

## Production of Exo-polysaccharides from agricultural wastes for food and biomedical application

**Bishwambhar Mishra, Kalyani Rath, Apoorvi Chaudhri**

VIT-University, India

Pullulan is a unique exopolysaccharides of yeast like fungal origin with many useful traits and hundreds of patented applications. However, despite the fact that pullulan has been in commercial production for more than 25 years, few of these potential uses have been widely adopted. In large part this may be due to the relatively high price of pullulan. Due to its non-toxic, non-immunogenic, non-mutagenic and non-carcinogenic nature recently there is an attempt to explore this polysaccharide for various biomedical applications including targeted drug and gene delivery and surface modification. This biopolymer improves the shelf life of the food as it is not a readily assimilable carbon source for bacteria, molds and fungi responsible for spoilage of food. The oxygen resistance of pullulan films is suitable for protection of readily oxidized fats

and vitamins in food. The present study was carried out to isolate effective pullulan producing strains of *Aureobasidium pullulans* from plant leaves like *Mangifera indica*, *Ficus benghalensis* and *Azadirachta indica* and vegetables like beans and cabbage wastes. Various potential strains from these samples were screened and characterized. The optimization of the medium for pullulan production considering different carbon sources, nitrogen sources, temperature and pH was carried out in the study. The total carbohydrate content of pullulan produced from the culture was estimated using phenol sulphuric acid method. The confirmation and purification of exopolysaccharide was performed by thin layer chromatography using pullulan from Sigma, U.S.A as standard.

### Biography

I am Bishwambhar Mishra doing my Doctoral degree from VIT University, Vellore. I have completed my B-Tech, Biotechnology from the same university and am well endowed with practical knowledge with prompt willingness and interest in science am pursuing my research on pullulan from microbial sources.

This is Kalyani Rath of M-Tech, Biotechnology from VIT University, Vellore. I have completed my B-Tech, Biotechnology degree from the same university and with more zeal in science am working in the field of industrial and food Microbiology.

This is Apoorvi Chaudhri doing my B-Tech, Biotechnology at VIT-University, Vellore.