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Aeschynomene L.: an important & less known genus of Fabaceae

Aeschynomene L. is a genus of the family Fabaceae or Leguminosae, subfamily Papilionoideae, which has a Pantropical distribution and is represented by approximately 180 species. Its species are morphologically recognized for presenting paripinate composite leaves, papilionaceous corolla often yellow, androceu divided into two phalanges of 5 stamens, loments with articles divided into isthmus or septa. As for the form of life, they can vary between herbaceous and shrubs, with sub-shrubs being more frequent.

Phylogenetically, the genus was recently proven to be polyphyletic, and its infrageneric classification is often questioned in science, as its sections (*A.* sect. *Aeschynomene* and *A.* sect. *Ochopodium*) are genetically distant and will probably be proposed as distinct genera. The species in the section *Ochopodium* have Neotropical distribution, are adapted to dry environments and do not produce root nodules, a potential characteristic among the legumes of the subfamily Papilionoideae. The species in the section *Aeschynomene*, on the other hand, are adapted to wet or flooded environments (**Figure 1**), such as the edges of rivers and floodplains. These species have radicular nodules of the aeschynomenoid type and for this reason they have been widely studied. The habitat of these plants and the consequent development of aerquimas in their stems improved the capacity of developing nodules of these plants, which besides being present in the roots, are also found in the stems. This means that species adapted to wet or flooded *Aeschynomene* environments have the greatest potential for nitrogen fixation on the planet, and make them experts on the subject.

The species of Family Fabaceae are considered as of great interest as restorer of degraded areas, since most of them are woody and perennials, adapted to several ecosystems and able to make associations with bacteria belonging to *Rhizobium* genus, which fix atmospheric nitrogen , and giving it to the plants in a reactive form. Species of the genus *Aeschynomene* are used as forage and green manure and the occurrence of root and stem nodules is a characteristic phenomenon of this genus. Forage species with high tolerance to wet soils are required in order to maximize the production in these fields. Forage legumes, which introduce nitrogen into pasture and cropping systems, are an integral component of animal feeds, and they make

an important contribution to the nutritive value of pastures

Although many studies have been carried out in the genetic and physiological scope of *Aeschynomene* nodulation, little is known about the medicinal effects of the species. Some studies have already shown anti-inflammatory effects on *A. fluminensis* and *A. indica*. In this sense, much remains to be studied on the species of the genus *Aeschynomene*, mainly because it shows potential beneficial effects on the recovery of degraded soils.

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Figure 1: Ecology of *Aeschynomene* species