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"EUROINVENT"

Technical University of Moldova,  
Department Mechanical Engineering

## DRYING INSTALLATION FOR GRANULAR PRODUCTS IN THE SUSPENSION LAYER

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### Scope:

It consists in applying a new suspension layer drying method for wet granular products with microwave application, and optimizing the thermal treatment time of the product particles.

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### Solution:

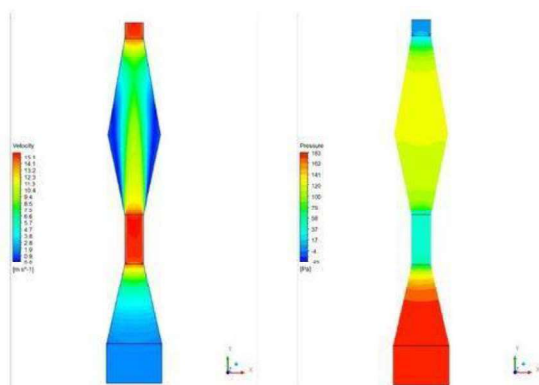
Application of the in „suspended layer“ drying method of granular products, which allows the selective evacuation of the already dried seeds particles from the microwave heat treatment area.

### Advantages:

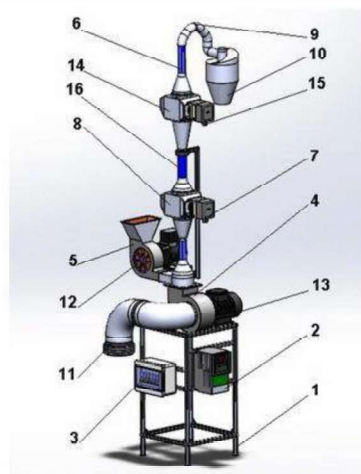
- Simple construction;
- Reduction of energy consumption by applying a new drying method;
- Optimization of the drying time at relatively low temperatures of the granular products by applying the internal heat source;
- Increase the quality of the final product;
- Creating new jobs;
- Increasing the export of autochthonous production.

### Stage:

3D computerized model;  
Functional prototype.



2D and 3D simulation of airflow behavior  
in the aerodynamic tube



Drying installation for granular products in the suspension layer  
(3D model)

Description of the invention: Installation carcase 1 and a tube 6 composed of the upper area A, the middle areas B and C, and the lower area D. The control panel 3 is fixed on the carcase, which allows to start up and control the inverter 2, the fan 4 which sucks air through the filter 11 being driven by the motor 13, the lock 5 which is activated by the motor 12 and the magnetons 7 and 15. The fan 4 continues with the tube 6, to which the lock 5 is connected, to charge the product. Also on the tube 6 are mounted the reflectors 8 and 14, in which the magnetron 7 and 15 are incorporated. The passage of the product from zone C to zone B is provided by channel 16. At the top of tube 6 is mounted the outlet pipe 9 of the product, and the cyclone 10.