Sessions: Renewable energy

Preferred presentation Type: Poster

Title. XYLITOL: A ACYCLIC POLYHYDROXY ALCOHOL AS A SUBSTITUTE ENERGETIC SOURCE TO SUGAR

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SUMMARY: *The increasing number of metabolic disorders in the world require reduction of sucrose consumption. A sweetener option may be Xylitol, a polyalcohol of the molecular formula C5 H12 O5. The molecule of this polyol has five hydroxyl groups (OH), each of which is attached to a carbon atom, which is also known as acyclic polyhydroxyalcohol or pentitol. The high chemical and microbiological stability of xylitol, even at low concentrations, makes it a choice of preservative in relation to sucrose, as it is easily diluted in liquids, has a long shelf life, inhibits bacterial growth in food and does not participate in reactions of Maillard (the xylitol molecule does not react with amino acids because it does not contain aldehyde groups and ketones); so when added to foods or pharmaceutical drugs do not reduce the nutritional value of proteins. The production of xylitol for commercialization currently occurs by chemical catalytic hydrogenation of d-xylose solution under high temperature and pressure, however, in recent years, there has been significant progress in obtaining xylitol by biotechnology, from plant residues processed by genetically modified microorganisms. This literature review sought to describe the xylitol production pathways and their metabolization pathways, since more studies are needed to understand these processes aiming at encouraging investments in the industrial production of xylitol by biotechnology, using agroindustrial residues from Amazonia that are a potential source of renewable bioenergy, with a positive impact on health and the environment.*

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