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Soyabean waste okara: A promising feedstock for biodegradable plastics**Gurpreet Kaur, Rajneesh Kumar and Niranjana Das**
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Okara is a waste product of soy milk and tofu industry. It is rich in crude fiber consisting of cellulose, hemicelluloses and lignin along with proteins (~25%), fats (10-15%) and low level of carbohydrates. Large-scale production of okara is associated with disposal problem and environmental concerns as its high moisture content leads to rapid putrefaction. However, okara is widely used as cattle feed, manure, in bakery and silkworm foods. Currently, there is a considerable research focus on the development of novel biodegradable plastics from soya bean (*Glycine max L.*) and other agricultural crops. Okara is considered as a useful and cost-effective feedstock for the production of biodegradable plastics/films because of high fiber content. Most of the biodegradable soya plastics available so far are being used in disposable food service and packaging. These plastics look like petroleum based plastics and usually freezer safe; but they are sensitive towards high temperature, humidity and water. Production of petroleum plastics involves the use of carcinogenic pollutant namely formaldehyde. Relatively, the production process of the soy plastics is less hazardous to animal health and environment. Research focus is still required to improve the plasticity and elasticity of the bio films made from Okara Protein Extract (OPE). In other words, the new forms of biodegradable plastics should find applications as butyl rubbers and packaging materials with high tensile strength. Such efforts would help in reducing the plastic and garbage mesh helping in getting the environment cleaner and greener.

Biography

Gurpreet Kaur is a Research Scholar at Thapar Institute of Engineering & Technology, working in plant molecular biology and biochemistry and has keen interest in biopolymer production.

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