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## *Synthesis and characterization of bio-degradable plastic*

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## **Abstract:**

Much of the plastic waste found in nature consists of conventional, non-biodegradable plastics, and their harmful effects on terrestrial and marine organisms when ingested or entangled are largely documented. Biodegradable and compostable shopping has recently been developed as an alternative to traditional shopping. These plastics are specially designed to break down in composting facilities and produce a product that is non-toxic to soil and crops. In this study, mucilage is prepared from the seeds, which is used as a protein containing large molecular proteins. Monosaccharide units of xylose, arabinose, rhamnose and galacturonic acid with traces of galactose and glucose in basil seed. Because basil seeds are rich in fiber, they act as a strong binding element. These slimes, after dewatering and adding plasticizers (eg, ionic liquids) and fillers (eg, cellulose nanocrystals), cross-link to increase the strength of the bio-plastic.

Other samples of Isabgol/psyllium plant seeds are also used. Isabgol, also known as psyllium husk, is derived from the seeds of the *Plantago ovata* plant. It is often used as a dietary supplement because it is high in soluble fibre. The seeds contain a gelatinous substance that forms a gel-like compound when mixed with water. The aim of this research is to find an alternative to the use of plastic in relation to seed plants.

## **Keyword:**

Seeds, Mucilage, Bio-plastic, Basil, Isabgol, Psyllium.