

BIOPELLET PRODUCTION FROM WASTE MATERIALS OF THE SUNFLOWER IS A MAJOR INDUSTRIAL PLANT

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ABSTRACT

Sunflower is the most important industrial plant with oil content and consumption percent in Turkey. The highest production of sunflower with 44% is made in Thrace and a large content of waste materials (core-shell, sunflower bat etc.) are obtained after harvest and processing. These materials have alternative assessment opportunities. Untreated agricultural waste is generally used for heating directly. However, this method is not economical, efficient and suitable for environmental point. Harmful gases such as CO₂ release during the combustion process occur. These waste materials leave to the field and return to the land again because of the difficulties and the lack of economic benefits with usage of heating material. However, it is possible that the waste materials can be converted into heating material, biopellet, is not harmful and has higher energy value. Biopellet is important heating material for farmer and sunflower oil industry. Farmers have a large amount of waste after sunflower harvest. Besides, high content of core-shell and solid material also get to stay in oil factories and cooperatives. Sunflower oil industry only annually produces 800 000 tons of solid waste in Turkey as a byproduct. Failure in evaluation of sunflower waste materials is too big to ignore is a serious economical loss. There are various studies about converting the sunflower waste materials after harvest and/or oil extraction. All of them say that biopellet production is valuable method for both environmental and economical. At the same time, the waste materials used as a heating material directly but inefficient combustion and excess content of volatiles were determined. All for these reason, biopellet is environmental friendly waste is a great need to improve fuel production. Although the ban, a significant amount of agricultural waste are burned in the field or using as fuel in homes in our country for each year. However, biopellet is a modern technic for heating offers integrated solutions for sustainable development in developed and industrial countries. Besides, it also serves the purpose of preventing climate change, erosion and efficiency, ecosystem health and loss of biodiversity. So, biopellet production is an ecological solution.

Key Words : Biopellet, core-shell, sunflower bat, sunflower waste.