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Farmers' and academia's views"

Peanut by-product as an energy source for improving peanut productivity

Musa Bappah[1], Tatiana Ivanova[2]

[1] *Czech University of Life Sciences Prague, Faculty of Tropical AgriSciences, Department of Sustainable Technologies, Czech Republic*
[2] *Czech University of Life Sciences Prague, Faculty of Tropical AgriSciences, Department of Sustainable Technologies, Czech Republic*

Abstract

Peanut is one of the essential proteins and oil crops that is mainly produced in arid and semi-arid areas. It is a cash crop that contributes to the economy of many countries in Asia and Africa, with an annual global production of 34 million metric tonnes on 24.39 million hectares of land. Its production is associated with the generation of residual biomass, often discarded or burned in the field, emitting greenhouse gasses. After removing the kernel, the pod amount to 20 – 30 % by weight of the dried peanut ends off in the landfill, thereby wasting the potential amount of energy feedstock. Due to their poor nutritional value, peanut shells have no potential to be utilised as animal feed. With a calorific value of 16 – 19 MJ kg^{-1}, the pods can serve as a promising feedstock for densified biofuel production, which may become a source of income for the next show. The seed can be used in raw or roasted form for peanut butter production and oil extraction. The oil extracted from peanuts is consumed for edible cooking in many countries. Peanut cake, 50 % of which is mainly protein, is used in preparing different meals and snacks for humans as well as feeds for animals. The research focuses on determining peanut shells' energy potential for densified biofuel production and their contribution toward improving peanut productivity. Most of the peanut processing is still carried out using fuelwood. However, the process can provide alternative energy that can be used for processing peanuts into different snacks, thereby reducing overdependence on fuelwood, especially in rural areas.

Keywords: Biofuel, peanut pods, peanut shells, renewable energy, residual biomass

Contact Address: Musa Bappah, Czech University of Life Sciences Prague, Faculty of Tropical AgriSciences, Department of Sustainable Technologies, Kamýcká 129, 165 00 Prague 6 - Suchdol, Czech Republic, e-mail: bappah@ftz.czu.cz