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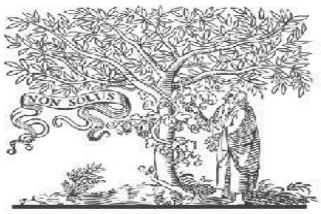

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Paper Authors
N.Z.SHaripov[1], K.KH.Gafurov[2], M.S.Mizomov[3]

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SOYA SEEDS FROM THE PEEL SEPERATING OF LOCAL GROWING

N.Z.SHaripov[1], K.KH.Gafurov[2], M.S.Mizomov[3]

[1,2,3]Bukhara Engineering Technological Institute

Abstract. The process of sowing soybean seeds grown locally and the factors influencing the optimal organization of the process of sorghum separation were determined experimentally.

Keywords. local soybean seed, bite, separation, scales, factor, blade, frequency of rotation, angle of inclination, humidity

I. Introduction.

Humidity, slope deflection, and the frequency of rotation of the electric motor were taken as the main factors influencing the optimal mode of the ignition process.

Within the framework of the localization program 19,2 mln. It was found out that 7,3 thousand tons of soybean flour and protein isolate were imported. As a result, 11,4 mln dollars of import substitution. From the above data, it is clear that the processing of soybean seeds will make a huge contribution to the development of our country. In addition to being profitable, soybean seeds have many beneficial properties. Let's look at some of the properties of oilseeds. 1 kg of soybean seeds contains 173 g of oil and the following minerals: sodium-440 mg, potassium-160 mg, calcium-3480 mg, magnesium-1910 mg, phosphorus-5100 mg, iron-3950 mg. They also contain manganese and cobalt, which are necessary for the biologically complete nutrition of animals.

Modern technologies of production of vegetable oils are based on the influence of various processes on oily raw materials. Among these processes, mechanical processes play an important role. Purification of seed kernels from foreign impurities in mechanical processes in oil production; crushing the seeds and separating the core from the husk; crushing of core and intermediate products, etc. Diffusion and heat diffusion processes also play an important role in oil production technology, including condensation of seeds by moisture; moisture and heat treatment of crushed kernels; extraction into organic solvents, evaporation of
the solvent from missella and shrot, and other processes can be demonstrated.

From the above data, it can be seen that finding the optimal size of the seed crushing level has a positive effect on the quality separation of the crushed seed, improving the quality and quantity of the oil produced.

Factors influencing the process of biting soybeans grown locally were studied experimentally. An experimental plan is first developed to identify the factors influencing this process. All input parameters of the process and system are considered to plan the experiment. Input parameters can be the amount of raw material to be crushed, the initial moisture content of the raw material, the size of the raw material, the energy supplied, the frequency of cycles, air consumption.

But it is difficult to measure and detect changes in some of them. Therefore, the initial size of the material, the amount of raw material, the energy provided, the air consumption for separation can be left at a certain value. By comparing the results of experiments conducted in the physical and mathematical model, the optimal values for the process of separation of raw materials from the shell are found precisely on the basis of finding options that correspond to the results of the physical model. Based on these values, a three-factor experiment can be deduced. Factors influencing the three processes were: product moisture, the angle of inclination of the blades, and the frequency of rotation of the electric motor. More than two-level

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№	Influencing factors	Small border	High border
1	Frequency of rotations	750 rot/ min	1500 rot/ min
2	The angle of inclination of the blade	45^0	60^0
3	Humidity	12%	30 %

experiments were performed for the initial analysis.

The moisture content of the crushed soybean seeds is the limit of the factors between the frequency of rotation of the working body of the device and the angle of inclination of the cutting blade.

Table 1.

Optimal change criteria for processing soybeans grown locally were determined based on the recommendations. Now let's define their output parameters from the device. To do this, we accept the following designations.

Y_1-The addition of crushed particles to the shell by air flow

Y_2- Unripe seeds

Y_3- The performance of the device

A three-factor (three-equation) experimental plan №2 was selected for this case.

A combination of influencing factors

Table 2.

Identification of factors					
Factors	High levels x^+	Lower levels x^-	Focal	Interval phase λ	The natural dependence of the defined variables
x_1	1500	750	1125	750	$(x_1-1125)/7$
					50
x_2	60	45	52,5	15	$(x_2-52,5)/15$
x_3	12	22	17	10	$(x_3-17)/10$

Experiments on physical models

Experiments were performed on physical models based on Table 2.

Factors influencing the process have been tested and the input parameters are as follows:

1) frequency of rotations;

2) the angle of inclination of the blade;

3) time taken to dry the material.

The "Golden Crown" variety of soybean grown locally was selected for the experiment. 1000 g of sample was weighed on SF-400 scales. The upper measuring limit of this scale is 7000 g, the error is 0.1 g. Conditionally, using sieves, they were divided into three dimensions, the dimensions and proportions of which were divided into classes as follows:

Distribution and share of "Golden Crown" soybean seeds grown locally

Table 3.

№	Species	Measurably, mm	Mass, gr	Percentage of total mass , %	Explanation
1	Great	8x6	426	42.6	
2	Average	6x4	550	55	
3	Smaller	4.5x3.5	24	2.4	45% of small-sized seeds are unformed raw seeds.
4	Different amounts of waste in the mixture		26	2.5	

The moisture content of the three-dimensional seeds was determined by soaking them in water for 15 and 30 minutes using the material balance formula. During this time, the following moisture was detected from the seeds.

Changes in humidity of soybean seeds over time

Table 4.

№	Species	Initial humidity, %	While 15 minutes humidity,	While 30 minutes humidity,

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			%	%
1	Great	12	30	34
2	Average	12	26	30
3	Smaller	12	19	25

According to the literature, high humidity provides a high degree of deformation of the seeds, which in turn leads to a decrease in the quality of the bite and an increase in energy consumption for the bite. The forces expended to bite each of the obtained samples were determined using a WP 300 tester. The forces expended for the lightning are as follows.

Distribution of forces required to bite selected samples

Table 5.

№	**Species**	Initial humidity, 12 %	While 15 minutes humidity, 1. 30 % 2. 26 % 3. 19 %	While 30 minutes humidity, % 1. 34 % 2. 30 % 3. 25 %
The forces exerted for lightning are measured at N,				
1	Great	271	331	338
2	Average	289	342	358
3	Smaller	349	362	367

In conclusion, although the obtained samples were ground in a prepared grinding device. The selected grinder has a capacity of 2 kW. The rotational frequency of the grinder is performed using a frequency converter. Using the a frequency converter, the speed of rotation of the electric motor is changed in the range of 750-1500 rot/m. During the experiment, the indicators of this regime were checked and monitored. The change in humidity of the product is in the range of 10-30%.

Samples taken from the experimental device are loaded into the crushing device. Crushed debris is classified using airflow. Through this experiment, it is possible to determine the optimal values for the process of biting soybeans grown locally.

Through this experiment, it is possible to determine the optimal values for the process of biting soybeans grown locally.

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