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Ant - plant interaction in the genus *Inga* (Fabaceae) in the Piedras Blancas Nationalpark, Costa Rica

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Relationships between ants and plants can be found almost everywhere on earth, but are particularly common in tropical plants (JOLIVET 1996). The interaction has involved into several ant-plant mutualisms in which ants protect plants from herbivores and other enemies, feed plants essential nutrients, disperse seeds and fruits and even pollinate (BRONSTEIN, ALARCON & GEBER 2006). Extrafloral nectaries are most abundant and are found in at least sixty-eight families including the genus *Inga*. They are not involved in pollination and vary greatly in anatomy and morphology (KOPTUR 1984). Ants use the sugars in nectar to satisfy worker energy requirements and can therefore conserve proteins for larval growth (RICO-GRAY & OLIVEIRA 2007).

In the field station of the Piedras Blancas Nationalpark in the tropical rainforest of Costa Rica I carried out my studies on three species of the genus: *Inga oerstediana*, *Inga spectabilis* and *Inga densiflora*. All of them medium to large size trees with extrafloral nectaries between each pair of leaflets (WEBER 2001). While the young, soft leaves produce extrafloral nectar that attracts mainly ants but also other animals, the secretion ceases with the maturity of the leaves (ZAMORA & PENNINGTON 2001).

Trees from each species were marked and activity and abundances of the ants measured during day and night. The ant species were as far as possible identified. Exclusion experiments with sticky traps should prove if the ants protected the plants effectively from herbivores. Therefore the new leaf damage was recorded every three days from old and young leaves over one month.

Ants were present day and night on both old and young leaves of each species, but the majority of ants was patrolling on the young ones secreting nectar.

All ant species reacted rather aggressively towards some herbivores while others found ways to avoid the ants or were even tended by them (as some Membracidae).

Mature, fully hardend leaves seem to be rather unatractive to herbivores while various insects feed on the young leaves.

While *Inga oerstediana* and *Inga densiflora* show less leaf damage when ants are present, the results for *Inga spectabilis* are not quite clear and need further investigation.

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