FLAVONOIDS AND PHENOLIC COMPOUNDS IN *RHIZOPHORA MANGLE* TISSUE EXTRACTS AND THEIR ANTIOXIDANT PROPERTY IN THREE LAGOON SYSTEMS.

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Introduction. Many studies indicate that mangrove may be a rich source to provide many novel already known biologically active compounds. Mangroves are being used in folklore medicine and there is an extensive medical research on their phenolics and flavonoids derivatives. These substances are reported to posses many useful properties against dermatological conditions, skin tumors, inflammatory and gastric diseases and antiseptic properties (1,2). Their antioxidant activity, (the most studied property attributed to flavonoids). As these plants are a source of natural antioxidants, which has been the basis of numerous studies, this estudy aimed to evaluate the flavonoids and phenolic and their antioxidant property in the extracts of *Rhizophora mangle* in three lagoon systems with different disturbance anthropogenic. **Methods.** The study conducted in three mangrove ecosystems impacted by different anthropogenic activities: Magdalena Bay, Navachiste Bay and Terminos Lagoon are located in Mexico. The total phenolic content (TPC) in the extracts was calculated as gallic acid equivalent (GAE) by Folin-Ciocalteu method (3). The total flavonoid content (TFC) was calculated by the colorimetric method (4) and the antioxidant activity by $ABTS^{-+}$ tests (5). **Results.** Higher concentrations of phenolic compounds were found in the stem tissue, followed by root and end leaves with lower concentrations, being the stem tissue of Terminos lagoon with higher concentrations (275.35 mg GAE/ g dry tissue) (Fig. 1)

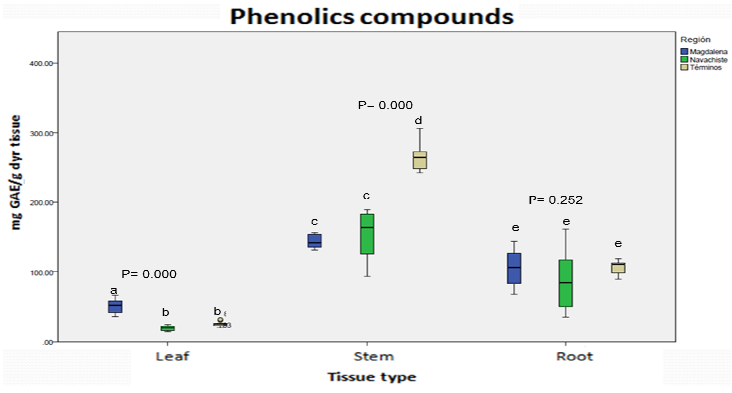

Fig.1 Total phenolic compounds in *Rhizophora mangle* tissue in three mangrove ecosystems

The highest antioxidant capacity was significant found in the stem, followed by the root and leaves. Stem tissue of Terminos Lagoon obtained the highest antioxidant activity (118639.43 µmol Trolox/g dry tissue) (Fig 2).

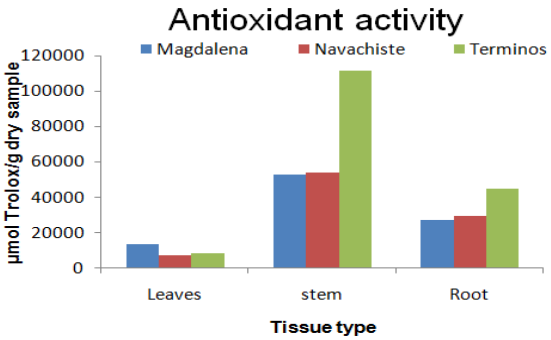

Fig. 2. Antioxidant activity (Abts) in *Rhizophora mangle* tissue in three mangrove ecosystems.

Conclusions. Mangrove *R. mangle* contains important phenolic and flavonoids concentrations which can be used as antioxidant sources. The highest values can be found in the stem, followed by the root and leaf. From the three sites analized the stem tissue of Terminos Lagoon presented the highest values of phenolic compounds, flavonoids and antioxidant activity. The pollution and the pollutants can have an influence in the phenolic and flavonoids concentrations of *R. mangle*.

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