FARMER PARTICIPATORY APPROACHES FOR SOIL HEALTH MANAGEMENT- A CASE IN FARMER FIRST PROGRAMME OF ICAR CPCRI AT PATHIYOOR PANCHAYATH

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Soil health management was practiced by the farming community using soil fertility enhancement and management integrating traditional and time tested methods and strategies using locally available resources. In the case of coconut systems, integrated farming systems generally followed paved the ways for soil replenishment of nutrients through recycling and integrating appropriate crops/ farm enterprises. Recently soil test based nutrient management; supplementation is an accepted and recommended strategy for mitigating nutritional problems and improving efficiency of farming in general. The existing farmers practice was unscientific use of fertilizers and mostly, in no way connected to the crops or cropping system in their coconut gardens. The knowledge, skill and adoption of soil testing, as a compulsory practice is also not satisfactory as per the data collected from field situations.

Participatory soil health management in FFP

ICAR CPCRI is implementing the ICAR Farmer FIRST Programme (FFP) in Pathiyoor panchayath of Alappuzha district as a stakeholder participatory programme. Integrated nutrient management in coconut gardens of the FFP area, which is root (wilt) disease affected tract, is one of the major interventions as per the need analysis and prioritization of participating farmers.

The major steps of the participatory soil health management intervention were as follows:

1. Soil collection campaign initiated during May 2017

♦ Creating awareness among the coconut farmers for scientific and judicious application of nutrients in organic and inorganic form

♦ Involving coconut producers societies for facilitating and supporting soil sample collection in grid mode (5 ha grids)

♦ The soil test based use of nutrients and crop management practices require social mobilization and social engineering to enable the farmers to realize the need and taking soil samples and seeking out advice from the ICAR CPCRI scientists. The social mobilization included Participatory Rural Appraisal (PRA), neighborhood gatherings and distributing extension literatures.

♦ Farmer participants under Crop, Horticulture, natural resource management (NRM) were involved in the soil health campaign programme.

2. Participatory soil sampling

"Tell them and they will forget,

Show them and they may remember,

Involve them and they will understand"

This is the essence of experiential learning in farming among the communities.

Soil sampling techniques and awareness to management of soil, based on soil test results among coconut farming community is very crucial in achieving resource efficiency. Pathiyoor panchayath, the Farmer FIRST Programme location is situated in Alappuzha district, consists of 19 wards. At the 2001 India census, Pathiyoor (Village) had a population of 22,184 with 10,461 males and 11,723 females. The FFP is being implemented in all the 19 wards of the panchayath under six modules as different interventions. After conducting farmers' meeting in each village and depending upon soil type, crop, slope and management, about 30 per cent of farmers' fields were selected for sampling using stratified random methodology. The identified farmers were made into groups for demonstration of soil sampling procedure. Training programmes also conducted in various wards of the FFP panchayath. Collected soil samples were labeled with cluster name, village name and farmer's name. In most of the clusters, coconut producers' societies or ward members were involved in participatory soil sampling. Collected soil samples were analyzed in the soil chemistry laboratory at the ICAR CPCRI.

Map of Pathiyoor in Alappuzha district, Kerala state

Soil health cards were drawn based on the soil test results in 5 ha grid area and 61 soil health cards distributed in 2017 to the FFP farmer participants.

Soil health management among the coconut farmers consists of not only soil test based nutrition management but also following integrated balanced nutrition regime including organic and inorganic fertilizers.

The soil health management process at the panchayath level promotes scientific interventions in the following areas in FFP.

- Integrated root (wilt) disease management of coconut gardens in the 19 wards of the FFP intervention panchayath. The soil testing activities could help in the judicious application of nutrients to rejuvenate and regain the health of the palms as well as the soil for sustainable impact in income through yield improvement.

- Promoting organic recycling through composting, organic recycling, green manuring, basin management with cowpea, recycling of animal manures, mulching of coconut basins for moister conservation, cultivation in fallow land improving the texture and productivity of the soils and increasing area under intercrops for soil conservation and improving total income from unit area.

- Integration of technologies and ensuring scientists farmer cooperation, coordination and participatory interventions the soil health management in root (wilt) affected coconut areas could be achieved in sustainable manner

Outcome and impact expected

❍ Awareness creation and social pressure in participation and adoption of the soil testing campaigns

❍ Evolvement of social leadership in the basic natural resource management process

❍ Documentation of soil health status of panchayath

❍ Aid in rural Planning process for agriculture

❍ Tool for researchers in analysis of soil health status, problems and constraints in the process and impact of adoption in improving parametrs