lack of records over the last 50 years suggests that these taxa are very rare with low population densities. An urgent effort is needed to rediscover these elusive and potentially endangered species.

Keywords climate change, conservation, Fabaceae, Leguminosae

THE MULTIFUNCTIONAL NEOTROPICAL LEGUME *CRATYLIA ARGENTEA* IN SUPPORT OF THE AGROECOLOGICAL TRANSITION IN PRODUCTIVE SYSTEMS IN LATIN AMERICA

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The transition to ecologically based systems implies the reconnection of distinct ecological processes, disrupted by the green revolution. Soil and landscape degradation have negatively impacted native vegetation and associated biodiversity, leading to insect population outbreaks in agricultural areas. In the central Brazilian region (Cerrado Biome) pastures degraded by inadequate management predominate, which impose food restrictions on cattle due to the low-quality of available Poaceae in the dry season. As food alternatives, chicken litter is used (illegally), as well as hay or silage, produced with high input farming (irrigation, pesticides and fertilizers), which implies a high financial cost for livestock farmers. The focus on phytophagous pests in anthropocentric agricultural sciences has overshadowed other arthropods, creating a knowledge gap in understanding their role in agricultural production and local biodiversity. There is thus a large gap in knowledge about the complex relationships that connect agricultural production to local biodiversity. Reestablishing cultural connections with biodiversity is essential, through the recognition and study of the ecology of local arthropods. As indicators of environmental quality, a diversity of bees and arthropods play a vital role as biological control agents, which largely depend on a wide range of floral resources for their nutrition and reproduction. The neotropical perennial legume *Cratylia argentea* (cratylia), which provides floral and extrafloral nectar and pollen, hosts in its canopy a great diversity of arthropods that provide relevant ecosystem services like pollination and conservative biological control. In monitoring carried out during its flowering period (April to July), for two years (2020 and 2021), in three locations in the Cerrado Mineiro, 16 native bees were recognized, in addition to *Apis mellifera*, and several agents of biological control: 5 families of spiders, 1 species of Chrysopidae, 5 families of Diptera, 1 family of Coleoptera, 1 species of Odonata, 3 species of Mantodea, 13 genera of predatory wasps, 6 genera of parasitoid wasps and 5 genera of predatory stink bugs. Recent studies indicate the phytotherapeutic potential of *Cratylia* leaves in the control of nematodes in goats and its nutritional benefit comparable to Tifton grass (*Cynodon dactylon*) for lambs. It is robust in establishment in a degraded area together with *Urochloa brizantha* cv. BRS Piatã (100% survival, six months after transplantation). It has potential as a perennial green manure in agroforestry systems and in the management of spontaneous plants. Preliminary studies indicate potential as a perennial cover crop for direct seeding. Keeping green all year round, it produces fodder during the dry season for cattle and habitat for invertebrates, protects the soil and recovers degraded areas by nutrient cycling. It is concluded that the presence of “cratilia” can contribute to the restoration of local biodiversity and promote ecosystem connections between productive areas and the natural landscape, which is desirable for productive systems in agroecological transition.

Keywords Cerrado, ecosystem services, bees, biological control agents

GENOMICS SYMPOSIUM Legume research in the era of genomics

TALKS

LEVERAGING GENOMICS TO UNDERSTAND PLANT MORPHOLOGY AND MATING SYSTEMS

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The origin of plant morphology lies in the genome, but although genome sequencing is now routine, moving from genomes to understanding the developmental basis of morphology is still extremely problematic. There is still a chasm between the genotype and the phenotype. In this talk I will describe new methods for bridging the chasm by leveraging comparative genome data with k-mer analysis, SMRT sequencing, GWAS and population genomics. Using examples from dioecy, the self-incompatibility (SI) locus and the papilionoid flower, I will describe both the potential and remaining challenges, in part building on a previous paper “Whole-genome sequencing and genome regions of special interest Lessons from major histocompatibility complex, sex determination, and plant self-incompatibility” (Molecular Ecology, 2021).

Keywords comparative genomics, evolution of development, papilionoid flower, dioecy, self incompatibility