Specification of Longkou Fen Si

1-Name of the Product

龙口粉丝 Longkou Fen Si

2-Product Description

Vermicelli is a threadlike dry starch product that is processed with legume.

Longkou Fen Si is a threadlike dry starch product made from green beans and peas. By taking advantage of the special natural microorganism consortium, applied the traditional technique of fermentation of acidic steeping liquor, the product is delicately made by extracting high pure starch from materials through such processes as beating paste, filtering vermicelli, soaking, sun-drying or hot air drying.

Longkou Fen Si is characterized by its high starch content over 75%, water content less than 15%, ash content less than 0.5% and thread diameter less than 0.7mm. Cooking Longkou Fen Si in boiled water for 45 minutes, the ratio of broken vermicelli is less than 10%.

Longkou Fen Si is pure white in color, translucent with luster. Its treads are even in thickness without merging ones. It is flexible, elastic and free from impurities. It is soft and smooth in water.

3-Defenition of the Geographical Area

The Geographical Area of Longkou Fen Si includes the cities of Longkou, Zhaoyuan, Penglai, Laiyang and Laizhou in the administrative area of Yantai city, Shandong Province, China.

4-Proof of origin

Manufacturing enterprises of vermicelli purchase green bean and pea materials in accordance with the technical standards. Inspection personnel conduct inspections on the storage period of materials, plumpness of seeds, impurities, ratio of seeds with different color and moisture content. Qualified materials will be placed in warehouse for storage in batch. Purchased materials should conduct storage registrations in batch. Material registration will be kept for qualified materials as well.

Water used in the processing of vermicelli should come from the water sources in the protection area. No water from outside the protection area will be used.

The production process of Longkou Fen Si is a complete closed-cycle chain, during which, water soaked material beans or peas are fermented with acidic steeping liquor to extract starch dough, then the dough is gelatinized into starch paste for filtering to threads. Finally, the threads are sun-dried or hot air dried. The whole process is completed in the same plant. Products of the same type, applying same specification, from the same batch of materials and in one production cycle, belong to the same batch, sharing the batch number on the outer package.

5-Production Method

By taking advantage of the special natural microorganism consortium, applied the traditional technique of fermentation of acidic steeping liquor, the product is delicately made by extracting high pure starch from materials through such processes as making paste, filtering vermicelli, soaking, sun-drying or hot air drying.

Step One

Soaking

Soaking material: soaking the material green beans or peas to get swell. Soaking time should be adjusted based on temperature and conditions of the material: in cold water, the time for soaking should be 36-60 hours; in lukewarm water, the temperature should maintain at 20℃—40℃and soak the materials for10-40 hours.

Step Two

Precipitation and separation

Crushing the soaked material, removing the skin and residues and adding fermented acidic steeping liquor by proportion so as to get precipitated starch paste. in order to guarantee the ductility and color of Vermicelli, black starch should be removed completely

Step Three

Beating paste

Mixing an amount of paste and water, injecting steam to make the mixture gelatinized, stir it well until it shows a translucent form and a light blue color.

Step Four

Filtering vermicelli

Putting the gelatinized dough in a filter pot to get vermicelli, controlling the length. Cooling the cooked vermicelli, and lift it up, then place it folded and cooling it again for 8-10 hours so as to facilitate the heat inside vermicelli to emit, and keep it thoroughly cool. Steeping liquor should be used reasonably and make sure vermicelli should absorb the liquor completely at every stage after taking shape.

Step Five

Sun-drying or hot air drying

(1) Sun drying: dry vermicelli in a dry day with a moderate wind (generally at 3-4 level), low air humidity and abundant sunlight to ensure it is thoroughly dry at a time. The vermicelli should not be exposed to sunlight more than twice. In order to make the vermicelli does not get in tangle or polluted and has strong flexibility and a bright color, drying should not be conducted in weather conditions such there is strong wind, no wind or it is very humid. The diameter of dried vermicelli should be within 0.7 mm. During the process from filtering to drying, vermicelli should not touch the ground. Dried vermicelli should be stored in specialized warehouses for grading and binding. The storage base should be carefully treated to ensure it is ventilated well and damp proof. The relative humidity inside the warehouse should remain at around 60%.

(2) Hot air drying: sun drying is a traditional process, while hot air drying is a modified process imitating the basic conditions of sun

drying. It deploys hot air dryer to dry vermicelli.

Step Six

Packing

Packing dried vermicelli based on client requirements.

6-Link to the Geographical Area

1. Geographical Area

The protection area is located in the north of Shandong Peninsula, covering Longkou City, Zhaoyuan City, Penglai City, Laiyang City and Laizhou City, within the administrative region of Yantai City of Shandong Province in China. Yellow River and Jie River run across the area and the water quality is good. The region is typically a warm continental monsoon region with a semi-humid climate. It has four distinct seasons, moderate wind, suitable temperatures, low air humidity, long daylight hours and a unique microbial system.

2. Natural factors

(1) Water quality. Controling the quality of starch is of great importance in the production of vermicelli. The primary method to produce starch is as following: after crushing soaked green bean or pea into pulp, removing the skin residue, starch becomes condensed under the action of streptococcus lactis. Then extract the starch by drying. This technique is referred to as the method of fermentation of acidic steeping liquor. In this process, streptococcus lactis plays an essential role, while water quality is a

key element in the growth and reproduction of streptococcus lactis. Water that is free from pollution and odor, fresh tasting, not stringent and rich in minerals is commonly called sweet water. The existence of metal particles and inorganic salts in the sweet water has a great impact on the growth and reproduction of beneficial microorganisms and the enzymes they produce. Therefore, the condensation and retention of starch and its quality will be influenced. Polluted water or water with an excessively high or low PH value or too many chlorine ions or sulfate ions will continuously inhibit the growth and reproduction of microorganisms, and it may cause the microorganisms to produce clusterin, thus lose their function of condensing the starch. Therefore, water quality has a great impact on the output rate of starch and the quality of vermicelli. It is commonly said that processing vermicelli is just like gaining silver from the water. The same craftsman with the same techniques, can produce high quality vermicelli in the production area of Longkou Fen Si, but he can not get vermicelli of similar quality in other areas and even cannot extract starch in some areas. This clearly shows the influence of water quality on Longkou Fen Si. There are many mountains and hills in the region of Yantai. Water in the rivers in the area comes from mountain springs. They are free from pollution with a PH value of 6.9-7.4 and a low content of chloride ion and sulfate ion. The water here is suitable for extracting starch from green beans and peas with the method of fermentation of acidic steeping liquor and conducive to the high starch content in Longkou Fen Si.

(2) Climate and geographical environment. Another key factor that can have great impact on the quality of Longkou Fen Si is drying. The production of Longkou Fen Si can be divided into two periods: spring and autumn. The spring production period starts from the

Spring Equinox to the Summer Solstice, while the autumn production period lasts from the White Dew to the Heavy Snow, altogether six months. Vermicelli produced during the periods from the Grain Rain to the beginning of summer and from the Autumnal Equinox to the beginning of winter are the best. The quality of vermicelli produced at other times is inferior to those produced in spring and autumn. This is mainly because that the temperature is too low in winter, so it is difficult for the streptococcus lactis to reproduce in fermentation. Vermicelli dries too slowly or even becomes frozen, which has a great influence on the quality of vermicelli. While during summer, the temperature is too high, it is hard to control the contamination of other bacteria in fermentation. Another thing is that there is too much rain, little wind and too strong sunlight when drying. All the factors combined result in the inferior quality of vermicelli. The suitable temperature in the production area of Longkou Fen Si is favorable to the reproduction of streptococcus lactis. And the suitable wind force and humidity will contribute to the drying process.

With the improvements of techniques, hot air drying gradually substitutes the traditional process of sun drying. It is a modified process imitating the basic conditions of sun drying. At present, both sun drying and hot air drying are adopted in the production of Longkou Fen Si.

3. Elements in the human dimension

It is proved that, as early as in the Northern Wei period, people in Zhaoyuan had mastered the techniques to produce starch and started to produce ordinary vermicelli over 300 years ago in the Song Dynasty.

In the 19th century, workshops that produced vermicelli made from green beans were established in the present Beilizhuang Village of Zhangxing Town in Zhaoyuan City, which are the oldest vermicelli workshops preserved today.

In 1860, Hongtai Vermicelli Shop was founded in Hongkong to purchase vermicelli produced in Zhaoyuan and shipped them from Longkou. The characters of 'Longkou Fen Si' were labeled on the outer packages, so the product got its name Longkou Fen Si since then.

In 1862, the Qing government established the East Customs at Yantai with a sub customs at Longkou, which highly promoted the transportation and sales of Longkou Fen Si. Longkou Port was opened for external trade in January, 1914. Since then, people in Zhaoyuan established vermicelli shops one after another in Longkou , stimulating the export of Longkou Fen Si. Therefore, Longkou Fen Si enjoys a reputation both at home and abroad.

Due to its long standing reputation, the foreign trade departments in Shandong Province have been following the name Longkou Fen Si in export.

7- Inspection Body

Yantai Bureau of Quality and Technology Supervision of Shandong Province

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Tel: +86-511-6089143

8-Labelling

The product label of Longkou Fen Si should include the following information:

Product Name: Longkou Fen Si

Name of the manufacturer and its address

Trademark

Package specification

Date of production and shelf life

Ingredients

Batch number

9-Local Legislative Requirements

Document of the People's Government of Yantai City, No. 25 issued by the People's Government of Yantai, "Interim Measures for the Protection and Administration of PGI of Longkou Fen Si of Yantai.

National Standard of the People's Republic of China GB/T19048-2008 Geographical Indication Product Longkou Fen Si