



ANTIBACTERIAL ACTIVITY OF ETHANOLIC EXTRACTS OF *Nicotiana glauca* on *Escherichia coli* and *Pseudomonas aeruginosa* IN VITRO.

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Introduction. *Nicotiana glauca*, (Palan palan) a fast growing shrub or small tree, belongs to the Solanaceae family² of which *Nicotiana tabacum* and *Nicotiana rustica* are best known for their use as tobacco. In Michoacan state the plant is called Tzinyacua in Tarasco idiom and xiutecuitlanextli in náhuatl idiom. In the late seventies, four major pyridine alkaloids, that is, nicotine, anabasine, anatabine and nornicotine were produced from this species⁴.¹ Several researchers have reported biological activities of *N. glauca* extracts, Soberon *et al.* (2007) reported its antibacterial and cytotoxic effects. The aim of this investigation is, therefore, is to assess the *in vitro* antibacterial activity of ethanolic extract of leaves steams fresh seeds and flowers of *N. glauca* against *Escherichia coli* and *Pseudomonas aeruginosa*

Methods. 500 g of Fresh and healthy leaves, steams, seeds and flowers of *N. glauca* were collected and disinfested in 2% sodium hypochlorite for 15 min; rinsed twice in distilled water for 15 min and dried in an electric oven at 60°C for 24 h and crushed to make powder. 10 g of powder dry tissue was macerated in ethanol (96%) for 48 h. The extracts were filtered in filter paper dried at 60°C and weighted. The ethanol filtrates were evaporated to small fractions in a rotary vapor. Extracts were kept in sterile amber bottles at 4°C.

Pure culture of *E. coli* and *P. aeruginosa* were obtained from the Laboratory of Microbiology of the Morelia Technologic University. In the disc-diffusion method, after drying in a sterile hood, 6 mm diameter disks soaked with 20µl of the different extract dilutions were placed on the agar by pressing slightly. Petri dishes were incubated at 35±2°C for 24 h. All tests were performed in triplicate and the antibacterial activity was expressed as the mean of inhibition diameters (mm) produced. Statistical analysis was realized using the program SAS.

Results. Table 1 summarizes the microbial growth inhibition by four ethanolic extracts and two dilutions of *N. glauca*. Total ethanolic extracts of leaves, seeds Fresh and flowers were particularly active against *E. coli*, and total ethanolic extracts of flowers leaves and seeds were active against *P. aeruginosa*. The bacterium growth inhibition produced by *N. glauca* extracts varied in relation to the type of extract and to the bacterium strain used.

Table 1: Inhibition diameters (mm), produced by different ethanolic extract dilutions of leaves (L) steams (S) seeds fresh (SF) flowers (F) of *Nicotiana glauca* against *E coli* and *P aeruginosa* growth. C= Control.

M	L	S	SF	F	C	
						(%)
100	<i>E. coli</i>	16.5	4	13.5	9.5	7
	<i>P. aeruginosa</i>	12.5	11	12.5	14	10
10	<i>E. coli</i>	5.5	3	4.5	4.7	4
	<i>P. aeruginosa</i>	4	3.5	4.5	6	3

Conclusions. The most active against *E. coli* was total ethanolic extract of leaves (16.5 mm) and against *P. aeruginosa* was total ethanolic extract of flowers (14 mm).

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