

Coconut farmers must reap benefits from floriculture

In the present scenario of fluctuation of coconut price and high production cost, increasing incidence of pests and diseases in addition to low and erratic rainfall, the pure crop of coconut is no more economical. India is a country where agriculture is the mainstay of our economy, whereas intervention can help a poor farmer earn much more than what he does, by making the most optimum use of available limited natural resources. This era has seen a dynamic shift from sustenance production to commercial production. Though India has a huge potential to boost floriculture, Government of India has identified this sector as a sunrise industry and accorded it 100% export oriented status.

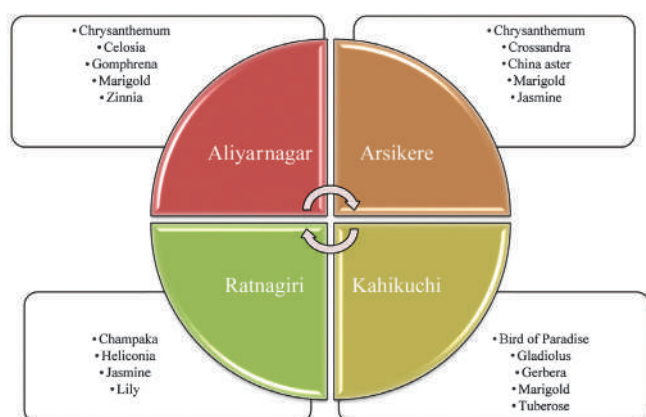
IN India, coconut is predominantly cultivated in small and marginal holdings. Most of these holdings neither provide gainful employment opportunities for the family labour throughout the year nor generate sufficient income to meet the family needs. The local coconut industry has been reeling from unstable market situation characterized by low copra prices in the international market. In the hope of helping the coconut farmers, a technology was developed to maximize land use and generate additional income with cultivation of commercial flower crops.

India is bestowed with several agro-climatic zones conducive for cultivation of flower crops and the greatest advantage is that, flower crop needs much less land and water for its production. Nearly 80% of area under floricultural crops is concentrated in seven states comprising Tamil Nadu, Karnataka, Andhra Pradesh, West Bengal, Maharashtra, Haryana, Uttar Pradesh and Delhi. A major part of the area under flower cultivation is devoted to the production of Marigold, Jasmine, Rose, Chrysanthemum, Tuberose, etc. with considerable increase in the area under cut flower cultivation. Flower crops also ensure decent prices almost round the

year and the lock-in period from sowing to harvesting is much less as in the case of other crops. Also, the net profit against the actual investment is much higher; these products are in high demand not only in domestic markets, but also in International markets.

All India Coordinated Research Project on Palms (AICRPP), has been an important contributor to the region's specific coconut research and development effort. One of the priority areas of research within the AICRP on Palms, is to assess the influence of intercropping flower crops in coconut on productivity per unit area and system economics in different agro-climatic regions. As coconut based intercropping with flower crops requires short period of planting time, and smaller area (unutilised spaces between coconuts), it provides additional income to coconut farmers. From 2012-2016, field experiments were conducted at Aliyarnagar (Tamil Nadu), Kahikuchi (Assam), Arsikere (Karnataka), and Ratnagiri (Maharashtra) in a randomised block design with four replications each taking four coconut palms per treatment. The flower crops were grown in 84% of the area in the interspaces of coconut leaving 16% in the coconut basins. Marigold, chrysanthemum, celosia, zinnia, gomphrena, crossandra, china aster and gladiolus were planted every year while jasmine, lily, heliconia, tuberose, gerbera and bird of paradise which are perennial in nature were planted during first year and maintained during subsequent years. Vermicompost and FYM were used as organic manure applied basally, and inorganic fertilisers were used as top dressing in split dosages. The recommended package of practices was followed as per the regular schedule. The figure lists the flower crops grown in each centre.

This technology has received wide acceptance/adoption among the coconut growers of Kanyakumari district, a coastal district located in the southern tip





CBCS with Gladiolus flower (Kahikuchi)



Celosia in coconut garden at Aliyarnagar



Crossandra in coconut garden at Arsikere



Gomphrena in coconut garden at Aliyarnagar

of Tamil Nadu which is very often prone to weather extremities like cyclonic depressions and thunder storms. Flowers, viz. marigold, chrysanthemum, tuberose and gomphrena are cultivated by the farmers for use in garland making. Elsewhere in Tamil Nadu, Karnataka and Maharashtra flowers, viz. marigold and chrysanthemum are intercropped in coconut gardens sporadically by the farmers targeting Dussera /Vijayadasami festivals when there is a huge demand for flowers.

In 2020-21, India's total floriculture exports were ₹575.98 crores (\$77.84 million). Karnataka, Andhra Pradesh, and Tamil Nadu account for more than half of all floriculture businesses. Flower stringing is a traditional South Indian practise of connecting flowers together with a thread; *Jasminum sambac* (Madurai malli), *J. Grandiflorum* (Jathi malli), and *J. Auriculatum* (Mullai) and crossandra have shown to have a local and high export demand in markets abroad, which could be attributed to women's aesthetic preferences for their hair. Chrysanthemum and marigold are in high demand during the Dussera / Vijayadasami and Sabarimala seasons. Roses, gerberas, orchids, carnations, anthurium, liliun, chrysanthemum, gypsophila, cala lily, heliconia, bird of Paradise, and lisianthus make up the majority of Indian cut flower exports and are occasion-driven. Large worldwide events such as Christmas, New Year's Eve, Valentine's Day, and Mother's Day are scheduled to coincide with manufacturing and major export. India produces about 8,67,000 MT of cut flowers per annum (2018-19).

The major flower crops for essential oil extraction include rose, jasmine and tuberose, etc. Brazil, China, the United States, Egypt, India, Mexico, Guatemala, and

Indonesia are the world's leading producers of essential oils. The United States (40%) is the largest consumer, followed by Western Europe (30%), and Japan (7%). The demand for the essential oils progresses at a rate of 7-9% per annum and offers unique scope for large scale cultivation in India. Isolation of xanthophyll pigments present in marigold has been refined and large scale cultivation of marigold is being attempted in parts of India in association with the extraction Industries. The marigold pigment is widely used in the poultry industry to enhance the colour of the meat as well of the yolk of the



Lily flower plant in coconut garden at Ratnagiri



Lily in coconut garden at Ratnagiri

Table 1. Marketing opportunities for Indian Floriculture Industry

Seasonal opportunity on the global market

Export potential	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
High												
Moderate												
Low												

Seasonal opportunity in the domestic market

Export potential	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
High												
Moderate												



Marigold in coconut garden, Kahikuchi Centre



Tuberose intercropping in coconut garden

eggs beside its usage in food and textile industry. Floral decorations are in high demand, thanks to spectacular arrangements at social, political, entertainment, and sporting events. Despite the fact that this industry is unstructured, it has a sizable commercial volume.

Economics

The studies conducted at different centres of All India Coordinated Research Project on Palms indicated the better performance of Chrysanthemum, Marigold and Gomphrena in coastal Tamil Nadu; Crossandra, Chrysanthemum, China aster and Marigold in semi arid Karnataka; Gerbera, Gladiolus, Tube rose and Marigold

in Assam and Lily and Heliconia spp. were found best under Konkan condition of Maharashtra. Therefore, coconut + flower crop sector can be identified as grey area which can be directly included in different farming systems as a viable diversification from the traditional field crops because of enhanced net income to the tune of ₹2.00 lakhs to ₹4.00 lakhs/ha.

For further interaction, please write to:

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