



## **Use of *Amyntas gracilis* (Oligochaeta, Megascolecidae) and *Bougainvillea* litter for rehabilitation of overexploited soils, in Campeche, Yucatan Peninsula, Mexico.**

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Yucatan peninsula is one of the recent emerged lands in Mexico; where more of the soils have low organic matter content, and/or the organic horizon is thin (2-5cm). The industry of material extraction for construction purposes is well developed in Yucatan Peninsula, due to the fact of the calcareous material that can be obtained by the maternal rock. Therefore, the material extraction promotes the desertification of the areas, and soil erosion. *Bougainvillea* sp is a tropical and subtropical woody, evergreen, shrubby vine (Kobayashi et al. 2007), it has a wide range of distribution and its roots are superficial, what allows the plant to inhabit soils with a thin layer of soil organic matter. Earthworms as ecosystem engineers (Jones et al. 1994) can modify their environment, forming borrows and incorporation organic matter into the soil. The aim of this study was to rehabilitate soils without organic matter horizon by the use of earthworms and *Bougainvillea* litter. The study was developed at mesocosmos level in the laboratory of soils at El Colegio de la Frontera Sur, Unidad Campeche, Mexico. Individual of anecic earthworms were collected and reproduced previously, anecic worms can better incorporate organic matter in to the soil than epigeics or endogeics worms, in Mexican tropical terrestrial ecosystems, anecic worms are almost absent or scarce. In this study we used the exotic earthworm *Amyntas gracilis* (native in Taiwan), that used to inhabit banana plantations with low technology in southeast Mexico, as exotic has a wide range of tolerance to different amounts of soil organic matter and pH. Four treatments with 4 replicas were established: a) calcareous soil without organic matter horizon+earthworms+litter, b) calcareous soil with organic matter horizon+ earthworms+litter, c) calcareous soil without organic matter horizon+litter, d) calcareous soil with organic matter horizon+litter. After 60 days of study, we observed how earthworms developed successfully in treatments with and without organic matter horizon. Higher amount of litter was incorporated into the soil in those treatments with earthworms. Soil invertebrates populated those treatments with organic matter and earthworms. This study shows that *Bougainvillea* sp and *A. gracilis* can be a good combination for rehabilitation of soils without organic matter layer in tropics. Further studies are required in order to observe same results at the field level.