Results-Framework Document (RFD)

for

National Research Centre on Pomegranate
(2013-2014)

Address: NH-9, Kegaon, Solapur – 413 255, Maharashtra
Website ID: www.nrcpomegranate.org

Section 1: Vision, Mission, Objectives and Functions

Vision

Ensure food and income security through technological innovations and sustainable production, value addition and export of pomegranate.

Mission

To establish an International repository of pomegranate genetic resources and develop suitable technologies for sustainable production and utilization to meet domestic and export demand.

Objectives

1. Improving pomegranate productivity, fruit quality and value addition.
2. Transfer of technology .

Functions

To plan, coordinate, implement and monitor R&D programmes for sustainable pomegranate production and resource conservation.

Section-2
Inter se priorities among key objectives, success indicators and targets

S.No.	Objectives	Weight	Actions	Success Indicators	Unit	Weight	Target/Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1.	Improving pomegranate productivity, fruit quality and value addition	60	Germplasm enhancement	Germplasm/mutants evaluated/characterized	Number	10	100	90	80	70	60
			Breeding for better quality and resistance to bacterial blight, wilt and pests.	Hybrids evaluated /characterized	Number	10	5	4	3	2	1
				Germplasm/hybrids screened for bacterial blight, wilt and pests resistance	Number	10	115	105	95	85	75
			Development of production and post harvest technologies	Nutrients evaluated for enhanced productivity	Number	10	5	4	3	2	1
				Production of elite planting material through tissue culture	Number	10	1000	750	650	500	400
				Bio-agents and chemicals evaluated for mitigating important diseases and insect-pests.	Number	5	5	4	3	2	1
				Germplasm evaluated for post harvest quality	Number	5	7	6	5	4	3

2.	Transfer of Technology	29	Dissemination of technologies through Trainings/Demonstrations/Agro-Exhibitions, print and electronic media.	Organizing and participation in Trainings / Demonstrations /Agro-Exhibitions, development of print and electronic media	Number	29	9	8	7	6	5
	Efficient Functioning of RFD System	03	Timely submission of draft RFD (2013-14) for approval	On-time submission	Date	02	May 15 2013	May 16 2013	May 17 2013	May 20 2013	May 21 2013
			Timely submission of results for RFD (2012-13)	On-time submission	Date	01	May 1 2013	May 2 2013	May5 2013	May 6 2013	May 7 2013
	Administrative reforms	04	Implement ISO 9001 as per the approved action plan	% implementation	%	02	100	95	90	85	80
			Preparation of Innovation action Plan	On-time submission	Date	2	July 30, 2013	August 10, 2013	August 20, 2013	August 30, 2013	Sep. 10, 2013
	Improving internal efficiency/responsiveness/service delivery of Ministry/Department	04	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2	100	95	90	85	80
				Independent Audit of Implementation of public grievance redressal system	%	2	100	95	90	85	80

Section 3
Trend values of the success indicators

S.No.	Objectives	Actions	Success Indicators	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target Value for FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
1.	Improving pomegranate productivity, fruit quality and value addition	Germplasm enhancement	Germplasm/mutants evaluated/characterized	Number	180	60	90	100	110
		Breeding for better quality and resistance to bacterial blight, wilt and pests.	Hybrids evaluated/characterized	Number	4	4	4	5	6
			Germplasm/hybrids screened for bacterial blight, wilt and pests resistance	Number	95	100	105	110	115
		Development of production and post harvest technologies	Nutrients evaluated for enhanced productivity	Number	-	-	4	5	6
			Production of elite planting material through tissue culture	Number	-	-	750	1000	2000
			Bio-agents and chemicals evaluated for Mitigating important diseases and insect-pests of pomegarnet	Number	4	4	4	5	5
			Germplasm evaluated for post harvest quality	Number	6	6	6	7	8

2.	Transfer of Technology	Dissemination of technologies through Trainings/Demonstrations/ Agro-Exhibitions, print and electronic media.	Organizing and participation in Trainings / Demonstrations /Agro-Exhibitions, development of print and electronic media	Number	21	12	8	9	10
3.	Efficient Functioning of RFD System	Timely submission of draft RFD (2013-14) for approval	On-time submission	Date			Mar. 16 2013		
		Timely submission of results for RFD (2012-13)	On-time submission	Date			May 2 2013		
4.	Administrative reforms	Implement ISO 9001 as per the approved action plan	% implementation	%			95		
		Preparation of Innovation action Plan	On-time submission	Date			August 10, 2013		
5.	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		

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Section 4: Acronyms

S. No.	Acronym	Description
1	R&D	Research and Development
2	OHM	Orchard Health Management
3	IDIPM	Integrated Disease and Insect-Pest management
3	KVK	Krishi Vigyan Kendra
4	SAU	State Agricultural University
5	DNA	Deoxyribonucleic Acid
6	TSS	Total Soluble Solids
7	CD	Compact Disc

Section 4: Description and definition of success indicators and proposed measurement methodology

S. No.	Success indicator	Description	Definition	Measurement	General comments
1	Germplasm/mutants evaluated/characterized	Germplasm from domestic and exotic sources and mutants developed will be evaluated for qualitative and quantitative traits for their utilization in pomegranate improvement programmes.	Germplasm is collection of cultivars, landraces, wild species etc. for conservation and utilization. Any variant with genetic change in the gamma irradiated population of cvs Bhagawa and Ganesh is termed as mutant. The germplasm will be characterized through	Germplasm/mutans will be evaluated for desirable physico-chemical parameters, growth, yield etc. DNA fingerprinting will be performed employing various molecular markers.	Germplasm material serve as base for utilization in crop improvement programmess for breeding new varieties. Its characterization would be useful for generating information on germplasm diversity.

			morphometric, qualitative traits, and molecular markers.		
2	Hybrids evaluated /characterized	Hybrids evolved with desirable characteristics will be used for developing improved vartieties.	A hybrid is a plant obtained from crossing of parents with desirable traits. It will be evaluated for qualitative and quantitative parameters.	Hybrids developed will be evaluated for vegetative growth, quantitative traits (yield, fruit weight, rind weight etc.) , qualitative traits (TSS, aril weight, aril juice volume, acidity etc.) and disease resistance against important diseases like bacterial blight and wilt.	Desirable hybrids with promising qualitative and quantitative traits would be selected for developing improved and disease resistant varieties.
3	Germplasm/hybrids screened for bacterial blight, wilt and pests resistance	Pomegranate is susceptible to many diseases (bactyerial blight , wilt, fruit spots etc.) and insect-pests (fruit borer, fruit moth etc)) which result in significant crop losses. Germplasm/hybrids would be screened for identifying resistant sources.	Germplasm/hybrids revealing no disease or slight disease reaction against bacterial blight and wilt diseases will be considered resistance sources for further breeding programmes.	Germplasm/hybrids are being screened for disease (blight and wilt) resistance under natural conditions and through artificial inoculations.	In order to develop disease resistant varieties screening of germplasm against important diseases and insect-pest is required.
4	Nutrients evaluated for enhanced productivity	Improvement in use of nutrients is required for sustainable productivity.	Nutrients like N, P, K and Mn and Zn will be evaluated (different doses) under field conditions for increased yields.	Nutrients (N,P,K, Mn, ZN) will be analysed by leaf sampling technique using Atomic absorption spectrophotometer.	To develop a suitable integrated plant nutrient mqanagement system evaluation of different doses of nutrients on plants is required.

5	Production of elite planting material through tissue culture	Due to unavailability of healthy and disease free planting material, planting material will be produced through non-conventional method like tissue culture.	Tissue culture technique involves *in vitro* production of disease free planting material using different media and growth regulator combinations and their hardening	Number of plants produced.	Inadequate availability of disease free planting material is the major constraint in establishing a new orchard. Tissue culture technique could be useful to meet the said problem.
6	Bio-agents and chemicals evaluated for mitigating important diseases and insect-pests.	Since pomegranate is susceptible to many diseases and insect-pests, various bioagents and chemicals will be used for mitigating them and increasing yields.	Bioagents, fungicides, insecticides, chemicals will be screened against important diseases like bacterial blight , wilt , fruit spots and insect-pests *in vitro* and *in vivo.*	Various bioagents, fungicides, and chemicals (salicylic acid, boric acid etc.) are being evaluated *in vitro* and under field conditions for the management of important diseases like bacterial blight and wilt.	DIPM schedule will be further refined by including more effective bioagents, and chemicals for the management of important diseases and insect-pests affecting pomegranate.
7	Germplasm evaluated for post harvest quality.		Pomegranate has rich nutritive and medicinal properties which could be utilized in value addition. Germplasm evaluation for qualitative, quantitative traits is important for selection of suitable sources for further breeding programmes.	Various qualitative and quantitative traits like fruit weight, fruit colour, aril weight, aril colour, TSS, acidity, reducing and non-reducing sugars etc besides presence of important vitamins, minerals and phytochemicals wold be analysed for selecting suitable germplasm for value addition.	Post harvest management of pomegranate is essential for mitigating post harvest losses and developing value added products for proper utilization.
8	Organizing and participation in Trainings / Demonstrations /Agro-Exhibitions, development of print	Dissemination of pomegranate production technology is essential for creating awareness among the farmers for increasing pomegranate	Developing new technologies for enhanced pomegranate production and utilization and transferring them to growers for their adoption through different	Different media for technology dissemination will include organizing of trainings, demonstrations, printing of technical/extension	Effective dissemination of technology developed results in its better adoption by the growers and increasing their socio-economic status.

	and electronic media	productivity and utilization.	media.	bulletins, folders etc., developing CDs on management of diseases and insect-pests and print and electronic media..	

Section 5:

Specific performance requirements from other Department

Location Type	State	Organisation Type	Organisation Name	Relevant Success Indicator	What is your requirement from this organisation	Justification for this requirement	Please quantify your requirement from this organisation	What happens if your requirement is not met.
-	-	-	-	-	-	-	-	-

Section 6: Outcome / Impact of activities of the organization

S. No	Outcome / Impact of the organization	Jointly responsible for influencing this outcome / impact with the following	Success Indicator (s)	Unit	2011-2012	2012-2013	2013-2014	2014-2015	2015-16

		organisation (s) / departments/ministry(ies)							
1	Increase in awareness on pomegranate technology.	State Agriculture and Horticulture Departments/KVKs.	Growers benefitted from the technology.	Number	1920	3000	3500	4000	4500
2.	Adoption of Orchard Health Management (OHM) technology for mitigating bacterial blight disease.	SAUs, State Agriculture and Horticulture Departments.	Reduction in bacterial blight severity.	%	88.0	92.0	92.0	92.0	92.0