



ODESSA NATIONAL ACADEMY OF FOOD TECHNOLOGIES

RECUPERATIVE GRAIN DRYER

The purpose and scope of application

The technical idea of the plant construction is that the address energy delivery to the grain flow is carried out by the two-phase evaporative-condensation system. Evaporators are heated by flue gases (or any other source of energy), and the capacitors transmit the energy to the grain flow. Air acts as a medium only, it takes moisture from the grain. The absence of direct contact between the grain and the flue gases guarantees the production of a safe product. Low air consumption minimizes energy loss with the spent heat carrier, that is the high energy efficiency of the dryer.

Important parameters that characterize the level of scientific results

The energy of the fuel is transformed into the energy of the combustion products, in the evaporator 1 they are transformed into the energy of water vapor. The latter along the steam line 2 is fed into the condenser 3, which is made in the form of a bundle of tubes. The grain moves along the pipes in which the steam condenses and the condensate through the pipeline 4 returns to the evaporator 1. The design of the condenser promotes efficient mixing of the grain flow.

The energy of evaporation from the grain is used to heat the grain before drying.

The efficiency of the dryer reaches 80 ... 85%

Intellectual Property Protection Status

One patent were obtained.

Market demand

The production of wheat in Ukraine arrives at to 26,5 million ton, that is why grain dryers are claimed for the enterprises of Agroindustrial Complex.

Status of development

The operating pre-production model of setting is made.

