

INTRODUCTION

The objective of DDIBIORESIN is to develop new biopolymers for industrial applications using rosin resins, in order to create marketable bioplastic products for final packaging.

The project consortium is made up of United Biopolymers and United Resins, which act as material suppliers, as well as Eversia and Tecnopackaging, which collaborate as bioplastic handlers. As part of the project, both companies act as industrial end users, receiving granules of the developed materials that have been optimized and adapted to manufacturing processes.

METHODOLOGY

The use of the new DDIBIORESIN biopolymers for the manufacturing of food packaging products is a revolutionary breakthrough that has a great impact on the packaging market, since currently there are no similar products based on the mixture of pine rosin derivatives, starch and biodegradable polyester polymers.

The process has generated new insights into the use and adaptation of naturally-derived gum rosin derivatives for incorporation into conventional compostable polymers such as PLA, PBAT or starch blends.

The materials obtained are converted into film with injection molding, thermoforming and extrusion techniques. The materials are presented under the name CoRez[®]-P2 to -P6.

These innovations will soon be available for commercialization and inclusion in the industry.

CONCLUSIONS

The optimized materials have been used to manufacture three final packaging products.



EVERSIA has developed a bioplastic film from resin, which will be used to manufacture ultralight bags for the transport of fruits and vegetables (figure 3) in bulk and the lid of rigid trays (figure 2).

These bags and lids have improved mechanical and aesthetic properties:

- Higher tear resistance
- Higher weight load
- More transparency

Figure 1 - Prototypes of rigid materials made with CoRez[®] P2; Figure 2 - Prototype of a 15 µm bag made with CoRez[®] P5; Figure 3 - Prototype of a combined material made with CoRez[®] P6 (30 µm film) and CoRez[®] P2 (tray).

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