

UTILIZATION OF FLAX PRODUCTION WASTES AS FUEL

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One of the main industrial crops in Belarus is flax. The share of the republic in the production of flax in the CIS is about 30 %, on the European continent – 16 % and almost 9 % of its world production.

In terms of production of flax fiber, Belarus is among the top five countries in the world out of 26 producing it. Flax primary processing enterprises in the Republic of Belarus are represented by 36 flax mills that carry out primary processing of flax straw, production and sale of flax fiber.

During the mechanical processing of raw materials on machines, production waste is generated, namely, shove, which is the woody part of the stems of flax. The shove is 65–70 % of the mass of the flax stem. In appearance, it resembles a thin needle dead wood, up to three centimeters long. More than half of the flax shove is pure cellulose.

The analysis of the chemical composition, as well as the calorific value, makes it possible to substantiate the possibility of using this flax production waste as a fuel.

The disadvantage of burning flax shove is its low density, which increases the cost of transportation and storage. Therefore, studies have been carried out about the possibility of pressing both pure flax shove and with the addition of peat.

The mechanical process of pressing the feedstock was carried out on a PSU-125 press in a special mold consisting of a cylindrical matrix and a stamp. Before pressing, the raw material was weighed. Next, the mass and thickness of the obtained fuel briquettes were determined, and their density was determined by calculation. When pressed, the density increases by 3–4 times.

The use of waste of flax production in the fuel balance of enterprises will make it possible to save fuel and energy resources and reduce the cost of production by reducing energy costs.