

## **APPLICATION OF CRUSHERS IN THE FOOD INDUSTRY**

Crushing is important process in the food industry. The crusher was originally intended for grinding brown coal and peat, but later its wide application was found in other areas of activity.

Crushing of materials improves the conditions for their mixing and transportation. During crushing, the surface of the material increases, it intensifies the thermal, mass-exchange and biochemical processes with further processing.

The crushing process is used in the processing and receiving of food products in the cereals production for crushing grain into flour; fermentation – for crushing barley, malt, potatoes; confectionery – for crushing cocoa-grains, sugar, fatty semi-finished products; meat processing – for crushing blowing, bones; in sugar – for grinding beets, canning, baking and other manufactures.

The degree of crushing depends on the structure of the material and the degree of crushing. The main types of crushers used in the food industry are:

1) roll crusher grinds the material by crushing between two working surfaces, for which the most often used is a pair of rollers rotating towards each other;

2) hammer mill crusher is used in the food industry for crushing grain, malt, potatoes. While rotating a shaft, the material is repeatedly hammered, crushed, passed through the sieve and discharged;

3) the toothed crusher is used in the canning industry for crushing fruits and tomatoes.

Hammer mill crushers are the main crushers in the feed industry. Such crushers process almost 95 percent of all grain in the world. To accelerate this process, pneumatic devices are applied.

The material intended for crushing is sucked by the pneumatic system from the drain and is directed along a flexible hose, through the magnetic catch on the front cover, into the hammer chamber.

In the hammers chamber the material is crushed under the impact of quick-turning hammers.

The crushed material, after passing through a sieve, enters the fan chamber and is thrown into the exhaust pipe, from the exhaust pipe the crushed material is transferred to the mixer of the feed by the pneumatic system [1].

So grinding is a very important process that is widely used in many industries and is irreplaceable in food technology. First of all, it allows to intensify all subsequent stages of processing, which greatly affects the cost of energy.

## **REFERENCES**

1. Скріпников Ю.Г. Устаткування підприємств по зберіганню і переробці плодів і овочів / Ю.Г. Скріпников, Е.С. Гореньков. – М. : Колос, 1993. – 336 с.