

An Initiative to Double The Farmer Income by Hi-Tech Horticulture Through CoE on Precision Farming in Horticulture crops

Introduction:

Precision Farming in Horticulture sector provides an excellent opportunity in raising the income of the farmers throughout the year. A significant shift towards horticulture is envisaged in the state with an increase in area and production after the launch of the RKVY scheme.

Despite the scope and importance for cultivation of various horticulture crops, the sector is yet to make break-through in the productivity fronts and market chain for many reasons. This is because of the fact that the farmer in mass are not adopting the latest production technologies comprising of **Precision Horticulture Practices** related to soil, water and selection of planting material. The non judicious application of critical inputs and non adoption of improved technologies lead to less production as well as productivity per unit area.

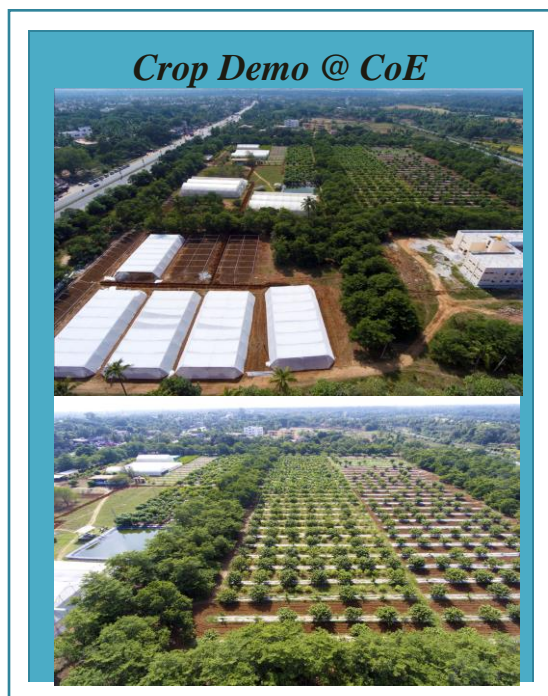
Genesis of Center of Excellence on Precision Farming:

Center of Excellence (CoE) on Precision Farming has been established under RKVY Scheme of 2015-16 at Maddur, Karnataka state. The center cater the need of precision farming training in open and protected cultivation, demonstration of these technologies in farm and distribution of quality planting materials to the farmers. The center also encourage the adoption of precision horticulture technologies in protected cultivation there by help in doubling the farm income. This precisely envisages less challenges and more profit by using per drop of water.

More than thirty training programmes were conducted at CoE during the year 2016-17 covering 1000 farmers and also departmental officers. There were more common challenges in crop production mainly *decrease in water level in bore wells reaching up to 1000 feet depth, less or poor availability of supply of electricity to operate the pumping of water, non judicious use of inputs and low market prices resulted in lesser productivity with low income.*

Precision Farming Training at CoE





Specifically, 100 farmers were trained Precision Farming under Protected Cultivation of Vegetables and flower crops. The private company partners were also involved particularly in Colour and Green Capsicum, Carnation and English Cucumber to give technical information to the farmers on management of crop under polyhouses and marketing avenues.

Demonstrations at CoE:

To address the above challenges, problems and issues, CoE has taken steps to demonstrate the appropriate technology in 26 acres of farm wherein necessary scientific technologies, inputs and collected field information, doing the right thing in the right place, at a right time and through right

way. Emphasis was also given to precisely evaluate optimum sowing density, estimate fertilizers and other input needs and to more accurately predict crop yields thereby avoiding unwanted practices in crop production, which will increase the efficient use of labour, water, inputs such as fertilizers, pesticides etc ,.

The centralized drip and automation technology was demonstrated at CoE by making best use of available bore well water by pumping and filling water at a common water storage structure through solar pumping system. This has helped in supply of required quantity of water and soluble nutrients through fertigation techniques even with interrupted supply of electricity. This has reduced lot of problem in drip irrigation even as the stored water will be available throughout the year for drip irrigation

Protected cultivation Interventions by CoE

- **Crop Selection**
- **Hands on training**
- **Climate control in Polyhouse**
- **Supply of Quality Planting Material**
- **Water management**
- **Advise at each critical crop stages**

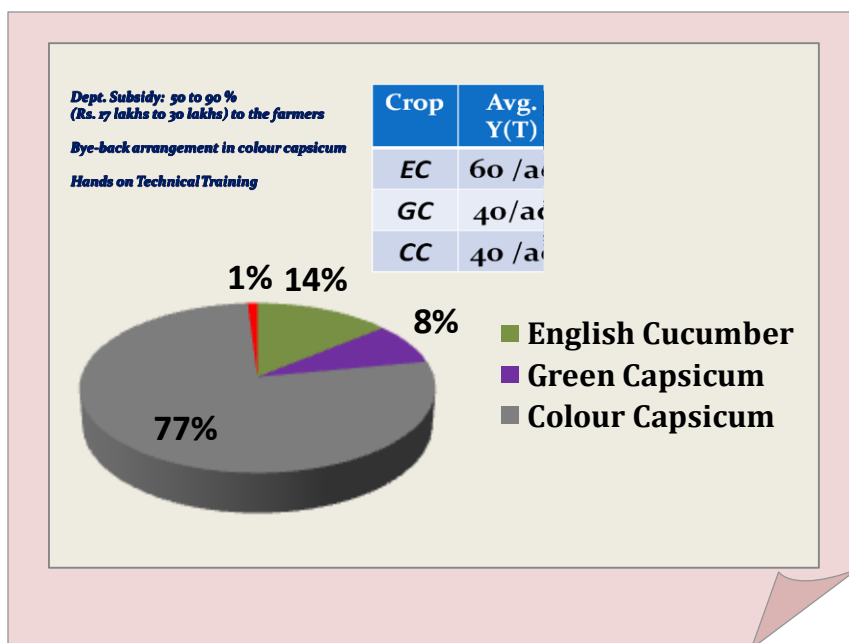
The key initiative taken up by the Horticulture Department, through CoE to address major issues in protected cultivation are mainly, *training farmers to construct the green house as per farmers need, water management by installing centralized drip irrigation system with the construction of water storage structures and operating drip irrigation, bed preparation, supply of genuine and quality planting materials, crop specific fertigation*

scheduling, pest and disease management and finally harvesting and marketing of the produce.

Adoption by Farmers:

This has resulted in appreciation by the farmers to adopt the technology by “seeing is believing”. The technology was adopted by 52 farmers out of 100 farmers, by constructing Naturally Ventillated Polyhouses and cultivation of suitable crops. The farmers cultivated the crops like colour capsicum, English cucumber, Green capsicum, Gerbera and Carnation crops.

Before the adoption of these crops farmers were cultivating paddy and sugarcane. These filed crops have failed to generate income without proper market prices at an average price of Rs. 30,000 (Paddy) to Rs.65, 000 (sugarcane) per acre income over a period of 4 to 12 months crop duration.



Monitory Benefit and Income Generation by Farmers:

The impact of interventions helped in doubling the income of the farmers through hi-tech horticulture from zero knowledge level in polyhouse cultivation. The table above depicts the average income generated per acre by the farmers was Rs. 3.2 lakhs per acre in English Cucumber in three and half months, Rs. 5.00 Lakhs in case of Green Capsicum and Rs. 12 lakhs in Colour Capsicum over a period of eight months.

The benefit was also extended to the farmers by assisting with subsidies from the department through RKVY, NHM and Krishi Bhagya schemes for construction and cultivation of crops in polyhouses ranging from 50% (Rs. 17.00 lakhs) to 90% (Rs. 30.00lakhs)for general and SC/ST farmers respectively per acre. These polyhouses are constructed in different taluks of Mandya, Chamarajanagr and Mysore districts. Local employment was generated through this activity as the polyhouse operations require labour daily at an average of 5 person days per polyhouse. Thus, the increase in the income by these farmers helped in gaining confidence in precision farming technologies of the area.