

Abstract

The conventional plastics are produced from petroleum and cause lots of environmental problems. We, therefore, study a green way of producing plastics -Transforming food wastes into biodegradable plastics.

We made bioplastics from biopolymers such as starch, gelatin and agar, and transformed food wastes, including extracts of rice, bread, jelly, corn and milk into bioplastics. Furthermore, we studied the possibility of transforming cellulose wastes – epidermis of plants, wood pulp and fibres of vegetables - into bioplastics. We make no bones about that some of our synthesized bioplastics are applicable to our daily lives.

We have successfully produced bioplastics from biopolymers and food wastes, even from cellulose wastes. Besides, we have extracted zein from corn and casein from milk. Both of them are the raw materials for making bioplastics by advanced technology.

Tests and investigations were carried out to compare the properties of bioplastics (including tensile strength, water resistance and microwave heating resistance). One of them can even have a tensile strength of more than 4000g (in 9cm²) and it is surprising that some of the bioplastics can withstand high power microwave heating for more than one minute.

Making bioplastics from food wastes is indeed a great step in adopting a green lifestyle.