



FUNGI STRAIN SELECTION TO GROW ON VANILLA WASTES

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Introduction. Agroindustrial residues have a negative impact to the environment and the composition of these byproducts makes them suitable to be reusable. Biotechnology is one of the most useful tools to convert this kind of materials into another product or even to be used as a raw material for flavor production [1]. Vanilla wastes are generated after the curing and extraction process. These residues have not been characterized yet and this availability is important in Mexico. Many byproducts have been characterized and even used to obtain added value molecules [2]. For many years the microorganisms have been used to obtain a lot of valuable compounds with agroindustrial residues, such as food, wine, flavors, etc [3].

The goal of this research was to select strains with capability to grow in vanilla wastes for flavor and antioxidant production.

Methods. Vanilla wastes were from Gutierrez Zamora, Papantla, Veracruz, Mexico. The selection of 10 filamentous fungi and 1 yeast was achieved. Medium composition was as follows (g/L): sucrose (2), K_2HPO_4 (1.3), NaH_2PO_4 (0.12), $MgSO_4$ (0.3), $CaCl_2$ (0.3), Agar (20) and vanilla wastes (0.3). Radial growth of the strains were evaluated.

Results.

Tested fungal strains showed different capabilities to grow on agar vanilla wastes. Every strain showed a different radial growth and lag phase was different for each strain (Figure 1). *Phanerochate chirsosporium* (P.c), and *Streptomyces cyaneuss* (S.c), showed less capability to grow in this substrate; Yeast and *Penicilium* strain isolated from vanilla waste, did not have the expected behavior to grow in this medium.

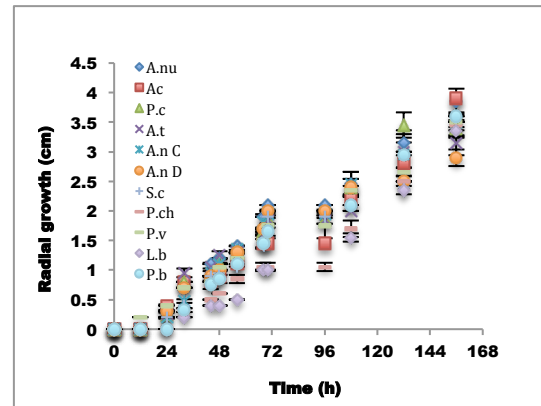


Fig.1 Kinetical radial growth of 11 strains on agar vanilla wastes.

Paecilomyces variotii (P.c) and tree different *Aspergillus* strains (A.n C, A.n D, A.n U), showed the lower lag phase and the best growth diffusion on the agar with vanilla wastes.

Conclusions. Considering the adaptability and the pattern growth of the strains on vanilla wastes, the selected strains were *Paecilomyces variotii* and tree *A. niger* strains, these will be evaluated in biotransformation systems.

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References.

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