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## Floral Biology of *Cratylia argentea* — First Results of a Study in Colombia

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### Abstract

*Cratylia argentea* is a forage legume shrub well adapted to infertile, acid soils. In combination with its high drought tolerance and nutritive value, this renders the plant particularly useful for the subhumid tropics, where it grows best below 1200masl.

A lack of knowledge of the species' reproductive system makes germplasm management difficult. Apparently there is a certain outcrossing rate as indicated by high genetic variability within accessions as well as abundant visits of insects. Our objective is to verify the dependence of reproduction on insect visits. There are three possibilities: **(a)** The visiting insects produce self-pollination through tripping, causing pollen transfer between anthers and stigma of the same flower; **(b)** the insects serve as pollen vectors thus producing cross-pollination; **(c)** a mixed mating system, which is most likely.

We defined three floral phases: 1. Closed bud: Anthers open the day before anthesis. 2. Anthesis: flowers open in the morning and close in the afternoon, the pollen being mature only for a short time while the stigma is always receptive. 3. Withering: Flowers close and remain so for some days before either the whole flower or the petals drop, then leaving behind the ovary. Generally the percentage of pod set is very low (4–7% in non-manipulated, non-isolated flowers).

Current studies aim at the assessment of pod set and number of seeds per pod after the following treatments: natural self-pollination (labeling non-manipulated isolated flowers); artificial self-pollination (manual tripping of isolated flowers); natural cross-pollination (labeling flowers visited by insects); and artificial cross-pollination (after emasculation of flower buds). Furthermore, the main insects visiting *C. argentea* flowers are being identified, and pollen dispersal by insects is being studied by marking flowers with fluorescent powder.

As environmental conditions may affect the floral biology of *C. argentea*, results of this study should be validated at other sites to assess the impact of site properties on reproductive system and pod set.

**Keywords:** floral biology, forage legumes, reproductive system