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BACTERIOCIN PRODUCTION BY *LACTOBACILLUS PLANTARUM* IN OLIVE MILL WASTEWATER

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Abstract:

The microbial fermentation of vegetables is used not only to preserve foods but also to give them desirable flavors and/or peculiar physical and chemical properties. In some cases, fermentation of food material is accomplished by taking advantage to the microorganisms that occur naturally on the food material. In other instances, cultures of specific microorganisms, the starter culture, are deliberately added to the fermented food. On the other hand, the manufacturing process of olive oil usually yields an oil phase (20%), a solid and toxic residue (30%) and an aqueous phase (50%), the later of which arises from the water content of the fruit. Such water, combined with that used to wash and process the olives, makes the so-called olive mill wastewater (OMW) and also contains soft tissues and soluble compounds from the olive pulp and a very stable oil emulsion (Borja and Gonzàlez, 1994; Martínez et al., 1992). In the olive growing countries of the Mediterranean area, OMW production is estimated to reach more than 30 million cubic meters every year (Borja and Gonzàlez, 1994). Its composition varies widely depending essentially on the type of process involved in obtaining the oil, while little or no water is used in batch system, continuous system employ about 1L of water per kg olives (Borja et al., 1992). In addition to its high polluting power, OMW usually possesses a high antibacterial activity exerted by different phenol compounds (Borja et al., 1993). The objective of this study was try to simulate the diffusion of phenol compounds between the olives and the environment and consequently study the influence of these phenol compounds on the growth of *Lactobacillus plantarum* 17.2b and its capability to produce antimicrobial compounds.