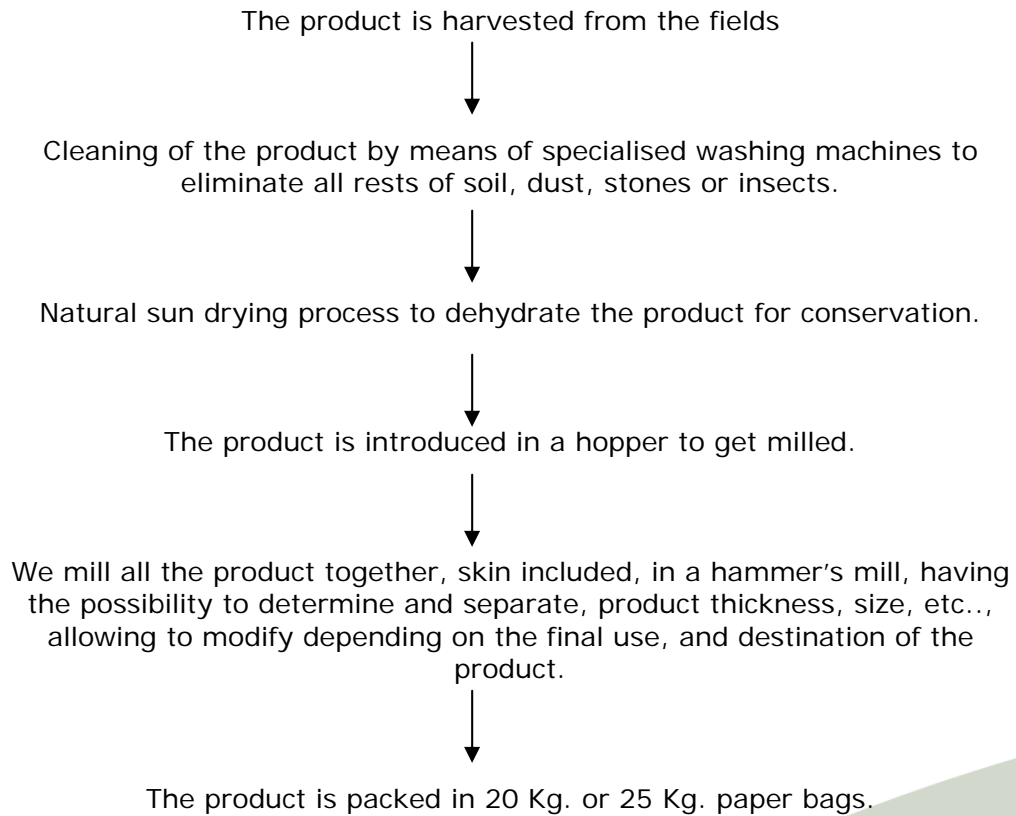
Cultivation period: From March to December

Characteristics:

- As explained before, the Tigernut is a tuber, which means it grows in the soil.
- Being cultivated through continuance irrigation, they have to be properly dried before storage. The drying process is completely natural, meaning "sun-dried", which process can take up to one month. The dehydrating process ensures a longer shelf time, prevailing rot or any other bacterial infection, securing therewith their quality and nutrition levels.
- Unfortunately, the dehydration process makes the Tigernuts skin wrinkled.

2.2 Production process of the Tigernuts flour

The production process of the Tigernuts Flour it's quite easy to explain, but in any case, we would like to show you all the steps by form of a diagram.



3 Analysis

Tigernut flour has a unique sweet taste, which we found ideal for different uses, as much that we are still continuously investigating further developments of our products. We strongly believe in the benefits of this flour for health reasons, through various analyses, it has been confirmed to be an alternative for dietetics and its gluten free. In any case a positive alternative within the use of any type of flour.

- It's a good alternative to wheat flour, as it's gluten free and good for people who can't take gluten in their diet.
- It's considered a good flour or additive for the bakery industry , as it's natural sugars contents it's really high, avoiding the necessity of adding to much extra sugar (good option for diabetics)
- The high fibre content of its raw material (Tigernuts) makes the product very healthy, as everyone needs a minimum fibre contribution each day.
- Mixed with other flour (as maize flour) could become, in the same way, very tempting and tasty.
- Furthermore, the Tigernuts Flour does not loose any of its nutritious properties in the milling process.

<i>NAME</i>	<i>RESULT</i>	<i>NAME</i>	<i>RESULT</i>
<i>Sugars</i>	21,23 %	<i>Magnesium</i>	970 mg/Kg
<i>Dietary Fiber</i>	24,13 %	<i>Potassium</i>	7100 mg/Kg
<i>Fats</i>	21,56 %	<i>Sodium</i>	120 mg/Kg
<i>Starch</i>	26,54 %		
<i>Proteins</i>	3,80 %		
<i>Calcium</i>	0,23 %	<i>Energetic value:</i>	400 Kcal/100 gr.
<i>Phosphorus</i>	0,34 %		
<i>Ashes</i>	2,03 %		
<i>Humidity</i>	4,77 %		

INFORMATIVE AVERAGE RATES

3.1 POSSIBLE BENEFICIAL PROPERTIES

1.- Because of its high INSOLUBLE FIBRE content:

Insoluble fibres are mostly found in fruit types which contain edible seeds and fruit with hard shell or skin

ADVANTAGES:

- Facilitates satiation.
- Regulates intestinal absorption and digestion.
- Stimulates chewing and gastric segregation.
- Increases the faecal volume by means of water absorption.
- Insoluble fibres tend to produce dry faeces, unless mixed or taken with pectin (soluble fibre), or by drinking plenty of water.
- In specific intestinal pathologies, like diverticulitis and cancer of rectal colon, insoluble fibres have a favourable effect.
- Insoluble fibres decrease cholesterol, glucose absorption and delays fatty acid absorption.

RECOMMENDATION:

According to the OMS report, the recommend 20/30gr, per DAY, of soluble/insoluble fibre.

2.- Due to its high POTASSIUM level:

Potassium can be found in: Milk, meat, cereals, vegetables and fruit.

ADVANTAGES:

- Potassium is the main driver for intercellular liquids, and together with sodium, participate in maintaining the normal water balance required, conservation of the osmosis, and acid balance
- Potassium, together with Calcium, is a very important regulator of Neuromuscular Activities (The amount of Potassium in the muscles is related to the muscle mass and the storage of glycogenic amino acid which is converted into glucose. As such to form muscle, one needs an adequate amount of Potassium).
- Potassium is necessary for the metabolism of Carbohydrates and Proteins.
- Potassium helps to dilate the arteries (Tests made shown that the Potassium protects the endothelial cells, which in return regulate the blood pressure. As such it protects the internal arterial walls against any damages, prevents haemorrhages and brain/heart attack.

RECOMMENDATION:

The recommended amount is 0.8 to 1.5 gr. of Potassium per 1.000 Kcal/day.

3.- Due to its high MAGNESIUM level:

Magnesium can be found in nuts, seeds, dry fruits and vegetables, milled grain cereals and green vegetables.

ADVANTAGES:

- Magnesium is the second, after Potassium, as an intercellular cation (or ion with a positive charge). It is the inverse anion.
- In adult people, one can find Magnesium levels of:
 - 60% in bones
 - 26% in muscle tissue
 - 14% in soft tissues and body liquids
- Magnesium is related to the muscular contractions and nervous impulses.
- Magnesium is a powerful inhibitor of the thin vascular blood vessels and has a positive effect on the arterial pressure.

RECOMMENDATION:

The recommended DAILY intake is 350 mg. for males and 280 mg. for females. Nevertheless, the daily increased intake of Calcium, Proteins, Vitamin D and Alcohol will increase the daily amount of Magnesium required. The same counts after physical and/or psychological stress.

FINAL CONCLUSIONS:

The Tigernuts (Cyperus Esculentus L.) flour has been proven to be an energetic and ideal food ingredient, to add directly to milk or yogurt and recommended for:

- Sports people.
- Students.
- Small children.
- Hyper tensional people.
- People with gastro-intestinal problems.
- Those people who take determined medication with relation to or for: Calcium, Vitamin D, Diuretics, Arterial Hypertension.
- Those people who take additional proteins
- In general to people who suffer physiological or physical stress.

4 Security sheet for Tigernuts Flour

Product: TIGERNUTS FLOUR

Supplier: TIGERNUTS TRADERS, S.L
Plaza País Valenciano, N° 7
46183 L'Eliaana (Valencia) SPAIN
www.tigernuts.com

Packaging: 15 Kg. boxes

Dangers Identification:

Dangers to Human Health: No dangers found during the use in normal conditions.

Dangerous Reaction: None

First Aid: Not dangerous for humans or animals.
Not important measures to be taken.

Flammable: No

Handling and Storage:

Handling: The usual cautions used with food stuff.

Storage:

- Unwrap the pallet once arrived to your warehouse.
- Keep the goods in a fresh and dry place, preferably between +5° to +10°C.
- Keep out of direct sunlight.

Toxicology: Non toxic product, suitable for human and animal consumption.

Transport: Product not dangerous for haulage.

Product shelf life: 15 months

Product characteristics:

- High content in dietary fibre, proteins and natural sugars.
- High content in E vitamin.
- Recommended to diabetics and people with intolerance to gluten or allergic to lactose.

Biodegradable product

5 Tigernuts Derivates

5.1 Horchata (Tigernuts Milk)

The “Horchata” is a vegetable milk extracted directly from the **tigernut**. It's a refreshing drink, superb as substitutive of traditional cow milk with a natural sweet taste.

The following **characteristics** make **the horchata** the perfect substitute of vegetable milk:

- Ideal milk for persons that don't tolerate gluten (celiacs) or that are allergic to cow milk and it's derivates
- Helps in reduction of LDL (“bad”) cholesterol and increases HDL (“good”) cholesterol because of its high contents of oleic acid and Vitamin E, which has an antioxidant effect on fats
- The high content of oleic acid and the enzyme arginine prevents arteriosclerosis
- Suitable for diabetic persons
- Recommended for persons with digestion disorders, flatulence and diarrheas, because of the content of digestive enzymes (lipase, catalase, amilase)
- The high content of fibre has a good effect on digestion, as it stimulates digestive juices, contributes to a longer feeling of fullness and speeds up transit in the intestinal tract and so prevents constipation
- It has a high content of minerals, phosphor, calcium, magnesium, iron and vitamins, where the content of vitamin C and E is especially considerable

5.2 Tigernuts Flour

Tigernut flour has a unique sweet taste that we have found is ideal for use in the baking industry. It can be used to make delicious cakes and biscuits and also compliments fruit flavours well.

We are producing a range of different grades of flour for use in different products.

5.3 Tigernuts Oil

This is a high quality oil extracted by a cold, virgin process in order to ensure that it retains all the unique nutritious qualities of the Tigernut itself. Tigernut oil was first used by Egyptians 4000 years ago in preference to olive oil. Indeed, it is generally considered a healthier alternative.

The oil is golden brown in colour and has a rich, nutty taste. Tigernut oil is also a fantastic component of beauty products. It has a high oleic acid content and low acidity, and so is excellent for the skin.

5.4 Skinned Tigernuts

After years of research and development, we have managed to peel the Tigernuts.

5.5 Organic Tigernuts

In the last years a spectacular increase in the production and consume of ORGANIC foods in Europe has been produced. Among them we find our product, the tiger nuts, a food that is imported from Occidental Africa, and treated, since the first time, keeping with all the requirements to be an ORGANIC product.

It's been produced an increase of demanding of ORGANIC foods in a worldwide level.

This increment is a consequence of a major concern of the citizens by the influence of the foods in their health and to be aware in view of the present environmental damage.

In Tigernuts Traders, S.L. we are sensitive to this demand for the public. Because of that, we are now offering high quality ORGANIC tiger nuts to our customers.