


Commercial flower crops in coconut garden under different agro-climatic conditions

H.P. Maheswarappa , Sumitha. S , S. Rani , J.C. Nath , T.B. Basavaraju and V.V. Shinde
AICRP on Palms, ICAR-CPCRI, Kasaragod, Kerala

In the present scenario of fluctuation of coconut price and high production cost, and increasing incidence of pests and diseases in addition to low and erratic rainfall, cultivation of coconut as a mono crop is no more economical. Hence, there is need to follow crop diversification and intensification in coconut gardens with compatible crops to increase the productivity and income by ensuring effective and efficient utilization of soil space and solar radiation. Flower crops are important in our daily life as well as national economy. Government of India has identified floriculture as a sunrise industry and has accorded it 100% export oriented status. Owing to steady increase in the demand of flowers, floriculture has become one of the important commercial trades in Agriculture. Hence, commercial floriculture has



Coconut based intercropping with flower crops requires short period of planting time, smaller area , which can provide additional income to coconut farmers. Commercial flower production helps in increased earning for the farmers.



Table 1. List of Flower crops grown in different centres

Region	Flower crops
	Chrysanthemum (<i>Dendranthema grandiflora</i>), Celosia (<i>Celosia sp.</i>), Marigold (<i>Tagetes erecta</i>), Zinnia (<i>Zinnia sp.</i>) and Gomphrena (<i>Gomphrena globosa</i>)
Arsikere (Karnataka)	Jasmine (<i>Jasminum multiflorum</i>), Chrysanthemum (<i>Dendranthema grandiflora</i>), Crossandra (<i>Crossandra infundibuliformis</i>), China aster (<i>Callistephus chinensis</i>), Marigold (<i>Tagetes erecta</i>)
Ratnagiri (Maharashtra)	Jasmine (<i>Jasminum sambac</i>), Jasminum multiflorum, Lily (<i>Lily sp.</i>), Heliconia (<i>Heliconia spp.</i>), Champaka (<i>Michelia champaka</i>)
Kahikuchi (Assam)	Tuberose (<i>Polianthes tuberosa</i>) var. Single, Gerbera (<i>Gerbera jamesonii</i>) var. Red Monarch, Bird of Paradise (<i>Strelitzia reginae</i>) var. Glauca, Gladiolus (<i>Gladiolus grandiflorus L.</i>) var. Oscar, Marigold (<i>Tagetes erecta</i>) var. Siracole

emerged as hi-tech activity-taking place under controlled climatic conditions inside greenhouse, and is being viewed as a high growth Industry. Coconut based intercropping with flower crops requires short period of planting time, smaller area (unutilised spaces between coconut), which can provide additional income to coconut farmers. Commercial flower production helps in increased earning of the growers. Flowers can also be a source of huge foreign currency by exporting them.

All India Coordinated Research Project on Palms (AICRPP), has been an important contributor

to the region’s specific coconut research and development effort. Performance of commercial flower crops under coconut in different agro-climatic regions is one of the priority areas of research under AICRP on Palms to evaluate the impact of intercropping flower crops in coconut on productivity per unit area and economics of the system. A field experiment was conducted for four consecutive years, 2012–13 to 2015–16 at Aliyarnagar (Tamil Nadu), Kahikuchi (Assam), Arsikere (Karnataka) and Ratnagiri (Maharashtra). Details of flower crops grown are given below.

In Aliyarnagar centre results

showed that in a Coconut + Marigold intercropping system, an average flower yield of 6,053 kg/ha was recorded from marigold with a net income of Rs. 2,54,983/ha and B:C ratio of 1.87 followed by Coconut + Gomphrena with a net income of Rs. 2,40,458/ha and B:C ratio of 1.85.

At Horticultural Research Station, Kahikuchi, the mean flower spikes production per ha was 314987 in Tuberose, 743200 in Gerbera, 32175 in Bird of Paradise, 61987 in Gladiolus and 20810 kg/ha in Marigold. Intercropping system of growing gerbera in coconut garden recorded the highest net income (380075/





ha) and B: C ratio (3.5) followed by tuberose (323420/ha and 3.1), gladiolus (315090/ha and 2.9), marigold (233050/ha and 2.8) and bird of paradise (199360 and 2.7). The monocrop of coconut recorded significantly the lowest net income of 64050 ha⁻¹ and B: C ratio (1.6). Hence, intercropping of gerbera, tuberose, gladiolus and marigold with coconut can be recommended for Assam condition.

The mean yield of flowers Arisikere centre was 1045 kg/ha in jasmine, 4393 kg/ha in chrysanthemum, 1070 kg/ha in crossandra, 2158 kg/ha in China aster and 4874 kg/ha in marigold. The cropping system of coconut + chrysanthemum recorded significantly higher net income (Rs. 2,00,558/ha) followed by coconut + crossandra (Rs. 1,79,483/ha).

With respect to Ratnagiri centre, *Jasminum multiflorum* recorded 48656kg/ha, *Heliconia* spp. recorded 96982.5 number of spikes/hectare, *Jasminum sambac* recorded 1123.2 kg/ha followed by *Michelia champaka* recorded 12690 number of flowers. In respect of economics, Coconut + Lily spp. system recorded the highest net return of Rs. 4,79,985/- hectare followed by Rs 3,37,501/- in Coconut + *Jasminum multiflorum* and Coconut + *Heliconia*, Rs. 2,18,905/-.

By intercropping with seasonal flower crops, the coconut farmer can earn additional income from the garden without affecting the yield of the main crop. ■

Authors: ¹Project Coordinator, AICRP on Palms, ICAR- CPCRI, Kasaragod, Kerala, ²Scientist (SPMA), AICRP on Palms, ICAR- CPCRI, Kasaragod, Kerala, ³Assistant Professor (Agronomy), CRS, Aliyarnagar, Tamil Nadu, ⁴Professor (Hort), HRS, Kahikuchi, Assam, ⁵Professor (Agronomy), College of Horticulture, Kolar, UHS, Bagalkot, ⁶Professor (Hort), RCRS, Ratnagiri, Maharashtra