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Polysaccharides discovery could cut costs

By Anthony Fletcher

13/09/2006 - **A new study proving the efficacy of using beet molasses as a substratum to produce Xanthonomas and gelling polymers could be of great interest to the food industry.**

The discovery, made University of Granada doctoral candidate Rafael Paez Valle, could lead to lower cost alternatives to traditional cultivation methods to grow bacteria that synthesise [polysaccharides](#).

Polysaccharides are polymers made up of many monosaccharides joined together by glycosidic linkages. They tend to be amorphous, insoluble in water, and have no sweet taste.

Bacteria often secrete polysaccharides, which can be adapted into useful products including xanthan gum and dextran. In his doctoral thesis entitled *Xanthonomas and gelling polymer production from [sugar](#) industry coproducts*, found that the two polysaccharides in question were best achieved from using molasses as a starting base.

In the United States and in Europe, both xanthonomas and gelling polymers are authorised for use in the food industry. Xanthonomas (E-415) is the most common, and has become the centre of a thriving industry.

In North America alone, more than 1,600 patents on Xanthonomas applications and production have been registered. Due to its stabilising and thickening action, it is also used in the cosmetic and drug industries and in oil extraction.

Gelling polymers have plenty applications in the food industry, such as water-based gels complementation gel, confectionery, compotes and jams, cake and pudding fillings, pre-cooked meals and dairy products.

For his doctorate, Valle carried out experiments with products derived from the sugar industry such as syrup, molasses and dried beet pulp to provide 'food' for bacteria. He claimed that the best results were obtained with molasses.

Valle's work was carried out under the supervision of professors Emilia Quesada Arroquia and Ana del Moral Garcia at the University of Granada. Valle plans to carry on working on the process designed in the laboratory and carry out experiments Azucarera Ebro's pilot plant.

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