

Increasing Nitrogen Use Efficiency in Silvopastoral Systems in Brazil

In Brazil the grassland area is estimated in 200 millions hectares, being 70% of this area planted to *Brachiaria* spp. This specie is recommended for silvopastoral systems because of its great adaptability to low radiation intensity, conditions found under the trees canopy. Current fertilization strategies are inefficient since fertilization decisions lack of agronomic foundation.



Figure showing cattle grazing *Brachiaria* in a silvopastoral system

The idea is to use the hand-held GreenSeeker (below) as decision-making tool to make nitrogen-based recommendations in silvopastoral systems using *Brachiaria* spp. For this purpose, the team will develop a new algorithm to predict N-based fertilization using field experiments in the state of Sao Paulo, Brazil. The hand-held GreenSeeker has the advantage of being accessible and easy-to-use for local producers, consultants, and extension agencies in the region, providing accurate biomass data.

Benefits:

- More accurate biomass estimation
- Possibility to intensify silvopastoral systems.
- More efficient use of nitrogen-based fertilizers.
- Increased silvopastoral system profitability.



An increment of 0.5 ton/ha/year of dry matter in grasslands of *Brachiaria* can result in an increment of US\$ 5 billions at country level.

Guilherme Mendes Machado Franco de Arruda

gui2mfazoo@yahoo.com.br