

SECTION B

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Medicinal plant industry in Sri Lanka: A case study

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According to the World Health Organization, about 80% of populations in developing countries are still dependent on traditional systems of medicine for their basic health care needs. Despite the fact that Sri Lanka is blessed with all necessary requirements for the cultivation of medicinal plants, about 60-65% of raw material requirement is imported from India and 8 other countries due to lack of systematic cultivation in the country. The present survey was undertaken to identify constraints faced by different stakeholders of medicinal plant based industry in 5 districts, especially at the village level. A survey was conducted using a formal questionnaire. Education level of the participants varied from GCE O/L to degree level. Main constraints identified were lack of planting materials to set up large scale cultivation, lack of knowledge on how to cultivate, lack of awareness of methods to control pests and diseases, post harvest aspects and lack of proper market to sell medicinal plant materials. Further, land availability, lack of credit facilities and lack of irrigation facilities were also noted. The main sources of planting materials were natural forests, own nursery, and Department of Ayurveda and Forest Department nurseries. Only 10% of participants were aware on all aspects of medicinal plant cultivation. However, participants' awareness of the quality of herbal materials is very high (66% of participants). As to the quality, price and availability of local and imported herbal materials, the response of 82% of participants was that the quality of local raw materials was excellent, while 45% of participants answered that the price of local herbal material was at an affordable level. 28% of participants indicated that it is cheap compared to the imported materials. The main source of information/awareness of medicinal plants was the Industrial Technology Institute followed by the Department of Ayurveda, and the electronic media. The majority of participants (52%) expressed that the government involvement in the medicinal plant industry was satisfactory. In addition, 69% of participants possessed ½ - 1 acre of land. Therefore, systematic cultivation of medicinal plants at the village level is possible as a home garden system of group of farmers. According to the results, it can be concluded that major constraints faced by stakeholders of medicinal industry are lack of a marketing channel, lack of planting materials and knowledge on cultivation and processing.

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Effects of hormone on the rooting of semi hard wood, double-nodal leafy stem cuttings of *Gymnema sylvestre* (Masbedda)K K I U Arunakumara¹, U Wickramasinghe¹, B C Walpola² and S Subasinghe¹¹Department of Crop Science, Faculty of Agriculture, University of Ruhuna, Kamburupitiya²Department of Chemistry, Faculty of Agriculture, University of Ruhuna, Kamburupitiya

Medicinal plants have always been a part of man's life and thus conservation of rare species is of prime importance. The effects of rooting hormone, indole-3-butyric acid (IBA) on the rooting of semi hard wood, double-nodal leafy stem cuttings of *Gymnema sylvestre* were investigated in order to determine the possibility of raising plants through cuttings with or without using a rooting hormone. The cuttings were treated with hormone at four levels of 0 (T1), 10 (T2), 50 (T3), and 100 (T4) ppm.

The Randomise Completely Block Design (RCBD) was used with four replicates. Assessments of percentage survival of cuttings, callused cuttings, rooted cuttings, number of roots per cutting, length of the longest root per cutting were made 75 days after the treatments. Percentage survival of the cuttings differed among the treatments, but differences were not significant ($p \leq 0.05$). Cuttings treated with 10 ppm (T2) had the highest mean percentage survival of 89%, while the lowest (86%) was recorded from the control (T1). Results showed that callusing of cutting was significantly ($p \leq 0.05$) higher in IBA treated cuttings than that of the control (T1). However, figures of percentage callusing were not significant ($p \leq 0.05$) among the different IBA levels. The highest mean percentage of callused cuttings of 82 % was recorded from T4, followed by T3 with 79 %. Results of percentage rooting showed that rooting was influenced by the IBA treatments. However, even in the control 54% cuttings had produced roots. In conclusion, better performance observed from the control in terms of survival and rooting rates compared to those treated with rooting hormones at higher concentrations, may imply that *Gymnema sylvestre* can be propagated vegetatively by means of cuttings at reduced cost.

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Screening of Goraka (*Garcinia quaesita* Pierre) cultivars for high yield and fruit quality

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Goraka (*Garcinia quaesita* Pierre) belongs to family Clusiaceae and is a medium sized evergreen shade loving multipurpose tree species. It can be successfully grown in a wide range of soils in the wet and intermediate zones of Sri Lanka and there is a tremendous potential for introduction into home gardens as a cash crop. It also has an export potential but the demand cannot be satisfied due to lack of continuous production and poor quality of the product. There are two types of plants, male and bisexual. These cannot be identified when they are at seedling stage. Therefore, studies were carried out in the Horticultural Crop Research and Development Institute, Gannoruwa and the Horticultural Research Farm at Weerapana to develop a bisexual type of variety having high yield and quality fruits.

Exploration for goraka varieties was mainly done at Weerapana Horticultural Farm in Hambantota district during 1997-1998. Five accessions including one yellow fruited accession was collected and bud woods of these were cleft grafted on to seedlings raised from goraka seeds. The grafted plants were planted in Weerapana and Gannoruwa in the year 2000. One accession that bears fruits early in both locations was characterised and evaluated for yield and fruit quality. Fruits of this variety were also analysed for acidity and Brix.

The variety had bisexual flowers, early bearing and bushy type tree. The tree was short and small statured around 2.5 m height. It bears fruits within three years, and days to fruit maturity ranged from 100-120 days. The main flowering and fruiting periods were February-March and June- August, respectively. The average yield of five-year-old plant was 100 fruits, and dry weight of segments per tree was 500g- 750g. The fruit weight varied from 83g to 226g, and dry weight of segments varied from 8g to 26g. The colour of the fresh segments was reddish orange. The percentage of tartaric acid and Brix (dry wt. Basis) was 18.9% and 6.0 respectively. The variety was designated "Weerapana" and released by the Department of Agriculture in 2005, for cultivation in home gardens.

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