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## Coconut Garden - A Platform for Herbal Renaissance

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### Abstract

Synthetic drugs gaining entry into the human systems through various channels for treating ailment, infertility, beauty care, *etc.*, leave their deadly imprints in the name of side effects and today medicinal plants are staging a comeback in the form of "Herbal Renaissance" to shield the humanity with safety and security. In the recent past, high market fluctuations of copra price along with emerging pests and diseases has forced the farming community to think of synergistic intercrops like cocoa, nutmeg, pepper, arecanut, acid lime, guava *etc.*, in coconut gardens. Unequivocally medicinal plants offer good scope for increasing the on-farm productivity and income of coconut growers besides restoring the traditional wisdom about alternative medicine which has slowly eroded in the plight of fast acting synthetic drugs. *Eclipta alba*, *Centella asiatica*, *Andrographis paniculata*, *Solanum surattense*, *Phyllanthus amarus*, *Swertia chirata*, *Hemidesmus indicus*, *Pluchea lanceolata* *Withania somnifera* and *Alpinia galangal* are the medicinal plants suitable for intercropping in coconut gardens.

### Introduction

Today herbs are staging a comeback and 'herbal renaissance' is the buzz word heard loud across the globe in the context of bitter lessons learnt due to the blind dependence on synthetic drugs in the recent decades. Exploding population, inadequate supply of drugs, escalating cost of allopathic treatments, deadly aftermaths of synthetic drugs and the associated resistance for infectious diseases have laid increased emphasis on the use of plant materials for human ailments. There is a growing threat to the very sustenance of medicinal plants which could be attributed to an array of causes *viz.*, rapidly declining forest cover, environmental changes, habitat specificity, land-use disturbances and over exploitation by pharmaceutical industry. World Health Organization (WHO) has estimated the present demand for medicinal plants to be approximately US\$ 14 billion per year and has projected to grow annually @ 15-25% and is likely to reach US\$ 5 trillion by 2050. Hence domestication of prioritized medicinal plants is the only way out to overcome this supply crunch and to support the health care needs of the people. Inclusion of medicinal crops in the existing cropping systems offers the most convenient strategy for their cultivation as well as conservation.

### Coconut Garden - A Viable Platform

Coconut is cultivated over 106 countries worldwide and in India with an acreage of 2.15 million hectares is mainly in the hands of small and marginal farmers. In the traditional coconut growing states in India where monocropping is practiced, the farm yields are poor and

farmers are under-employed spending only 100 to 120 man-days per year. The farm production and productivity also meet erratic fluctuations due to the inconsistent farm gate prices of coconut. Hence, coconut growers are forced to think of intercrops in coconut gardens to compensate the loss accrued by sole traditional farming.

Many tropical medicinal plants are well adapted to partial shading, moist soil, high relative humidity and mild temperatures, allowing them to be intercropped with fruit trees and plantation crops. Cultivation of medicinal plants does not require stupendous cultural operations and thus provides a feasible opportunity for the coconut growers in terms of economic and environmental benefits. Coconut trees usually do not utilize completely the available resources such as land, aerial space, water and nutrients, as the active root zone of the coconut tree is confined to only 25 percent of the available land area and the remaining area could be effectively utilized for raising medicinal plants profitably.

## Medicinal Plants Suitable for Coconut Gardens

Field experiments conducted at the Central Plantation Crops Research Institute, Kasaragod in Kerala have indicated successful establishment of medicinal plant varieties such as vettiver (*Vetiveria zizanioides*), kacholam (*Kaempferia galanga*), arrow root (*Maranta arundinacea*), Chittadalodakam (*Adathoda beddomei*), Thippali (*Piper longum*) and Aloe vera (*Aloe barbedensis*) as intercrops in coconut gardens. A field experiment conducted at Coconut Research Stations, Aliyarnagar and Veppankulam, Tamil Nadu Agricultural University in 36 years old coconut garden to explore the possibility of intercropping herbal plants revealed that *Alpina galang* (Sitharathai), *Aloe vera* (Sotru kathalai), *Ocimum sanctum* (Tulsi), *Cymbopogon flexuosus* (Lemon grass) and *Pogestemon patchouli* (Patchouli) were found to be the suitable intercrops in adult coconut garden (Mohandas, 2011).

Table 1: Potential uses of Prioritized medicinal plants

Sl. No.	Medicinal plant	Potential Uses	Chemical Constituents
1.	<i>Eclipta alba</i>	Liver tonic, anti-hemorrhagic, hair growth and dyeing, anti-menorrhagic	Coumestans, Wedelolactone
2.	<i>Centella asiatica</i>	Treatment of varicose veins, psoriasis and for improving memory	Pentacyclic triterpenoids
3.	<i>Andrographis paniculata</i>	Treatment of upper respiratory tract infections and an essential ingredient in "Nilavembu Chooranam" used in the treatment of dengue fever in traditional medicine; Called King of bitters	Andrographolide – bicyclic diterpednoids
4.	<i>Solanum surattense</i>	Treatment of cough, asthma, chest pain and finger abcess	Flavonoids, saponins and sterols
5.	<i>Phyllanthus amarus</i>	Used in gonorrhoea, menorrhagia, genital infections, gastropathy, diarrhea, dysentery, ophthalmopathy, ulcers, wounds and intermittent fever	Lignans, flavanoids and triterpenes
6.	<i>Swertia chirata</i>	Treatment of malarial fevers, hysteria, convulsion, dyspepsia, diarrhea and in liver disfunctions	Ophelic acid, chiratin, amarogentin and swecherin
7.	<i>Hemedesmus indicus</i>	Treatment of ulcer, mis-carriage, fever, loss of appetite, gastritis, anorexia, nervous cough, diarrhea and diabetes	Sarsaponin, Smilacin
8.	<i>Pluchea lanceolata</i>	Treatment of inflammations and bronchitis, psoriasis, cough and piles – Antipyretic, analgesic, laxative and nervine toxin	Sequiterpenes
9.	<i>Withania somnifera</i>	Adaptogen, treatment of insomnia, increases haemoglobin and hair melanin; improves fertility	Alkaloids and steroidal lactones
10.	<i>Alpinia galangal</i>	Promotes digestion and stimulates appetite	Carotol

## Conclusion

**B**iotic and abiotic pressures on forests, diversion of forest land for non-forestry purposes, stress on land and climatic vagaries join hands and pose severe threat to the very availability of medicinal plants and their

extinction is the biggest challenge faced by the globe today. With the annual demand of medicinal plants increasing by 15-20% per annum, to save the herbal industry from crumbling down for want of inputs, the only way out is domestication of prioritized medicinal plants. Continued commercial exploitation of medicinal plants had drawn the

road map for their extinction. As *in situ* conservation of these resources alone cannot meet the swelling demand from the pharmaceutical industry, domestication by systematic cultivation and inclusion in cropping systems is imperative to protect these endangered species. Thus coconut garden is an ideal choice for intercropping of medicinal plants.

## Reference

Mohandas, S., 2011. Prospects of Intercropping Medicinal and Aromatic Plants in Coconut Garden. *Madras Agric. J.* 98(1-3), 82-83.