



## USE OF EXTRACTS FROM WILD AXIHUITL IN TREATMENT OF PHYTOPATHOGENS

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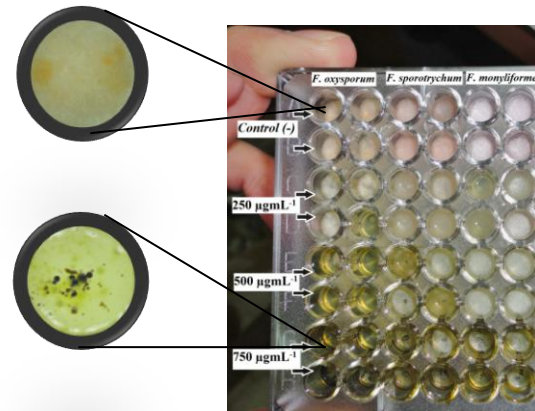
**Introduction:** Ornamental plants are mainly affected by phytopathogenic fungi and bacteria. The use of agrochemicals has permitted their control. However, its adverse effects are significantly impacted on the environment. Moreover, pathogenic microorganisms have developed resistance to chemical treatments (1, 2). Biological control is an alternative for treatment and prevention of plant diseases. Extracts or infusions from the plants leaves, seeds and flowers have been applied successfully for pathogenic fungi control (3). The empirical experience shows that the Axihuitl (*Eupatorium aschembornianum* Sch) has antimicrobial activity, although, according to our knowledge, are absent scientific reports regarding this property.

The goal of the present study is to evaluate the antimicrobial activity of wild Axihuitl extracts against phytopathogenic fungi.

**Methods.** All the Axihuitl extracts were provided by the Center for Research and Technology and Design of the Jalisco State (CIATEJ). The extract was obtained using ketone. The solvent was evaporated to constant weight. Water solutions (at 250, 500 and 750 mg/ml) were applied in antifungal assay. The antifungal assay was carried out according conventional method in polystyrene microplates (4). *Fusarium oxysporum*, *F. monyliforme* and *F. sporotrychum* were used as phytopathogenic fungi model.

**Results.** Different concentrations of Axihuitl extract was applied in antifungal assays against three phytopatogenic fungi (Fig. 1 and Table 1). Partial inhibition of fungi growth was detected in the presence of different concentrations of Axihuitl extract in most of the microplates, indication to fungistatic effect (Fig. 1). Total inhibition was observed in the case of *F. oxysporum* in the presence of 750 mg/ml extract, indicating its fungicidal effect (Table 1). Fungal growth was significantly reduced with the increase of Axihuitl extract concentration. Lujan *et al.* (5) demonstrated, in a similar assay, the antifungal or fungistatic capacity of extracts from *Conyza*

*sumatrensis*, a bush of the same family that Axihuitl, comparable to that observed for Axihuitl extract.



**Fig.1** Macroscopic view of antifungal assay microplate.

**Table 1.** Efficacy of Axihuitl extract against *Fusarium oxysporum*, *F. monyliforme* and *F. sporotrychum*.

Concentration mg/ml	Microorganism		
	<i>Fusarium oxysporum</i>	<i>F. monyliforme</i>	<i>F. sporotrychum</i>
250	xx	xx	xx
500	x	xx	xx
750	(-)	x	x
Control	xxx	xxx	xxx

Growth evaluation: (x) poor growth; (xx) few growth; (xxx) abundant growth; (-) no growth.

**Conclusions.** Wild Axihuitl extract can be applied like a fungistatic treatment against *F. oxysporum*, *F. sporotrychum* and *F. monyliforme*.

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