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THE BASIC PERFORMANCE'S MEASURES OF THE ATMOSPHERIC DRYING SET

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High humidity wastes livestock and poultry farms (45~ 80%) is the main obstacle to the use of this fuel for energy. The development of new high-tech materials such drying would help to better realize the potential of biomass and as a result, reduce dependence of Ukraine's economy from imported Russian gas.

The main by reducing drying time and increase the efficiency of this process is the use of alternative methods, including the use of natural convection in the dryer atmospheric type.

Brought to the surface of the material in the dryer radiative heat flux evaporation spent on heating the air in the drying channel and a glass layer fence. Heat and mass-transfer from material to air in the dryer can be performed both natural and forced convection.

The volume of air in the channel significantly limited because heat and mass-transfer will occur when forced movement of the air inlet and outlet of the dryer takes place. Since drying channel is a short cone-angle 60^o, heat and mass-transfer r process egarded as the longitudinal flow around the plate with an average speed in the diffuser. f

Consider the process of drying material with density $\rho_м$ = 800 kg / m^2 thick layer $\delta_м$ = 0.1 m and U_0 = 3 kg w / kg dm in such settings of coolant: t_1 = 20 0C, .d_l = 10 g / kg da and free convection. As a result, the calculation yields:

material temperature 36.6943; ^{0}C

fence temperature 23.4071 0C;

final moisture content of the material Uk = 1 kg / kg

amount of evaporated moisture M = 0.2248 kg / m^2 h;

speed drying N = 2,8098 10-3 (kg. w/ kg d m) / m^2 h

Time of drying material is 711.8 hours or 30 days.

Results of calculation the impact velocity of air in the drying section incoming channel parameters atmospheric drying with an average temperature in July $t_1 = 20\ ^0C$ given in the table.

As the table shows, reducing speed leads to an increase in temperature of the material and fences. In addition, increasing the temperature at the outlet of the dryer. But the drying time increases slightly, indicating the possibility of using atmospheric drying method.