

1. **Title** : **Promotion of organic cultivation for quality Black pepper production from Kolli hills of Tamil Nadu**
2. **Category** : **Agriculture**
3. **Challenge**

Black pepper is an introduced crop to Kolli Hills during 1970's as an alternative to the traditional cereals and millets. The soil and the environment suitability paved the way for black pepper cultivation in Kolli hills. Now the area under this spice crop is expanding at a faster rate. Since black pepper is cultivated under the mixed farming system the age of the pepper vine is very old and fertility of the soil is reduced. Also, the farmers are not aware about the high yielding varieties, improved package of practices, organic pepper cultivation and marketing of pepper. Thus, low productivity was reported. The low productivity is mainly attributed to the old and low yielding varieties, non-supply of quality inputs, planting materials, soil nutrient depletion by continuous cropping, incidence of slow wilt and quick wilt diseases, lack of awareness about post-harvest processing technique, scattered cultivation by small holders and lack of planning in long term investments in improvement of yield and quality of the crop. Nowadays, the most widely recognized farming system is the Organic farming and this evolved alternative for the chemical agriculture. Practicing organic culture for black pepper is environment friendly and leads to sustainable pepper production. In order to address these issues, the university has proposed a project to the Government of India under National Agricultural Development Program to achieve the strategies through diverse perspectives.

#### ***Issues***

- *Low yield*
- *Unavailability of quality planting materials*
- *Non-supply of organic inputs*
- *Lack advanced post-harvest processing techniques*
- *Lack of awareness*

To overcome these issues, the following activities were taken up under this project;

- ❖ Production and supply of quality planting material to the needy farmers.

- ❖ Soil health management through supply of organic inputs for organic cultivation.
- ❖ Integrated Disease Management with bio control agents
- ❖ Advanced post-harvest management
- ❖ Creation of awareness through capacity building programmes (Trainings, demonstrations and Mass Campaign)

#### 4. Initiative :

The project titled 'Promotion of organic cultivation for quality Black pepper production from Kolli hills of Tamil Nadu' was taken up by Tamil Nadu Agricultural University, Coimbatore with the financial support under NADP/RKVY to improve the economy of the pepper growers through enhanced production techniques of quality organic black pepper and post-harvest management;

##### **A. Production and distribution of quality planting material**

- Use of quality planting material is one of the most important criteria to increase the productivity of the crop. Panniyur-1 is the first high yielding hybrid. The quality

*Quality planting materials of 45,000 Nos. were produced at two TNAU Research Centres viz, **HRS, Yercaud & HRS, Thadiyankudisai** and distributed to the beneficiaries at Kolli hills for field demonstration.*

seedlings of Black pepper var. Panniyur-1 / Karimunda were propagated and distributed to the farmers of new plantation and old vineyards ready for rejuvenation/ replanting of high yielding

black pepper variety in Kolli hills. Making available high yielding quality pepper seedlings will facilitate the growers for taking up replanting and encourage new growers to take up activities to obtain high yield.

##### **B. Field Demonstration**

- To showcase the impact of organic production technologies, four field demonstrations were laid in the farmers' fields (1 acre each) at Kolli hills. Quality

planting materials produced through this project were distributed to the farmers. Good Agricultural Practices along with the application of organic inputs and bio control agents were taught and recommended to follow the organic cultivation techniques to improve the soil health of black pepper gardens and also for quality Black pepper production.

### C. Training

*Five hundred farmers (125 nos. per training) from Kolli hills were trained on the organic cultivation and post-harvest management of pepper.*

Four training programmes were conducted for the farmers of Kolli hills at Semmedu in coordination with the Department of Horticulture and Plantation Crops, Government of Tamil Nadu, Namakkal district, Tamil Nadu to disseminate the technologies on organic cultivation for quality black pepper, Good Agricultural Practices (GAP), Good Management Practices (GMP) and Organic Certification.

The pepper growers were trained on the given topics for organic black pepper production.

High yielding varieties, quality planting material, organic inputs and technologies were exhibited during the training programmes. Charts and posters depicting the importance of organic farming, black pepper varieties, technologies for organic production, organic inputs including bio fertilizers, bio control agents, integrated pest and disease management and scope on value addition and value added products of black pepper were displayed and explained to the farmers.

#### **Topics**

- 1) *Mass campaign focused on organic cultivation*
- 2) *Role of quality planting materials.*
- 3) *Improved / high yielding varieties*
- 4) *Technologies for organic production*
- 5) *Integrated pest and disease management using organic practices*
- 6) *Post-harvest technologies and Value addition*
- 7) *Branding of organic black pepper.*

**D. Mass Campaign:** Seeing is believing. Mass campaign was conducted for two days at Kolli hills and activities were demonstrated to 200 farmers to visualize the effect of key technologies for adoption in their own pepper vineyards.



**5. Key result/Insight/Interesting fact :**

Natural way of black pepper cultivation without addition of any inputs has depleted the organic matter content in the soil thus affecting the soil health. Technological interventions and awareness on organic pepper cultivation was promoted through trainings, mass campaign and demonstration on application of organic inputs, bio intensive management of quick and slow wilt, mechanized processing methods for production of clean, organic black pepper and value added products etc. Adoption of these technologies has resulted in increased yield of the dried pepper from 2.0 kg/vine/year to 2.50 kg/vine/year besides enhancing the fertility of the soil and sustainability of the crop. The farmers also witnessed the improvement in the quality of black pepper on adopting clean, hygienic and mechanized processing methods which helped them to get a premium price of 20% more than the price of non-organic produce. Farmers have started their own nursery for production of quality planting materials. Black pepper growers have started sales outlets for Kolli hills black pepper.

**6. Impact**

- Creation of awareness and making available quality planting materials has resulted in expansion of area under cultivation of pepper from 795 ha to 900 ha.

- Capacity building through training and demonstration of organic production of black pepper resulted in adoption of improved organic practices, increased use of organic inputs, bio inputs etc. which subsequently has resulted in increased productivity of organic black pepper (700 farmers benefitted).
- Farmers have started practicing hygienic processing methods by using peeler cum washer and spike thresher in order to produce clean and quality black pepper and white pepper organically.
- A Farmer has started an outlet for selling of Organic pepper produced in the farm.
- Farmers have started their own nurseries and outlets for production of quality planting material.
- Soil health is improved by application of organic amendments.



**Organic Outlet**

**Impact of the NADP project (Before and After implementation of scheme)**

S. No.	Parameters	Before implementation of NADP scheme	After implementation of NADP scheme (2016-17 & 2017-18)
1.	Growth of pepper vines	Moderate growth	Growth is dense and lush green
2.	Inputs used	Insufficient	Bio fertilizers and organic inputs were used optimally
3.	Pest incidence	No control measures taken	Measures taken for management of pest organically
4.	Disease incidence	No control measures taken	Prophylactic spray of Bordeaux mixture and drenching were practiced to control the quick wilt and slow wilt diseases of black pepper
5.	Quality of black pepper	Medium	Good
6.	Yield of black pepper	800kg /ha	1000 kg/ha
7.	Income	Rs. 4.80 lakhs/ha (Avg. price Rs. 600/kg)	Rs. 7.50 lakhs/ha (Avg. price Rs. 750/kg)

**The following farmers have started their own nurseries and sales outlet in the project area**

**1. Mr. C. Rajendran**

S/o Chinnamuthu,  
Perumkiraipatty , Vizhavanthinadu,  
Semmedu P.O., Kolli Hills – 637 411.

**2. Mr. K. Chinnaiyan**

S/o Kali,  
Kuchikirayapatty, Vizhavanthinadu  
Semmedu P.O., Kolli Hills – 637 411.

- Awareness has been created on the selection of high yield varieties and their organic management practices.

**7. Lessons learned**

There are 16 quaint tribal villages in Kolli hills. Even though, Black pepper is cultivated in a measurable area, the pepper growers in the Kolli hills have experienced bitter incidences of poor yield and instability in the prices for their produces. The assessment of cultivable area, agro climatic conditions, farmers' interests and potential of the crop helped us to achieve the target. Timely planning and execution of the proposed activities such as training on production and marketing of the organic pepper produces, live demonstrations in the farmers' fields through input supply and machineries and mass contact programme motivated the farmers to adopt new technologies in their farms. A total of 700 tribal farmers were trained under this NADP project. It is believed that the direct beneficiaries of this project will transfer the organic packages of black pepper cultivation to their fellow tribal farmers in Kolli hills. As a result, there is an expansion in cultivated area, increased production and productivity and ultimately increased income to the black pepper farmers of Kolli hills.

**8. Supporting quotes and images :**

The implementation of this NADP project imparted the technical knowhow

to the pepper growers of Kolli hills by TNAU and the pepper growers identified the high yielding quality vines of pepper. The programme is very much useful in area expansion under black pepper in Kolli hills and it imparted capacity building for the establishment of pepper nursery by the growers and organic production of black pepper from Kolli Hills.

a) **Quotes from**

: **Mr. C. Rajendran**

S/o Chinnamuthu

Perumkiraipatty, Vazhavanthinadu

Semmedu P.O, Kolli hills

He has been doing farming in his own land for the past 20 years. He did not know the different varieties of black pepper. Due to implementation of NADP (RKVY) scheme, he is able to know the varieties of black pepper apart from Panniyur 1 which he is growing in his land. He has developed interest to produce quality plants of pepper for distribution to his fellow farmers. The trainings conducted under the NADP scheme provided him with the practical knowledge on selection of high yielding varieties and production of quality rooted cuttings of black pepper. He has started a nursery in his own land to fulfill his ambition of production and distribution of good quality planting material of black pepper to his fellow farmers in Kolli hills.



b) **Quotes from**

: **Mr. P. Ayyasamy**

Moolacholai

Edapulinadu, Kolli Hills

He is a school dropout. He is involved in farming for the past 25 years and is growing black pepper, coffee, silver oak, jack fruit etc. Earlier he was growing pepper by adopting conventional practices. He attended NADP trainings at Kolli hills and he was exposed to organic inputs, organic production of black pepper, identification of pests and diseases affecting this crop, preparation



of Bordeaux mixture and spraying. By the adoption of organic practices in his black pepper garden, the pepper vines are now lush green in colour and healthy. There is an increase in the yield of black pepper from 5 kg / vine to 7 kg/vine. As a



result, there is an increased yield of 2000 kg of black pepper from his 2.5 acres of land. Due to implementation of NADP project at Kolli hills, black pepper production and productivity has increased due to which the income has been increased from Rs. 7.50 lakhs to 15.00 lakhs.





**Training to farmers on organic black pepper cultivation**



**Exhibits on organic cultivation techniques for black pepper & organic inputs**

## 9. Additional information

Dr. R. AnandaKumar, IAS, The Executive Director, Tamil Nadu Watershed Development Agency, Government of Tamil Nadu and Dr. M. Chinnadurai, Director, CARDS and Nodal Officer(NADP), TNAU have visited the demonstration plot of organic cultivation of black pepper and interacted with the farmer.



### Contact Person

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## 10. Check list

No.	Question to consider	Yes	No
1.	Is the story interesting to the target audience of the project/ activity report?	√	
2.	Does the story explain what new insights the project brings? What is the main lesson learned from this story? Does the story describe a key insight on what works and what doesn't and something that future project could build on	√	
3.	Does the story describe the outcomes of the project produced and the people who are benefitting? What changes - in skills, knowledge, attitude, practice, or policy - has the project brought, and who is benefitting from these changes	√ organic production of quality black pepper	

<b>4.</b>	Does the story make a compelling point that people will remember? Does the story show how the project makes a difference to improving livelihoods and lessening poverty	√	
<b>5.</b>	Does the story provide an interesting fact that people will remember? For example, how much yield increased, how many hectares of land could become more productive from this innovation or technology?	√	
<b>6.</b>	Does the story explain what kind of impact this innovation or technology could have if scaled up?	√	
<b>7.</b>	Does the story show which partners contributed and how?		-
<b>8.</b>	Does the story include quotes from stakeholders or beneficiaries?	√	
<b>9.</b>	Have I provided links to other media (journal articles, website news, newsletter, blogs, and annual reports of other programme / project) that also feature this story?	√	
<b>10.</b>	Have I provided the contact details of people who can provide more information?	√	