PECULIARITIES OF PLANT WASTE THAT PREVENT THE PRODUCTION OF HIGH-QUALITY FUEL BRIQUETTES

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The production of briquettes by pressing crushed wood particles was a fundamentally new stage in increasing heat capacity. Briquetting (from the French briguette – a small brick)is the process of processing material into pieces of geometrically correct and uniform shape of almost the same weight.

Briquettes are characterized by high burning efficiency, ease of use and high specific energy intensity compared to traditional firewood. The peculiarity of briquettes is due to the fact that their production coincided with the appearance of cheap computer technology, which led to a revolution in small (autonomous heating systems of individual houses) and medium (municipal boiler houses) energy.

As a result, the sector of energy carriers based on vegetable waste is keeping pace with the times. Inexpensive computer equipment not only controls the combustion process itself, dosing the components with the help of information received from sensors, but also changes the temperature in the premises of the house according to a given program.

Thus, with the appearance of briquettes, we can talk about a revolution in the creation of a «smart house». The second name of fuel briquettes is "dry fuel", because the moisture content of the briquettes is reduced to 10 %.

Due to hygroscopicity, briquettes must be stored only in sealed packaging. If the packaging is slightly disturbed, each briquette is a good absorber (sorbent) of water vapor.

Conditions are created for the development of mold and fungi, which quickly spread. During combustion, a significant amount of heat is spent on the evaporation of moisture, which reduces the heat of fuel combustion and complicates the process of its ignition.

So, for example, only an increase in humidity from 30 % to 40 % leads to a decrease in the heat of combustion by 17 %. And with a humidity above 60 %, it is impossible to talk about biomass as a fuel at all, since its potential heat is not enough, even for the evaporation of its moisture.