

## **Empowering the livelihood of tribal farmers of Devikulam, Idukki in Kerala through small cardamom, Black pepper, ginger cultivation, Beekeeping and Poultry birds**

**(Sponsored by ICAR-NBAIR under TSP and Implemented by KVK-Idukki)**

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Small cardamom, Black pepper and Ginger are important commercial crops which can improve livelihood of farmers. They also play a crucial role in food and nutritional security of tribal's. The tribal belt of Idukki (Chembakatholukudi and Pachapulkudi) in Kerala has congenial climatic conditions for production of small cardamom Black pepper and ginger cultivation at commercial level. Under TSP, systematic effort was undertaken to improve the area and production of small cardamom Black pepper and ginger cultivation by careful application of improved technologies. Thus, focus was given in conduct of field demonstrations of improved technologies at farmer's fields through improved seedlings distribution, knowledge dissemination, capacity building and entrepreneurship building.

About 100 tribal farmers were selected in the form of 2 groups under this scheme. Each group comprised 50 selected farmers with half acre of land for conduct of field demonstrations, training and input distribution. Three tribal villages have been selected from Devikulam Block (Chinnakanal tribal two villages (Chembakatholukudi and Pachapulkudi) for implementation of TSP on small cardamom, Black pepper and ginger cultivation. In total, 100 demonstrations on IPDM and improved production technologies were undertaken. All the selected two tribal villages are benefited by commercial cultivation of small cardamom, Black pepper and ginger cultivation.



**Tribal sub Plan programme inaugurated at Chembakatholukudi tribal village**



**Field visited of small cardamom and Black pepper at Chembakatholukudi**

## 1) Empowering tribal people with IPM techniques in tribal settlements at Chembakatholukudi and Pachapulkudi, Idukki, Kerala

The IPM technology adopted by 100 farmers in 125 fields (25.78 ha area) in Small cardamom, Black pepper, and Ginger. As a result, production in IPM-treated plots significantly improved (60-90%), being 20-30% higher than the local practice. Supplied and motivated by application of the bio-agents of *Trichoderma harzianum*, *Pseudomonas fluoresces*, Microbial consortium and Neem oil applied in the IPM fields. Supported the availability of honey bees which are main pollinator of small cardamom, further enhance the potential production of small cardamom in this area to bee box to tribal farmers. The organic production of ginger technology was imparted through skill based trainings and demonstrations at farmers' field and successfully adopted the improved ginger cultivation technology under organic condition. Integrated Pest and Disease Management (IPDM) and Integrated Nutrient Management (INM) in Small cardamom, Blackpepper, and Ginger were demonstrated.



Ginger field visited and demonstration was conducted for the identification of soft rot disease in ginger field at Pachapulkudi

## 2) Empowering tribal people with beekeeping techniques in tribal settlements at Chembakatholukudi and Pachapulkudi, Idukki, Kerala

ICAR-Krishi Vigyan Kendra, Idukki was organized beekeeping training to the tribal people living in one panchayat of Idukki namely Chembakatholukudi and Pachapulkudi and also supplied 200 bee Boxes in all the regions put to gather. The tribal people of India have mastered the skill of hunting the Indian bees, *Apis cerna indica* and harvesting the honey. However, they have not learnt the skill of rearing honey bees in boxes and extracting honey in hygienic way. In order to teach the tribal people on the techniques of rearing the Indian honey bee *Apis cerana indica*, in boxes, trainings were provided to the tribal people in one panchayat of Idukki and 200 bee boxes were distributed to them. The tribal people in all the locations were very responsive and learnt the techniques of beekeeping very patiently. They were taught the techniques of honey extraction, general and seasonal management, and pest and disease management effectively. In the years to come the tribal people are sure to rear honey bees in boxes and sell honey that is extracted in a hygienic way and processed to increase shelf life.





**Bee box and bio-inputs supplied and field visited at Takkudi tribal village**

**3) Empowering tribal people with Poultry birds in tribal settlements at Chembakatholukudi and Pachapulkudi, Idukki, Kerala**

Distribution of poultry as part of the ICAR-NBAIR Project entitled 'Sustainable livelihood enhancement of tribal in remote tribal villages of Devikulam block, Idukki district in Kerala' was conducted at B L R a m Chemakathozhukudi of Chinnakannal village. Smt Sini, President, Chinnakannal Grama Panchayat inaugurated the programme by delivering valuable suggestions. She emphasized on the importance of Farmer Seminar for sustaining the productivity of the location. Farmer seminar on awareness on importance of prevention and control of infectious as well as contagious diseases and their control measure practices were delivered to the farmers. Farmers were made aware on the Scientific Poultry practices through this Farmer Seminar and also free distribution of Poultry birds supplied to the selected ICAR-NBAIR tribal farmers and farm women beneficiaries to enhance their nutritional security. The Farmer Seminar program was made effective by conducting awareness training on poultry rearing practices including Ethno- Veterinary Medicine practices.



**Impact of TSP:**

The production of Small cardamom, Black Pepper and Ginger in Chembakatholukudi and Pachapulkudi has been increased more than three times after initiation of TSP. Improved yield with reduced pesticide load through bio-intensive approach of IPM has become popular among the farmers. The IPM adopted farmers realized higher yield of Spices 520kg, 345kg and 275kg in Small cardamom, Black pepper and Ginger per acre. The organic production of ginger technology was imparted through skill based trainings and demonstrations at farmers' field and successfully adopted the improved ginger cultivation technology under organic condition. The support of ICAR-NBAIR through Tribal Sub-Plan. Socio-economic status of selected farmers under TSP has been significantly improved due to the intervention of ICAR-KVK, IDUKKI through TSP scheme.

**List of tribal farmers in Chembakatholukudi and Pachapulakudi**

| <b>Sl. No.</b> | <b>Farmer Name</b> | <b>Village</b>    | <b>Mobile number</b> | <b>Adhar number</b> |
|----------------|--------------------|-------------------|----------------------|---------------------|
| 1.             | Sekharram G        | Pachapulakudi     | 8606134312           | 616047695959        |
| 2.             | Murukan            | Pachapulakudi     | 9747343831           | 269455273107        |
| 3.             | Bose P             | Pachapulakudi     | 6238216527           | 269098179131        |
| 4.             | Ramar              | Pachapulakudi     | 9495603947           | 924885379547        |
| 5.             | Muthuraman         | Pachapulakudi     | 6238680094           | 963488211066        |
| 6.             | Ponraj Velappan    | Pachapulakudi     | 9497194120           | 733481487279        |
| 7.             | Sasi N             | Pachapulakudi     | 9544131286           | 315772393909        |
| 8.             | Elsammal           | Chembakatholukudi | 8547700398           | 448818540157        |
| 9.             | Nallamuthu         | Pachapulakudi     | 9496064271           | 765621359503        |
| 10.            | Ganeshan Raju      | Pachapulakudi     | 9495973117           | 264109524312        |
| 11.            | Vijayamol          | Pachapulakudi     | 9188004387           | 739698074631        |
| 12.            | Dhanaraj           | Chembakatholukudi | 9447969471           | 477950038931        |
| 13.            | Sreekumar          | Pachapulakudi     | 8281812272           | 898295859639        |
| 14.            | Alexpandi          | Pachapulakudi     | 6235633614           | 299364936208        |
| 15.            | Kasi               | Chembakatholukudi | 7510978239           | 923796286073        |
| 16.            | Anatharaj          | Chembakatholukudi | 9383441299           | 780688023769        |
| 17.            | Raman              | Chembakatholukudi | 9495603947           | 819856404643        |
| 18.            | Selvaraj           | Chembakatholukudi | 8589915248           | 948139202426        |
| 19.            | Pandi              | Tankkudi          | 9446971595           | 222323733748        |
| 20.            | Maruthumuthu       | Chembakatholukudi | 9496179250           | 314933854578        |
| 21.            | Thangammal         | Chembakatholukudi | 9495840471           | 826712417613        |
| 22.            | Parasakthi         | Chembakatholukudi | 9188347136           | 654739570995        |
| 23.            | Palraj             | Chembakatholukudi | 8547861636           | 264992759817        |
| 24.            | Sivan              | Chembakatholukudi | 9495840471           | 322843282774        |
| 25.            | Kalimuthu          | Tankkudi          | 8301874869           | 549749378837        |
| 26.            | Parasuraman        | Tankkudi          | 9497039981           | 669391281741        |
| 27.            | Maharaj            | Chembakatholukudi | 9496118709           | 811064993387        |
| 28.            | Rajamani           | Tankkudi          | 9526706860           | 263062191963        |
| 29.            | Pandiraj           | Chembakatholukudi | 9447969471           | 256697766064        |
| 30.            | Meenamamma         | Chembakatholukudi | 8289891915           | 414859712255        |
| 31.            | Raman              | Chembakatholukudi | 9645289811           | 416861550945        |
| 32.            | Ramalingam         | Chembakatholukudi | 8606482452           | 797595318520        |
| 33.            | Chinnathambi       | Chembakatholukudi | 8599152480           | 897010230825        |
| 34.            | Murugan            | Tankkudi          | 8086155942           | 656152669475        |
| 35.            | Durairaj           | Chembakatholukudi | 8547858713           | 653018615554        |
| 36.            | Rajendran          | Tankkudi          | 9400258062           | 727645288280        |
| 37.            | Mariappan.M        | Chembakatholukudi | 7560908520           | 284442951898        |
| 38.            | Durairaj           | Tankkudi          | 8281553180           | 855143890763        |
| 39.            | Chinnamani         | Chembakatholukudi | 8289911456           | 552724653283        |
| 40.            | Kanakam Kashi      | Chembakatholukudi | 7510978239           | 616725752144        |
| 41.            | Gandhi             | Chembakatholukudi | 9539818611           | 724052044344        |
| 42.            | Sivaraj            | Tankkudi          | 8078741528           | 640153565896        |
| 43.            | Anandaraj          | Pachapulakudy     | 9446983559           | 329665566917        |
| 44.            | Bhagyam            | Chembakatholukudi | 9447801636           | 305608796513        |
| 45.            | Vanaraj            | Chembakatholukudi | 8547861636           | 618959556471        |
| 46.            | Sakthi             | Chembakatholukudi | 9590248256           | 431278058833        |
| 47.            | Asoken             | Chembakatholukudi | 9447192360           | 448109987338        |
| 48.            | Kumar              | Chembakatholukudi | 9495880402           | 345440973179        |
| 49.            | Suresh             | Chembakatholukudi | 8547703980           | 206564578920        |
| 50.            | Pushparaj          | Chembakatholukudi | 9495011590           | 896381459667        |
| 51.            | Chellam            | Chembakatholukudi | 9946107052           | 445015153118        |
| 52.            | Soundarajan        | Tankkudy          | 7025467695           | 925849644713        |
| 53.            | Mathanakumar       | Pachaipulikudi    | 8921538728           | 745398349551        |

|      |               |                   |            |              |
|------|---------------|-------------------|------------|--------------|
| 54.  | Karthi        | Chembakatholukudi | 9074939419 | 926020723817 |
| 55.  | Chandran      | Chembakatholukudi | 8289911456 | 481615955124 |
| 56.  | Sreedevi      | Chembakatholukudi | 6282035316 | 308684981391 |
| 57.  | Kuppusamy     | Chembakatholukudi | 9447743844 | 370521946662 |
| 58.  | Angammal      | Chembakatholukudi | 9074939419 | 457281667965 |
| 59.  | Ramanathan    | Chembakatholukudi | 8546907290 | 792682417295 |
| 60.  | Palanichami   | Chembakatholukudi | 7510702682 | 945269580156 |
| 61.  | Meenama       | Chembakatholukudi | 9446563502 | 414859712255 |
| 62.  | Kathirvel     | Chembakatholukudi | 7306647347 | 877368376408 |
| 63.  | Ganapathi     | Chembakatholukudi | 9496226009 | 385708220766 |
| 67.  | Bhagyaswamy   | Chembakatholukudi | 9349702761 | 952809549761 |
| 68.  | Andandas      | Chembakatholukudi | 9497194132 | 649287135621 |
| 69.  | Mahalingam    | Chembakatholukudi | 8590073416 | 701271602383 |
| 70.  | Kumar         | Chembakatholukudi | 9562899474 | 619483838871 |
| 71.  | Manikandan.C  | Chembakatholukudi | 9399568458 | 945662808759 |
| 72.  | Manikandan.S  | Chembakatholukudi | 9048642386 | 270772279026 |
| 73.  | Muthuiraj     | Chembakatholukudi | 6238533509 | 541311619031 |
| 74.  | Rajan         | Chembakatholukudi | 9496064271 | 560487802865 |
| 75.  | Dhanalashkmi  | Chembakatholukudi | 8086528051 | 584074014331 |
| 76.  | Shobhana      | Chembakatholukudi | 6282076152 | 402847789352 |
| 77.  | Killyammal    | Chembakatholukudi | 9645289811 | 483999749972 |
| 78.  | Sakthi        | Chembakatholukudi | 9048730599 | 398125938740 |
| 79.  | Pandi T       | Chembakatholukudi | 9446971595 | 532570021633 |
| 80.  | Manu S        | Chembakatholukudi | 7306035059 | 402567758054 |
| 81.  | Kanakaraj     | Tankkudi          | 9400317991 | 841538362989 |
| 82.  | Jayaraj       | Tankkudi          | 6282351409 | 749033582159 |
| 83.  | Suppammal     | Chembakatholukudi | 7907658050 | 290038185300 |
| 84.  | Vellaswami    | Chembakatholukudi | 9496118709 | 758414831876 |
| 85.  | Chokkar       | Chembakatholukudi | 9400317991 | 739635179459 |
| 86.  | Sivakumar     | Chembakatholukudi | 8547861636 | 618070117039 |
| 87.  | Jayaraj       | Pachapulkudy      | 9188534136 | 968927266390 |
| 88.  | Sivakanthan P | Pachapulkudy      | 8281179150 | 344288014570 |
| 89.  | Arjunan R     | Pachapulkudy      | 8281442679 | 343940855416 |
| 90.  | Udayaraj      | Pachapulkudy      | 8547858713 | 530985078277 |
| 91.  | Chanrakumar C | Pachapulkudy      | 9447743844 | 789822483394 |
| 92.  | Rajakumari    | Pachapulkudy      | 9496179250 | 833144106552 |
| 93.  | Krishnakumar  | Pachapulkudy      | 7510978239 | 803315361533 |
| 94.  | Sarojini      | Pachapulkudy      | 9562899474 | 864280455135 |
| 95.  | Prabhulavathi | Chembakatholukudi | 6282155634 | 532875411567 |
| 96.  | Arumugham     | Chembakatholukudi | 9544994465 | AFU0841833   |
| 97.  | Karukkan      | Chembakatholukudi | 8086528051 | 634238399968 |
| 98.  | Madanakumar   | Chembakatholukudi | 8086350085 | 272516638768 |
| 99.  | Menka S       | Chembakatholukudi | 8519915248 | 631976150598 |
| 100. | Nonappan      | Chembakatholukudi | 8086350085 | 999228631175 |



