

**INFLUENCE OF TEMPERATURE AND MOISTURE GRADIENT IN INTERPHASE MOISTURE**

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**ABSTRACT**

It is known that for different masses of the capacious materials the temperature gradient influences on the humidity one. Does this conformity take place with identical masses of the capacious materials?

An answer to these questions is in our scientific research with the elementary layers of grain. These data can be used for the improvement of grain drying technology. Experimental research is done to establish the features of cross-coupling of temperature ( $\nabla T$ ) and humidity ( $\nabla W$ ) gradients of the convectional moisture exchange of the gases and an elementary layer of grain of different temperatures for the parameters of the phase environments close to productive ones.

The influence of the temperature gradient on the humidity gradient is not set experimentally (picture.1).

A direct dependence of the intensity of the interphase humidity exchange is set from the temperatures of these phase environments (1) :

$$\delta W / \delta t = a \cdot (t - \Theta) + \epsilon, \quad (1)$$

where ( $a$ ) – a coefficient of the proportion that takes into account the humidity and sizes of grain, and  $b$  – a difference of the temperatures of the phase environments.

In cases of the same temperature and humidity gradients the intensity of the humidity exchange between the corn layers of different humidity grows. To our opinion, it should be added to the increase of the power state of the grain layers, terms of an exception of the phenomenn of the humidity condensation, identical to the humidity gradient for all layers within the limits of grain and both interactive layers of grain.

**Conclusions:**

1. Research is not set the phenomena of the warm - humid diffusion for the interphase co-operation of the elementary layer of grain at different temperature and humidity gradients;
2. The dependence of the intensity of the convectional humidity exchange from the power state, humidity of the phase environments and different temperature gradients is set.

**KEY WORDS** : drying, warmth, humidity, gases.

**Indicate type of presentation:**    Oral    Poster