

Biodegradable plastic bags academic paper



Scientists put their findings in writing to share. These are called publications or academic papers. Below is a group of scientists who share their ideas on a possible solution to the plastic problem. Read the extract and answer the comprehension questions.

Starch based bio-plastics as alternative packaging materials

Due to the negative environmental impacts of synthetic plastics, the development of biodegradable plastics for both industrial and commercial applications is essential today. Researchers have developed various starch-based composites [bioplastics] for different applications.

The present work investigates the corn and rice starch-based bioplastics for packaging applications. Various samples of bioplastics are produced, with different compositions of corn and rice starch, glycerol, citric acid, and gelatin. The tensile [strength] properties were improved after adding rice starch. However, water absorption and water solubility were reduced.

On the basis of these results, the best sample was analysed for thickness testing, biodegradability properties, SEM, hydrophilicity, thermogravimetric analysis, and sealing properties [visual inspection under a microscope, strength, and ability to make a seal] of bioplastic. The results show the suitability of rice and corn-based thermoplastic starch for packaging applications.

Comprehension Questions

1. What is meant by synthetic plastics?

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2. Name the natural polymer they are using in their bioplastic.

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3. Which two foods do they obtain the starch from?

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4. Overall, does the text suggest that bioplastics are useful? Explain why.

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