

GRAPE SEED SEPARATION AND DRYING

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Following the primary processing of grapes, in the Republic of Moldova are obtained annually 2.0-2.5 thousand tons of grape seeds. Depending on the variety and region of grape cultivation, the seed oil content (calculated on the dry matter) varies from 9.5% to 20.0%. So, from 190 to 512 tons of grape seed oil can be produced, which is demanded on the western market at a price of about \$ 50 / kg. According to the scientific literature, red varieties contain 9% less oil than white varieties. The seed content in a ton of grapes is up to 7% of the mass.

1. Separation of grape seeds. In order to be separated from the impurities, the grape seeds were subjected to the process of pneumatic separation, to be subsequently subjected to the drying process.

Pneumatic separation occurs due to the difference in mass between the grape seeds and the waste found among them. In order to separate them, it is necessary to keep the grape seeds in a suspended layer at a constant speed. In order to be able to perform pneumatic separation for a wider range of seed products, it is necessary to apply a series of floating speed values.

2. Drying of grape seeds. The basic objective of the drying process is to reduce the humidity of the seed mass to the equilibrium or critical mass, where it can be stored for a long time, without loss. In order to ensure the quality of the heat treatment of grape seeds, it is necessary to apply the method of drying in a suspended layer (fig. 1). The given method involves the entrainment of the seeds in a suspended layer, in a tube, by an air current, in which a speed of 11.4 m / s develops, with a flow of 430 m³ / h. Step two requires starting the 600W microwave generator at 2450MHz. Later after a time of 70min. the seeds are separated from the suspended layer, they have the lowest mass and moisture concentration, after which they are followed by the rest of the seeds, the mass independence and the moisture content for each seed. Thus we obtain a product with a high degree of uniformity of drying.

3. Environmental regulations

Among the environmental regulations that must be observed in the technological process of separation and drying in a suspended layer of grape seeds, the following points must be observed:

- shielding the microwave application area in the drying plant;
- limiting the direct air contact of grape seeds after the drying process;
- insulating the connections of the electric cables;
- grounding of the drying plant during the technological process.

Keywords: *grape seed, drying, pneumatic separation, air speed*

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