



RESULTS - FRAMEWORK DOCUMENT(RFD)

For

INDIAN INSTITUTE OF SPICES RESEARCH

(2012-2013)

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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

1. Strengthening frontier research areas
2. Conservation of Genetic resources/ germplasm for sustainable use
3. Production management by improving soil and plant health
4. Enhancing productivity of spices
5. Development of disease diagnostics and value addition in spices
6. Strengthening of extension system (TOT)
7. Commercialization of technologies developed and promoting public-private partnership
8. Strengthening of higher education/ HRD

Functions

To attend to 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 stakeholders for increasing the production and productivity of spices.

Section 2:

Inter se Priorities among Key Objectives, Success indicators and Targets

Objectives	Weight (%)	Actions	Success indicator	Unit	Weight (%)	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
Strengthening frontier research areas	10	Strengthening of infrastructure of institution - Establishment of Data Centre facility	Timeliness of completion	Date	5	31/10/2012	15/11/2012	30/11/2012	15/12/2012	30/12/2012
		Elucidating biochemical and molecular mechanism of Ralstonia resistance in <i>Curcuma amada</i>	Timeliness of completion	Date	5	31/8/2012	15/9/2012	30/9/2012	15/10/2012	31/10/2012
Conservation of Genetic resources/ germplasm for sustainable use	15	Collection, conservation and cataloguing of genetic resources of spices	Number of germplasm accessions characterized and catalogued	Number	5	150	100	80	60	40
		Development of core collections in black pepper	Number of core collections through morphological markers	Number	10	100	75	50	30	20
Production management by improving soil and plant health	20	Optimization of location specific horticultural/ INM/ IPM technology management for spices	Number of technologies developed/ tested/ validated on Horticulture/INM	Number	10	4	3	2	1	-
			Number of technologies developed/ tested/ validated on IPM/IDM	Number	10	3	2	1	-	-
Enhancing productivity of spices	10	Production of breeder seed/ planting materials in black pepper and nutmeg	Annual quantity planting material produced	Number ('000s)	5	100	80	70	60	40
		Production of breeder seed/ planting materials in ginger and turmeric	Annual Quantity of seed rhizomes produced	('000 kg)	5	8	6	4	3	2
Development of disease diagnostics and value addition in spices	10	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	4	3	2	1	-
Strengthening of extension system (TOT)	15	Trainings and demonstrations	Number of demonstration plots/ exhibitions	Number	3	15	12	10	8	5
			Number of trainees trained (farmers/ agrl. officers and others)	Number	5	500	400	300	200	100
		Extension through print and electronic media	Publication of extension booklets/ field seminars / agroclinics/ radio talks video films	Number	5	25	20	15	10	5

		Development of databases/ Software's	Developing expert systems/ databases on spices	Number	2	4	3	2	1	-
Commercialization of technologies developed and promoting public- private partnership	3	Partnership development, including licensing of ICAR technologies	Number of partners (private sector) identified for technology (Bio control, Tissue culture multiplication, ATL) commercialization	Number	3	5	4	3	2	1
Strengthening of higher education/ HRD	5	Training and higher education	Training in national/ international labs/ Ph.D, Post M.Sc, M.Sc dissertations/ trainings	Number	5	12	8	6	5	3
Efficient functioning of the RFD system	03	Timely submission of RFD for 2012-13	On-time submission	Date	02	Mar. 23 2012	Mar. 26 2012	Mar. 27 2012	Mar. 28 2012	Mar. 29 2012
		Timely submission of results for 2012-13	On-time submission	Date	01	May 1 2013	May 2 2013	May 3 2013	May 6 2013	May 7 2013
Administrative reforms	05	Implement ISO 9001	Prepare ISO 9001 action plan	Date	01	June 4 2012	June 5 2012	June 6 2012	June 7 2012	June 8 2012
			Implementation of ISO 9001 action plan	Date	02	March 25 2013	March 26 2013	March 27 2013	March 28 2013	March 29 2013
		Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	02	100	95	90	85	80
Improving internal efficiency / responsiveness / service delivery of Ministry / Department	04	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	02	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	02	100	95	90	85	80

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Section 3:
Trend Values of the Success Indicators

Objectives	Actions	Success indicators	Unit	Actual value for FY 10/11	Actual value for FY 11/12	Target value for FY 12/13	Projected value for FY 13/14	Projected value for FY 14/15
Strengthening frontier research areas	Strengthening of infrastructure of institution - Establishment of Data Centre facility	Timeliness of completion	Date	-	-	15/11/2012	-	-
	Elucidating biochemical and molecular mechanism of Ralstonia resistance in <i>Curcuma amada</i>	Timeliness of completion	Date	-	-	15/9/2012	-	-
Conservation of genetic resources/ germplasm for sustainable use	Conservation and cataloguing of genetic resources of spices	Number of germplasm accessions characterized and catalogued	Number	80	90	100	120	125
	Development of core collections in black pepper	Number of core collections through morphological markers	Number	25	50	75	80	85
Production management by improving soil and plant health	Optimization of location specific horticultural/ INM/ IPM technology management	Number of technologies developed on Horticulture/INM/IPM/IDM	Number	2	3	3	4	5
Enhancing productivity of spices	Production of breeder seed/ planting materials in black pepper and nutmeg	Annual quantity planting material produced	Number ('000s)	85	125	80	100	150
	Production of breeder seed/ planting materials in ginger and turmeric	Annual quantity of seed rhizomes produced	('000 kg)	10.5	7	6	8	10
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	3	4	5
Strengthening of extension system (TOT)	Trainings and demonstrations	Number of demonstration plots/ exhibitions	Number	10	15	12	15	18
		Number of trainings to farmers/ Agrl. officers and others	Number	250	300	400	450	500
	Extension through printed and electronic media	Publication of extension booklets/ field seminars / agroclinics/ radio talks video films	Number	8	15	20	23	26
	Development of databases/ Software's	Developing expert systems/ databases on spices	Number	2	3	3	4	5
Commercialization of technologies developed and promoting public-private	Partnership development, including licensing of ICAR technologies	Number of partners (private sector) Identified for technology	Number	3	3	4	5	6

partnership		(Bio control, Tissue culture multiplication, ATL) commercialization						
Strengthening of Higher education/ HRD	Training and Higher education	Training in national/ international labs/ Ph.D, Post M.Sc, M.Sc dissertations/ Trainings	Number	6	7	8	9	10
Effective functioning of the RFD system	Timely submission of RFD for 2012-13	One-time submission	Date	-	-	26/03/12	-	-
	Timely submission of Results for 2012-13	On-time submission	Date	-	-	02/05/13	-	-
Administrative Reforms	Implement ISO 9001	Prepare ISO 9001 action plan	Date	-	-	05/06/12	-	-
		Implementation of ISO 9001 action plan	Date	-	-	26/03/13	-	-
	Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	-	-	95	-	-
Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	Implementation of Sevottam	Independent audit of implementation of Citizen's Charter	%	-	-	95	-	-
		Independent audit of implementation of public grievance redressal system	%	-	-	95	-	-
Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	Implementation of Sevottam	Independent audit of implementation of Citizen's Charter	%	-	-	95	-	-

Section 4:

Description and definition of success indicators and proposed measurement methodology

- Objective 1: The *Curcuma amada*, mango ginger, is resistant to *Ralstonia* disease and understanding the genetic basis of the mechanism of resistance will help in developing management strategies against the pathogen infecting ginger and 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 grouped into core collections for specific characters based on morphological characterization. The number of accessions and the markers used for screening will be used as indicators.
- Objective 3: The technologies on horticulture practices, INM and IPM will be developed for improving the soil and plant health management passed on to the farmers for adoption and spread.
- 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 detection 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 6: The developed technologies and varieties will be popularized among the farmers through FLD's, trainings and print/electronic media for mass adoption.
- 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 also will 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 data centre facility is done by CPWD
- The transcriptome sequencing and data analysis is done in collaboration with Next Generation Bio, 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 stakeholders 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.

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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	2010-2011	2011-2012	2012-2013	2013-2014	2014-15
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	%	1.4	1.5	1.5	1.75	1.75
			Production of quality planting materials in black pepper and nutmeg	Number ('000s)	85	125	80	100	150
			Production of quality planting materials in Ginger and turmeric	('000 kg)	10.5	7	6	8	10
2.	Commercialization of technologies	Private partners/ Planters/NGOs/State Departments	Number of partners Identified for technology /Licensed for commercialization	Numbers	3	3	4	5	6