Objective: To evaluate the nutritional quality of fodder *Smallanthus sonchifolius, Moringa oleifera, Salix babylonica* and *Alocasia macrorrhiza* by determining the physical and chemical properties as a tool for predicting their potential as alternative in ruminant feeding.

Materials and methods: Samples of the leaves of plants *Smallanthus sonchifolius, Moringa oleifera, Salix babylonica, and Alocasia macrorrhiza* dried to remove moisture, prevent fermentation and to facilitate the milling process. The samples were reduced to a particle size of 1 mm. The physical properties were carried out density (g / ml), solubility (%), the water holding capacity (g / g) and buffering capacity (meq), these properties are determined according to the protocol of Savon (1994). In all samples of fodder were performed compositional analysis for dry matter (%), crude protein (%) in neutral detergent fiber (%), acid detergent fiber (%), ether extract (%) and gross energy. The data of the selected variables were analyzed using SAS statistical package version 9.1 2003 by the completely randomized experimental design to detect differences between means were used to compare mean Duncan.

Results: The analysis of physical properties as an indicator of compositional quality of the cell wall structure of plant species has revealed that for the variables density, water absorption capacity did not show significant difference, but there was difference in buffering capacity and solubility between fodder, but not between *Smallanthus sonchifolius* and *Moringa oleifera*. In compositional analysis found no significant difference for dry matter, protein, ether extract from forage, but there was difference for NDF neutral detergent fiber being the highest value for *Moringa oleifera* (61%) and lowest for *Alocasia macrorrhiza* (25%) for acid detergent fiber was the highest value for *Moringa oleifera* (38%) and consistently lowest for *Alocasia macrorrhiza* (18%) to gross energy with no differences between *Smallanthus sonchifolius* and *Moringa oleifera* but for the other forages. *Alocasia macrorrhiza* present the lowest values of cell wall composition and high Solubility.

Conclusion: The physical and chemical characterization shows that made *Smallanthus sonchifolius plant, Moringa oleifera and Alocasia macrorrhiza* are potential fodder to be used in cattle feed. *Alocasia macrorrhiza* for its low fiber content showed the highest solubility.