Jade rice flour production technology

Starch is the most important storage polysaccharide in grain grains. It is the main source of food heat energy required by the human body and an important raw material for light industry and food industry. In the manufacture of starch in the industry, most of the corn is used as raw material. It has the advantages of processing without season restrictions, and can obtain raw materials all year round, which is convenient for comprehensive utilization. Corn is a high-yield crop, and the grain is rich in starch.

Today, the production of corn starch adopts the microwave drying mechanical technology extraction process, that is, after the raw materials are immersed and pulverized and milled, various soluble and insoluble components are removed from the tissue structure of the corn kernel and the cell tissue of the starch. Extract the purest starch as possible at the highest rate.

Process flow

The corn starch production equipment basically uses the microwave drying method. The main points of this process are:

1. Take the hot loop process. That is to say, the washing water in the production process needs to be heated to 40 ~ 45 ° C, the system temperature is maintained at 30 ~ 40 ° C, and the process water discharged from the production process is recycled to the production and the dry matter is recovered to the maximum extent.

2. Adopt the countercurrent treatment process. During the whole production process, the new water is added from the last stage, and the new material is added from the first stage to maintain the maximum concentration difference, so that the extraction and washing are more complete.

3. Impregnate the corn with sulfurous acid.

4. The temperature of the production process should not be too high. Because the corn has easy gelatinization properties, the material can not be directly heated, and the washing water heating should be strictly controlled below 48 ° C.

5. Take continuous and balanced production as much as possible.

Main process

Raw corn is the main raw material for the production of starch, and its quality is very important. White horse tooth corn is the best raw material because of its high starch content, and the small yellow grain is the most. The moisture of corn should not exceed 15 intestines, the total amount of impurities is less than 3 intestines, and the germination rate is not lower than “intestinal. The corn raw materials entering the plant are first cleaned and removed to remove dander, impurities, and grains, and stored in the warehouse. It needs to be purified again before processing, and it will be put into the spare silo for use.

The number of impregnation tanks is generally a group of eight, countercurrent circulation. The amount of charge per tank is 10 tons, 20 tons, 30 tons, 60 tons. The specific amount should be determined according to the production scale and production cycle. The impregnation liquid is sulfurous acid, which can be prepared by using clarified water and sulfur. The immersion temperature is 850 kg per ton; the immersion temperature is 4 8~ 52 ° C; the immersion time varies from corn variety to 54 hours. The sulphurous acid solution enters the inside of the grain through the semi-permeable seed coat, disperses and destroys the protein in the grain cells, and promotes the release of the starch. The sulfite can purify the germ and change the seed coat from semi-infiltration to full penetration, enabling soluble substances. Dissolve in the soaking solution faster. Sulfite also has an antiseptic effect.

Milling screens include coarse crushing, degerming, fine grinding, sieving and fiber washing.

Coarse crushing: After dipping, the jade is first crushed by sand remover and then broken. The crushing equipment is generally a disc-type disc crusher, which is broken twice to better free the embryo. When the coarse crushing, the material is controlled at about 3 ?. De-embryo: Germ separation is required after each crushing.

Starch refining separates insoluble proteins and residual soluble proteins. The separation method is mostly a method of washing and using a starch separator and a cyclone, and all of them are separated and washed by a centrifuge. The former is better than the latter.

In some cases, a preconcentrator is added, and an intermediate concentration separator is added in the middle. In the starch refining process, the concentration of 6 to 7 starch milk is generally separated into the water by a starch separator, and the starch is continuously separated by a separator or a spinning machine. The flow is washed countercurrently until the required quality standard is reached and new water is added from the last stage.

Refined starch has a milk concentration of up to 2O B e and can be used directly as a raw material for the joint product [glucose, etc.). If it is stored or transported, it needs to be dehydrated and dried. The dewatering equipment is centrifugal dewatering machine. Drying is generally carried out by airflow drying corn starch wet grinding method. In addition to different grades of corn starch, a certain amount of by-products can be obtained. : Corn syrup, corn slag, corn oil and protein powder.