

List of ongoing Institute Projects

S. No.	Title	Project ID	Investigators	Start date	End date	Cost (Rs. in lakhs)	Objectives
I.	Conservation, characterization and utilization of grape.						
1.	Management of grape genetic resources– Phase III	IXX14854	R. G. Somkuwar A. K. Sharma Roshani R. Samarth S. D. Ramteke Sujoy Saha D. S. Yadav Yukti Verma	01/04/2019	31/03/2024	43.90	1.To strengthen grape repository through introduction and collection 2. To screen the grape germplasm for different end purposes 3. To screen the grape germplasm against biotic and abiotic stresses under natural growing conditions
II	Genetic improvement of grape						

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2.	Functional validation and expression assay of abiotic stress responsive transcription factors genes in grapevine	IXX12598	Dr. Anuradha Upadhyay Ms. Sharmistha Naik (till 16/01/2019)	01/04/2016	31/03/2019	39.50	<ol style="list-style-type: none"> 1. To validate functional role of salt stress responsive grape genes 2. To identify multiple abiotic stress responsive genes 3. To study the transient expression of selected target genes in grape

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3.	Marker Assisted Selection for Downy Mildew Resistance in Seedless Grape Varieties	IXX00296	Dr. Roshni R. Samarth Dr. Anuradha Upadhyay, Dr. Indu S. Sawant Dr. R.G. Somkuwar (w.e.f. 01/04/2018)	20/09/2010	31/03/2020	95.81	<ol style="list-style-type: none"> 1. To carry out crossing program for transferring downy mildew resistant trait in Thompson seedless. 2. To confirm the hybrid nature of the seedlings using microsatellite markers. 3. To study the co-segregation of markers and disease resistance trait in F1 population. 4. To develop technique for marker assisted selection 5. To develop a downy mildew resistant variety of Thompson seedless

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4.	Breeding for naturally loose bunches and bold berries in grapes	IXX11658	Dr. Roshni R. Samarth Ms. Anupa T. Dr. D.N. Gawande (w.e.f. 25/07/2016)	01/12/2014	30/11/2019	20.40	1. To develop F1 hybrids from crosses of Red Globe. 2. To identify hybrids for quality traits viz. loose bunches, bold berries and better shelf life
5.	Creating gene and ploidy variations for desired trait in grape using physical and chemical agents	IXX12600	Ms. Sharmistha Naik (till 16/01/2019) Dr. Roshni R. Samarth Dr. Anuradha Upadhyay	07/04/2016	31/03/2021	17.88	1. To create variability in grape using physical and chemical mutagens 2. To induce tetraploidy in grape 3. To evaluate the mutated vines/tetraploids for desirable traits
6.	Genetic improvement of coloured grapes.	IXX14202	Dr. D.N. Gawande Dr. Roshni R. Samwarth Dr. Anuradha Upadhyay	01/09/2017	31/12/2022	103.40	1. To develop coloured and seedless grape genotype with desired traits like uniform colour development and diverse maturity period

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III.	Development and refinement of production technologies for enhancing quality, productivity and sustainability in grape						

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7.	Evaluation of rootstocks for growth, yield and fruit composition of table and wine grapes	IXX11692	Dr. R.G. Somkuwar Dr. S.D. Ramteke Dr. A.K. Upadhyay Dr. A.K. Sharma Dr. Ahammed Shabeer T.P. (w.e.f. 01/12/2018)	01/04/2015	31/03/2020	20.00	<ol style="list-style-type: none"> 1. To study the influence of rootstocks on growth and development of table and wine grape varieties 2. To study the influence of rootstocks on fruit composition in Fantasy Seedless and Red Globe and must and wine quality in Sauvignon Blanc grapes 3. To study the influence of rootstocks on mineral nutrient uptake / accumulation in table and wine grapes 4. To study the influence of rootstocks on photosynthetic activities in table and wine grapes

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8.	Evaluation of grape rootstocks for the production of yield and quality	IXX14853	Dr. R. G. Somkuwar Dr. A. K. Sharma Dr. A K. Upadhyay Miss. Yukti Verma Dr. S. D. Ramteke	01/04/2019	31/03/2024	33.90	<ol style="list-style-type: none"> 1. To study the influence of rootstocks on growth and development of Manjari Naveen, Manjari Medika, Manjari Kishmish, Nanasaheb Purple and Crimson Seedless 2. To study the influence of rootstocks on fruit composition. 3. To study the influence of rootstocks on mineral nutrient uptake / accumulation. 4. To study the influence of rootstocks on photosynthetic activities

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9.	Standardization of protocol for micro-propagation of grape (<i>Vitis vinifera</i> L.) rootstocks	IXX11655	Ms. Anupa T. Dr. Roshni R. Samarth Dr. A.K. Sharma	30/04/2015	31/12/2019	15.99	<ol style="list-style-type: none"> 1. To standardize type explant type 2. To standardize suitable medium for establishment, proliferation and rooting 3. To identify congenial conditions for growth of tissue cultured plantlets
10.	Development of tissue culture techniques for production of quality planting material in grape		Ms. Anupa T. (PI w.e.f. 17/01/2019) Ms. Sharmistha Naik (PI till 16/01/2019) Dr. Sujoy Saha Dr. Anuradha Upadhyay	01/04/2017	31/03/2019	39.14	<ol style="list-style-type: none"> 1. To standardize protocols for production of virus free plants using tissue culture. 2. To develop efficient methods for quick multiplication of virus-free in vitro plants and their ex vitro establishment. 3. Large scale production and multiplication of healthy and virus free grape plants using above protocols.

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11.	To demonstrate techniques to improve water use efficiency in growers' field	OXX03081	Dr. A.K. Upadhyay Dr. S.D. Ramteke	01/04/2015	31/07/2021	0.85	<ol style="list-style-type: none"> 1. Demonstration of the techniques developed at NRC Grapes to improve water use efficiency in Thompson Seedless vines. 2. To study the effect of partial root zone drying technique on yield and quality of grapes.
12.	Effect of plastic cover on grapevine growth and productivity	IXX12973	Dr. A.K. Upadhyay Dr. A.K. Sharma Dr. D.S. Yadav Dr. K. Banerjee Dr. R.G. Somkuwar Dr. S.D. Ramteke Dr. S.D. Sawant Dr. Sujoy Saha Ms. Anupa T. Dr. B.B. Fand (till 31/05/2017) Dr. Indu S. Sawant (w.e.f. 01/12/2018)	01/09/2016	30/09/2019	79.675	<ol style="list-style-type: none"> 1. To study the effect of plastic cover and irrigation levels on grapevine growth, disease & pest incidence and yield 2. To study the performance of grapevines under plastic cover at two locations in farmer's field with different climatic regimes

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13.	Studies on usefulness of CCC for fruitfulness, its dissipation and fate in grapes		Dr. S.D. Ramteke Dr. Ahammed Shabeer T.P.	01/10/2019	30/09/2022	26.81	1. To study the bioefficacy and phytotoxicity of CCC in grapes 2. To study the residue and dessipation of CCC in grapes
14.	Climate based spatial delimitation of suitable grape growing regions in India using GIS	IXX11652	Mrs. Kavita Y. Mundankar Dr. Indu S. Sawant Dr. R.G. Somkuwar (w.e.f. 01/04/2018) Dr. A.K. Upadhyay (w.e.f. 01/04/2018) Dr. S.D. Ramteke Dr. D.S. Yadav Dr. Amala U. (till 07/06/2016)	01/04/2015	31/03/2020	42.20	1. To identify spatial distribution of climatic suitability for grape growing using GIS tools

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15.	Development of Biocompatible Nanoclay-polymer Composites and Nanoparticles with reference to Retention and Release of Iron and Zinc in Grapes (<i>Vitis vinifera</i> L.)	IXX14845	Ms. Yukti Verma Dr. A.K. Upadhyay	01/04/2019	30/06/2023	20.51	<ol style="list-style-type: none"> <li data-bbox="1271 380 1576 667">1. To synthesize and characterize biocompatible nanoclay-polymer composites and nanoparticles of Fe and Zn. <li data-bbox="1271 701 1576 1157">2. To study the effect of different reacting components of clay-polymer composites on equilibrium water absorbency and release behaviour of Fe and Zn in soil. <li data-bbox="1271 1190 1576 1478">3. To study the effect of nanoclay-polymer composites and nanoparticles on Fe and Zn utilization by grape.

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IV.	Development and refinement of integrated protection technologies in grape						

16.	Management of stem borer in grapes	IXX10000	Dr. D.S. Yadav Dr. Amala U. (till 07/06/2016) Dr. B.B. Fand (08/06/2016 to 31/05/2017)	01/04/2013	31/03/2019	36.70	<ol style="list-style-type: none"> 1. To identify and document various species of stem borer infesting grapes and to study their biology 2. To explore non-destructive method of stem borer detection and potential of mechanical methods of stem borer management 3. To evaluate microbial pathogens, IIHR technology 'Healer cum Sealer' and light traps for the management of stem borer in grapes 4. To identify alternate host sources in and around the vineyards 5. Evaluation of potential chemicals and delivery methods for the management of stem borer
17.	Detection and management of biotic		Dr. D.S. Yadav	01/08/2018	30/09/2022	52.00	<ol style="list-style-type: none"> 1. To identify and validate signature

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	and abiotic stresses in vineyards using artificial intelligence based wearable device		Dr. S.D. Sawant Dr. A.K. Upadhyay Dr. Sujoy Saha				<p>and train machine learning model for detection of biotic and abiotic stresses in vineyard through visible and long wave infra red spectra.</p> <p>2. To utilize, standardize and validate artificial intelligence based wearable device for identification of stresses in vineyards.</p> <p>3. To develop and validate grape advisory based on inputs from artificial intelligence based wearable device.</p>
V.	Development of pre- and post-harvest technologies for processing of grapes and value addition						

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18.	Winery Bi-products Utilization for Value Addition in Food Products	IXX10736	Dr. A.K. Sharma Dr. K. Banerjee	01/01/2014	30/06/2019	38.70	<ol style="list-style-type: none"> 1. To identify potential winery wastes for enriching targeted food products 2. To evaluate enriched food products based on biochemical and sensory parameters

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19.	Phytochemical profiling and development of nutraceuticals and value added products from grapes	IXX12657	Dr. Ahammed Shabeer T.P. Dr. K. Banerjee, Dr A.K. Sharma Ms. Sharmistha Naik (till 16/01/2019) Dr. R.G. Somkuwar	01/04/2016	31/03/2021	52.00	<ol style="list-style-type: none"> 1. Screening of different varieties from grape germ plasm for important phytochemicals 2. Extraction and isolation of important phytochemicals (anthocyanins and phenolic) from promising grape varieties 3. Extraction and characterization of grape seed oil from different grape varieties and their characterization through lipids and fatty acid profiling 4. To formulate bio-active extracts to different nutraceuticals and functional foods

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VI.	Food safety in grapes and its processed products						
20.	Analysis and safety evaluation of agrochemical residues and contaminants in agricultural commodities and processed products	IXX11064	Dr. K. Banerjee Dr. Ahammed Shabeer T.P., Dr. A.K. Upadhyay, Dr. A.K. Sharma	01/01/2014	31/12/2020	2933.21	<ol style="list-style-type: none"> 1. Development and validation of effective residue analysis protocols. 2. Estimation of pre-harvest interval of agrochemicals in various agricultural commodities. 3. Estimation of processing factors during processing of fresh commodities.