

Comparative studies on growth, yield and chemical composition of *Withania somnifera* (amukkara) and *Ruellia tuberosa* (local amukkara)

N D N Priyadarshani* and S Subasinghe

Department of Crop Science, faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya

Amukkara (*Withania somnifera*) (Solanaceae) is one of the major imported species used in Ayurvedic system of medicine for the cure the variety of diseases and disorders. Most of the Ayurvedic physicians use *Ruellia tuberosa* (Local Amukkara) (Acanthaceae) as an alternative for imported Amukkara (*Withania somnifera*), An experiment was carried out in Medicinal plant garden at Gamudawa site, University of Ruhuna, Kamburupitiya to compare growth and yield of these two species For each species sixty-five pots were used. These pots were arranged in a Completely Randomized Design with five replicates. Seeds of these two species were used as planting material and maintain one plant per pot. Data on growth parameters (plant height, number of branches,

number of leaves and leaf area) and yield parameters (root length, root dry weight and root volume) were collected. Data were analyzed using ANOVA with Statistical Analysis System (SAS) and means were separated using Duncans' Multiple Range Test (DMRT). Root samples were analysed for chemical ingredients at Industrial Technology Institute by using High Performance Liquid Chromatography (HPLC). All the growth and yield parameters were higher in *Ruellia tuberosa* than *Withania somnifera*. Chemical analysis showed that two key ingredients (Withanoloid and Withaferine A) are available in both species, but amount present in *Ruellia tuberosa* (1.1 %, w/w, 0.014%, w/w) is little less than *Withania somnifera* (1.54%, w/w, 0.015%,w/w) respectively. Higher growth and yield were recorded in *Ruellia tuberosa* compared to *Withania somnifera*. Due to same active ingredients and well adaptability to the environment, *Ruellia tuberosa* can be cultivated as an alternative for *Withania somnifera*. This saves foreign exchange and ability to utilize local resources in better way.