



## ISOLATION AND CHARACTERIZATION OF AGRO INDUSTRIAL WASTE DEGRADING FUNGI FROM CHIAPAS

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### Introduction.

Chiapas is a region with abundant agroindustrial wastes, which are a source of commercially important compounds such as sugars and phenolic compounds<sup>(1)</sup>. The use of waste can help to reduce environmental pollution because they can be used as solid state fermentation to obtain high value products (enzymes, biomass, biofuels)<sup>(2)</sup>. The organisms responsible for the degradation of wood (lignocellulosic material) are fungi and insects<sup>(3)</sup>. Lignocellolytic fungi produce enzymes that allow degrade substrates such as cellulose, pectin, hemicellulose and lignin<sup>(4)</sup>. Thus these fungi and their ligninolytic enzymes have potential for application in industry<sup>(5)</sup>.

This work is focused on isolation and vegetative propagation of native fungal strains in three different substrates of Chiapas (coffee pulp, husks and pine dust).

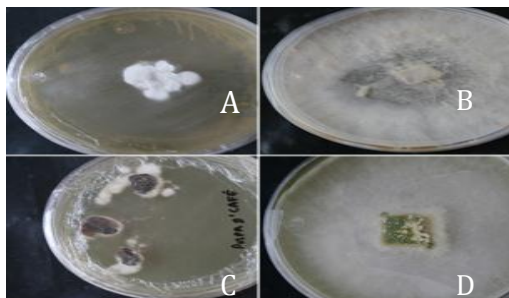
### Methods.

**Isolation.** Thirty five strains of fungi were collected at the Altos and Central Region of Chiapas. They were grown on rich media at 28 °C. Five strains were collected and grown on solid selective media (SM). SM was made with grinded agroindustrial waste: coffee pulp, husks and pine dust.

**Characterization of agroindustrial waste.** Moisture (NOM-116-SSA1-1994), ash (NOM-117-SSA-1994) and pH were determined on substrates.

### Results.

Five strains of agroindustrial waste degrading fungi were isolated on rich media (Figure 1). Further studies will be done for molecular identification of strains.



**Fig. 1** Propagation of fungi collected in rich medium. A. Strain UPCH20. B. Strain UPCH21. C. UPCH22. D. UPCH23

Once fungi strains were isolated, the characterization of lignocellolytic fungi was done with vegetative propagation on coffee pulp, husks and pine dust (Figure 2).



**Fig.2** Lignocellolytic vegetative propagation of fungi on coffee pulp (A), husks (B) and pine dust (C).

Substrates were characterized (coffee pulp, husks and pine) by determining moisture, ash (BS) and pH (Table 1).

**Table 1.** Results of analysis of pH, moisture and ash dry basis (DB) in triplicate samples of husks, coffee pulp and pine dust.

Substrates	pH (29°C)	Moisture	Ash (DB)
Husks	6.83(±0.03)	30.37(±0.01)	4.19%(±0.80)
Coffee Pulp	8.64(±0.02)	70.27(±0.04)	0.60%(±0.59)

### Conclusion.

Lignocellolytic fungi were isolated and characterized on agroindustrial wastes.

### References.

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