Foreword

The required intensification of ruminant production to satisfy the increasing demand for milk and meat needs to be achieved by environmentally friendly technology that does not prevent future generations in meeting their requirements. In this context, maximising agricultural outputs by increasing the efficiencies of capturing solar energy per unit of land and the transformation into the food chain appear as logical strategies.

Multipurpose trees can make a significant contribution to agricultural systems by providing a variety of useful products, including valuable forage and wood. The feeding value of low quality agricultural residues and tropical grasses can be greatly improved by foliage from leguminous trees, which can be grown integrated directly to pastures, in fences and in the so called "protein banks". In mixed farming areas, the tree-strata concept significantly raises the overall photosynthetic capacity of the agricultural system by enlarging the leaf-area index and favouring nutrient enrichment and recycling. In some cases, pure stands of forage shrubs and trees can be the best option to intensify animal production replacing traditional low performing grass-based systems.

In general, it is now clear that agricultural production in the tropics, and animal production in particular, should be based, whenever possible, on systems with trees, that try to simulate the original multi-strata plant communities.

The purpose of this valuable document is to provide the scientific basis for the contribution of legume tree foliages to ruminant production, particularly from the points of view of their overall high nutritive value, and positive effects on rumen function, microbial yields and body metabolism, and to encourage livestock experts and producers to consider the inclusion of forage legume trees in ruminant production systems.

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