

## Oral presentation

### **A Quantitative Synthesis of Malinké and Asháninka Medicinal Plants With Some Novel Collection, Herbarium, and Analysis Methods**

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**Introduction.** There are few tools available to the ethnobotanist to improve the efficiency of ethnobotanical field collections, maintain the confidentiality of ethnobotanical herbarium vouchers, and synthesize the large amount of medicinal plant information from many disparate cultures to find effective medicinal plants.

**Objectives.** To develop new methods of species accumulation curves, "relational efficacy" mathematical synthesis, and herbarium confidentiality to efficiently collect, protect, and analyze plants used by the Yuruá Asháninka of the Peruvian Amazon rainforest and the Malinké of Kita in the savannahs of Mali to treat parasitic diseases, auto-immune diseases, and uterine fibroids.

**Methods.** Eight Asháninka and fifteen Malinké healers were given structured interviews both describing symptoms and naming diseases to determine the medicinal plants they used, then these plants were collected as vouchers whose uses, collector and location were kept confidential. Species accumulation curves were used in the field to determine when species saturation was approaching, and the phylogenetic relations of the plants, diseases, and cultures were used to synthesize this information into a potential disease-treating efficacy for each species.

**Results.** On-the-fly species accumulation curves showed that species saturation was approaching with the Malinké, but not with the Asháninka, despite the fact that every healer and head-of-household had been interviewed. The relational efficacy technique allowed the medicinal plants to be narrowed down to the top-ten potentially most effective species, where dated phylogenies of the species were available. Prior informed consent and research agreements were honored by signing agreements regarding visiting researchers with our herbarium and blocking use, location, and collector information on herbarium labels and online databases.

**Conclusion.** Using species accumulation curves calculated in the field saved time in the field while the relational efficacy analysis used the phylogenetic overlap of the Malian and Peruvian medicinal plant species to reduce the time needed in the laboratory assaying plants. Striving to maintain the confidentiality of herbarium vouchers helps honor research agreements and avoids future bioprospecting, allowing the original holders of this medicinal plant knowledge to benefit from it.

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