Organic farming Cropping system

Organic + chemical - reference Pure crop - reference

Organic Pepper + Tree spices+ Coconut + Arecanut

Organic certified Pepper + cardamom+ Tree spices + Cocoa

Landraces Grafting

No diversity - reference No grafting - reference

Medium diversity Grafting with Brazilian Thippali

Selections with climate resilience

Attributes and levels were identified through pilot surveys which were validated by subject experts from IISR, CMFRI, and agricultural extension scientists from CRS , Pamapadumpara and regional stations under Kerala Agriculture University.

The attribute levels are given based on farmers’ preference for that level regarding climate change adaptation

|  |  |  |
| --- | --- | --- |
| Attribute | Definition | Attribute levels |
| Organic farming | Degree of organic practices followed | A mix of chemical and organic methods works for adaptation to climate change |
| Pure crops grown as organic help to mitigate climate change-associated management problems |
| Certified organic farming gives premium prices to manage losses associated with yield fluctuations |
| Grafting | Farmers use *Piper colubrinum* as rootstock on pepper *to* increase biotic and abiotic stress | Grafting is not effective in long term |
| Grafting for the production and sale of bush pepper as a component of home gardens |
| Planting grafted plants in the main field gives a stable yield |
| Landraces | Level of varietal diversity | 1-2 varieties |
| More than 2 varieties |
| More than 2 selections with climate resilience |
| Intercrops | Number of tiers of intercrops | Sole crop |
|  |  | Two tiers with tree spices, coffee in or areca nut and coconut |
|  |  | Three tiers with cardamom, coffee, cocoa, and tree spices |

Effectiveness of climate change adaptation practices

|  |  |  |
| --- | --- | --- |
| * + **1111** * Chemical and organic inputs are employed in farming * Grafting is not effective * Genetic dive * Sole crop   **1** | * + **1232** * Organic farming is less effective * Grafting is medium effective * Maintaining diverse landraces is highly effective * Raising intercrops is medium effective   2 | * + **1323** * Organic farming is less effective * Grafting is highly effective * Maintaining diverse landraces is medium effective * Raising intercrops is highly effective   **3** |