Olive Pomace Supports the Production of Enzymes of Interest

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Abstract:

Olive oil production is one of the most important agricultural industries of the Mediterranean region like Algeria that has a very important olive sector. During the olive oil extraction process various by-products are generates in massive quantities, liquid such as wastewater and also solid such as olive pomace. These by-products have been considered as major environmental pollution that requires effective treatment due to its low pH, elevated salt and high organic acid concentration turns them into phytotoxic materials. The effective management of this by-products is necessary and quite often expensive. Actually, the phenolic compounds extracted from by-product of olive oil can be used as natural antioxidants and antimicrobial additives to improve the conservation and nutritional properties of food products. So, recovery and treatment procedures can support effective waste management which can increase the sustainability of the olive oil sector and result in worthwhile economic advantages. The objective of the present work is to study the valorization of this olive pomace through fermentation by the use of microorganisms and their application in enzyme production. The microorganisms extracted from the olive pomace was studied morphologically and its ability to produce extracellular enzymes was carried out. The solid fermentation gave rapid development of the microorganisms with a maximum production of lipase and cellulase during the second and the third day. This result opens the way for the valorization of olive pomace that has a microbiota profile that allows spontaneous fermentation and can be carried out in order to implement the production of metabolite of interest using it as the main substate.

Keywords:

Olive pomace, lipase enzymes., lignocellulolytic enzymes, fermentation media, optimization.