

RFD
RESULTS - FRAMEWORK DOCUMENT

2011-2012

INDIAN INSTITUTE OF SPICES RESEARCH
Post Bag No: 1701, Marikunnu Post, Calicut – 673 012, Kerala.

Section 1:

Vision, Mission, Objectives and Functions

Vision

- Enhancing productivity of spices for meeting growing domestic demand and to be the global leader in spices export

Mission

- Utilize the scientific, technological and traditional strengths for sustainable spice production

Objectives

- Strengthening frontier research areas through interdisciplinary approach
- Conservation of genetic resources/ germplasm for sustainable use
- Production management by improving soil and plant health, agricultural processing and supply of good quality planting materials of improved varieties of spices
- Enhancing productivity of spices
- Development of disease diagnostics and value addition in spices
- Strengthening of extension system/tot
- Strengthening of higher education / HRD

Functions

To attend the research and development of high yielding and quality varieties and sustainable production, protection and post harvest technologies, training and dissemination of developed technologies to the stake holders for increasing the production and productivity of spices.

Section 2:

Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight (%)	Action	Success indicator	Unit	Weight %	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
1. Strengthening frontier research areas - Interdisciplinary approach for Management of <i>Phytophthora</i> diseases	15.0	Strengthening of infrastructure of institution - Establishment of central instrument facility	Timeliness of completion	Date	5.0	31/7/2011	15/8/2011	31/8/2011	15/9/2011	30/9/2011
		Whole genome sequencing of <i>Phytophthora capsici</i>	Timeliness of completion	Date	5.0	31/7/2011	15/8/2011	31/8/2011	15/9/2011	30/9/2011
		Transcriptome sequencing of <i>Piper colubrinum</i> challenged with <i>Phytophthora</i> for resistance	Timeliness of completion	Date	5.0	31/10/2011	15/11/2011	30/11/2011	15/12/2011	31/12/2011
2. Conservation of Genetic resources/ germplasm for sustainable use	15.0	Collection and conservation of genetic resources of spices, biocontrol agents etc for sustainable use	Number of germplasm accessions added to Gene Bank and documented	Number	10.0	130	110	85	60	40
		Development of core collections in cardamom	Number of core collections through SSR markers	Number	5.0	75	50	30	20	10
3. Production management by improving soil and plant health agricultural processing	10.0	Optimization of location specific horticultural/ INM/ IPM technology management	Number of technologies developed/ tested/ validated	Number	10.0	4	3	2	1	-
4. Enhancing productivity of spices	15.0	Production of breeder seed/ planting materials in black pepper and nutmeg	Annual quantity of planting material produced	Number ('000s)	10.0	150	125	100	75	50
		Production of breeder seed/ planting materials in ginger and turmeric	Annual quantity of seed rhizomes produced	('000 kg)	5.0	8	6	5	4	2
5. Development of disease diagnostics and value addition in spices	10.0	Development of diagnostics / value added products and identification of potential nutraceuticals	Number of diagnostics/ value added products in spices and <i>in silico</i> identification of novel nutraceutical compounds	Number	10.0	4	3	2	1	-

6. Strengthening of extension system (TOT)	15.0	Trainings and demonstrations	Number of demonstration plots/ exhibitions	Number	5.0	10	8	6	4	2
			Number of trainings to farmers/ Agrl. officers and others	Number	5.0	20	15	10	8	5
		Extension through printed and electronic media	Publication of extension booklets/ field seminars / agroclinics/ radio talks video films	Number	5.0	20	15	10	5	2
7. Commercialization of technologies developed and promoting public-private partnership	5.0	Partnership development, including licensing of ICAR technologies	Number of partners (private sector) Identified for technology (Bio control, Tissue culture multiplication, Certified nurseries, ATL) commercialization	Number	3.0	4	3	2	1	-
		Licensing stake holders for seed rhizome multiplication	Number of licensees identified and authorized for seed production	Number	2.0	8	7	6	5	4
8. Strengthening of higher education/ HRD	4.0	Training	In international/ national labs	Number	2.0	3	2	1	-	-
		Higher education	Ph.D, Post M.Sc, M.Sc dissertations/ Trainings	Number	2.0	10	8	6	4	2
9. Effective functioning of the RFD system	11.0	Timely submission of RFD for 2011-12	On-time submission	Date	2.0	June 10, 2011	June 14, 2011	June 16, 2011	June 20, 2011	June 22, 2011
		Timely submission of Results for 2011-12	On-time submission	Date	1.0	May 1 2012	May 3 2012	May 4 2012	May 5 2012	May 6 2012
		Finalize a Strategic Plan for Institute	Finalize the Strategic Plan for next 5 years	Date	2.0	Dec. 10 2011	Dec. 15 2011	Dec. 20 2011	Dec. 24 2011	Dec. 31 2011
		Identify potential areas of corruption related to organisation activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption	Date	2.0	Dec. 10 2011	Dec. 15 2011	Dec. 20 2011	Dec. 24 2011	Dec. 31 2011
		Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter	Date	2.0	Dec. 10 2011	Dec. 15 2011	Dec. 20 2011	Dec. 24 2011	Dec. 31 2011
Create a Sevottam Compliant system to redress and monitor public Grievances	Date		2.0	Dec. 10 2011	Dec. 15 2011	Dec. 20 2011	Dec. 24 2011	Dec. 31 2011		

Section 3: Trend Values of the Success Indicators

Objective	Action	Success indicator	Unit	Actual value for FY 9/10	Actual value for FY 10/11	Target value for FY 11/12	Projected value for FY12/13	Projected value for FY 13/14
1. Strengthening frontier research areas - Interdisciplinary approach for Management of <i>Phytophthora</i> diseases	Strengthening of infrastructure of institution - Establishment of central instrument facility	Timeliness of completion	Date	-	-	15/8/2011	-	-
	Whole Genome sequencing of <i>Phytophthora capsici</i>	Timeliness of completion	Date	-	-	15/8/2011	-	-
	Transcriptome sequencing of <i>Piper colubrinum</i> challenged with <i>Phytophthora</i> for resistance	Timeliness of completion	Date	-	-	15/11/2011	-	-
2. Conservation of Genetic resources/ germplasm for sustainable use	Collection and conservation of genetic resources of spices , biocontrol agents etc for sustainable use	Number of germplasm accessions added to Gene Bank and documented	Number	105	108	110	120	130
	Development of core collections in cardamom*	Number of core collections through SSR markers	Number	-	-	50	70	-
3. Production management by improving soil and plant health agricultural processing	Optimization of location specific horticultural/ INM/ IPM technology management	Number of technologies developed/ tested/ validated	Number	2	2	3	3	2
4. Enhancing productivity of spices	Production of breeder seed/ planting materials in black pepper and nutmeg	Annual Quantity planting material produced	Number ('000s)	152	120	125	150	175
	Production of breeder seed/ planting materials in Ginger and turmeric	Annual Quantity of seed rhizomes produced	('000 kg)	12	10.5	6	8	10
5. Development of disease diagnostics and value addition in spices	Development of diagnostics / value added products and identification of potential nutraceuticals	Number of diagnostics/ value added products in spices and <i>in silico</i> identification of novel nutraceutical compounds etc	Number	2	2	3	2	3
6. Strengthening of extension system (TOT)	Trainings and demonstrations	Number of demonstration plots/ exhibitions	Number	6	6	8	10	12
		Number of trainings to farmers/ Agrl. officers and others	Number	12	12	15	20	25
	Extension through printed and electronic media	Publication of extension booklets/ field seminars / agroclinics/ radio talks video films	Number	10	10	15	20	25
7. Commercialization of technologies developed and promoting public-	Partnership development, including licensing of ICAR technologies	Number of partners (private sector) Identified for technology	Number	2	3	3	4	5

private partnership		(Bio control, Tissue culture multiplication, Certified nurseries, ATL) commercialization						
	Licensing stake holders for seed rhizome multiplication**	Number of licensees identified and authorized for seed production	Number	-	2	7	5	6
8. Strengthening of Higher education/ HRD	Training	In international/ national labs	Number	-	3	2	1	1
	Higher education	Ph.D, Post M.Sc, M.Sc dissertations/ Trainings	Number	5	7	8	9	10
9. Effective functioning of the RFD system	Timely submission of RFD for 2011-12	On-time submission	Date	-	-	June 14, 2011	-	-
	Timely submission of Results for 2011-12	On-time submission	Date	-	-	May 3 2012	-	-
	Finalize a Strategic Plan for Institute	Finalize the Strategic Plan for next 5 years	Date	-	-	Dec. 15 2011	-	-
	Identify potential areas of corruption related to organisation activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption.	Date	-	-	Dec. 15 2011	-	-
	Implementation of Sevottam	Create a Sevottam compliant system to implement, monitor and review Citizen's Charter		Date	-	-	Dec. 15 2011	-
Create a Sevottam Compliant system to redress and monitor public Grievances			Date	-	-	Dec. 15 2011	-	-

(* This activity is targeted for the years 2011/12 and 2012/13 only. Hence may not find values for previous years; ** Licensing of released varieties started from 2010/11 only)

Section 4:

Description and definition of success indicators and proposed measurement methodology

- Objective 1: Under the inter disciplinary research on problem solving mode, the genetic basis of Phytophthora disease will be understood by whole genome sequencing of the organism, which will help in developing diagnostics and management strategies against the pathogen infecting variety of horticultural crops.
- Objective 2: The germplasm will be collected from different areas including different genotypes for improving the genetic diversity of spice crops and utilization of the same in crop improvement programmes. The collected germplasm will be screened with ISSR markers for grouping into core collections for specific characters. The number of accessions and the markers used for screening will be used as indicators.
- Objective 4: The disease free nucleus planting materials of released varieties of spices will be multiplied in large quantity (in thousand numbers for black pepper and nutmeg and in tonnes of ginger and turmeric) for supply to Departmental nurseries, progressive farmers or stake holders for further adoption and spread.
- Objective 5: The diagnostic method for detecting of pathogen in the planting material itself is the need of the hour for producing disease free planting materials. The value added products will be developed for improving the consumption or export potential of spices. The nutraceutical properties of spices will be explored to diversify its use in medical industry.
- Objective 7: The developed technologies like diagnostic kits and bio control agents need to be commercialized for proper adoption at various levels. The secondary multiplication of seed materials will also be done by licensing entrepreneurs to meet the demand for quality seed materials of released varieties.
- Objective 8: As a centre for training research methodologies and technology upgradation, institute serves as a centre of excellence for MSc and PhD students from various universities for their dissertation works in the advanced areas of agricultural and basic research.

Section 5:

Specific Performance Requirements from other Departments

- Establishment of central instrumentation facility is done by CPWD
- The whole genome sequencing is done in collaboration with The Centre for Genome Analysis, New Delhi
- The seed materials are produced based on the demand from Dept. of Agriculture of State Governments, NHM, Spices Board and progressive farmers.
- The technologies like bio-control agents, diagnostics etc. are commercialized to private entrepreneurs, Dept. of Agriculture and Farmers groups for better spread and adoption.
- Licensing for large scale seed rhizome production is done with stake holders like entrepreneurs or interested farmers groups/ seed companies.
- The institute is a recognized centre of research for doing M.Sc. and Ph.D. under Calicut University, Mangalore University, Kannur University and Nagarjuna University.

Section 6:

Outcome / Impact of activities of Institute

S. No	Outcome / Impact of organisation /RCs	Jointly responsible for influencing this outcome / impact with the following organisation (s) / departments/ministry(ies)	Success Indicator (s)	Unit	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
1.	Production of quality seed and planting materials of improved varieties of spices crops	Ministry of Agriculture, Ministry of Commerce, Ministry of Environment & Forests, Ministry of Rural Development and State Governments, NGOs and Private partners	Increase in Spice crops productivity	%	1.2	1.3	1.5	1.6	1.75
			Production of quality planting materials in black pepper and nutmeg	Number ('000s)	152	120	125	150	175
			Production of quality planting materials in Ginger and turmeric	('000 kg)	12	10.5	6	8	10
2.	Commercialization of technologies	Private partners/ Planters/NGOs/State Departments	Number of partners Identified for technology /Licensed for commercialization	Numbers	2	8	5	6	7