



**DEPARTMENT OF SILVICULTURE AND AGROFORESTRY
ASPEE COLLEGE OF HORTICULTURE AND FORESTRY
NAVSARI AGRICULTURAL UNIVERSITY
NAVSARI - 396 450**



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NO.COF/ACHF/NAU/AGRESCO/2060-64/2017

Dated: 20.01.2017

To,

**All the Members
AGRESCO Forestry Sub-Committee,
Navsari Agricultural University**

Subject: 13th AGRESCO meeting of Forestry of NAU

Ref: 1. DR, NAU; Navsari letter No. NAU /RES/T-5/15475-525/2016, Dtd 19.11.2016

2. DR, NAU; Navsari letter No. NAU /RES/T-5/16008/2016, Dtd 19.11.2016

3. ACHF/COF/SAF/AGRESCO- For/ 27231-32/2016-17 dated 08.12.2016

Sir,

The 13th meeting of Forestry Sub-Committee is scheduled to be held on **23 February, 2017** in Conference Hall of College of Forestry, Navsari. All the members are requested to send their on going **Research Progress report, recommendation and New Technical programme** to the convener **on or before 7th February, 2017**. The information regarding **Action Taken Report**, if any based on the proceedings of 12th Combined Joint AGRESCO meeting of Horticulture and Forestry (Now Forestry group) to be sent before **28.01.2017** separately by email. The members are requested to follow the instructions mentioned below strictly for the meeting.

- Members of the sub-committee are directed to prepare Forestry subcommittee report (A4 size paper) as per the prescribed format and send the same (**soft & hard copy**) to **the convener Forestry AGRESCO** as well as to all the **members (email copy)** as per the enclosed list.No member shall be permitted to circulate the report,New technical programme during the meeting.
- Members of the Forestry cannot remain absent in the meeting without prior permission of the Director of Research, NAU; Navsari.

Encl.: List of Members

Minutes of previous AGRESCO/Join Asco/Com. J Asco.

Yours sincerely

Manmohan
2017

Convener AGRESCO (Forestry)

Copy submitted for information to:

1. P.S. to the Vice Chancellor, Navsari Agricultural University, Navsari
2. The Director of Research and Dean, P.G. Studies, Navsari Agricultural University, Navsari
3. Dean, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari
4. All the Conveners of different Sub-committees of AGRESCO of Navsari Agricultural University, Navsari.
5. All Members of Forestry Sub-committees of AGRESCO for information. *(by email)/website*

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List of members of 13th Forestry Sub-Committee of AGRESCO
Navsari Agricultural University, Navsari -2016-17
(23 February, 2017, Conference Hall, CoF, ACHF, Navsari)

S.N.	Name	Designation	Address
1.	Dr. Sunil Chaudhary	Director of Research & Dean PGS	Navsari Agricultural University, Navsari
2.	Dr. G. R. Patel	Director of Extension Education	
3.	Dr. B.N. Patel	Principal, & Dean ASPEE College of Horticulture & Forestry,	
4.	Dr. P.K. Shrivastava	Principal, College of Forestry (ACHF)	
5.	Dr. K.A. Patel	Assoc. Director of Research	
6.	Dr. Manmohan J.R. Dobriyal	Member & Convener Forestry & Associate Professor & Head (I/c) Dept. of Silviculture & Agroforestry	College of Forestry, ACHF Navsari; manmohandobriyal@gmail.com, 9408851285
7.	Dr. Rajesh P. Gunaga	Associate Professor (Forest Biology/ Agroforestry)	Department of Silviculture & Agroforestry, College of Forestry (ACHF) NAU; Navsari
8.	Dr. M.B. Tandel	Assistant Professor (Forestry)	
9.	Mr. Mukesh R. Parmar	Assistant Professor (Agroforestry)	
10.	Mr. Jayesh Pathak	Assistant Professor (Agroforestry)	
11.	Dr. V.M. Prajapati	Assistant Professor (Silviculture)	
12.	Mr. Mahesh K. Desai	Assistant Professor (Agroforestry)	
13.	Mr. Sandip M. Patel	Assistant Professor (Agroforestry)	
14.	Dr. N.S. Thakur	Assistant Professor (Agroforestry)	
15.	Dr. L. K. Behera	Assistant Professor (Silviculture)	
16.	Dr. Suman Kumar Jha	Associate Professor (Forest Biology)	
17.	Mr. R.S. Chauhan	Assistant Professor (Seed Technology)	
18.	Mr. Santosh K. Huse	Assistant Professor (Tree Improvement)	
19.	Dr. M. S. Sankanur	Assistant Professor (Tree improvement)	
20.	Dr. Amol Vasishth	Associate Professor (MAP)	Department of Forest Products & Utilistion, College of Forestry (ACHF)
21.	Mr. A. A. Mehta	Assistant Professor (FPU)	

Amol Vasishth

			NAU; Navsari
22	Dr. S.K. Sinha	Assistant Professor (Wood Science & Technology)	
23	Mr. Harsha T. Hegde	Assistant Professor (Forest Management)	
24	Dr. L.K. Arvadia	Associate Professor (Agronomy)	Department of Natural Resource Management, College of Forestry (ACHF) NAU; Navsari
25	Dr. D.P. Patel	Assistant Professor (Soil Science)	
26	Dr. Aadil A. Kazi	Assistant Professor (Ecotourism & WL)	
27	Dr. Dileswar Nayak	Assistant Professor (NRM)	
28	Dr. Shailendra Viyol	Assistant Professor (Environmental Science)	
29	Dr. Bimal S. Desai	Assistant Professor (Botany)	Department of Basic Science & Humanities, College of Forestry (ACHF) NAU; Navsari
30	Mr. Kirti Bardhan	Assistant Professor (Plant Physiology)	
31	Mr. Vipul B. Pareikh	Assistant Professor (Biotechnology)	
32	Dr. S.P. Saxena,	Professor & Head, (Entomology)	Department of Entomology and Pathology ASPEE College of Horticulture & Forestry, NAU; Navsari
33	Dr. H.V. Pandya	Associate Professor (Entomology)	
34	Dr. Snehal M. Patel	Assistant Professor (Entomology)	
35	Dr. P. R. Patel	Associate Professor (Pathology)	
36	Dr. Narendra Singh	Associate Professor (Agri Economics)	Department of Economics & Statistics, ASPEE College of Horticulture & Forestry, NAU; Navsari
37	Dr. B.K. Bhatt	Associate Professor (Agri Statistics)	
38	Mr. H N Chatrola	Assistant Professor (Agri Statistics)	
39	Dr. S.K. Desai	Scientist (Horticulture)	KVK, Dediapada, Narmada
40	Dr. B.G. Vashi,	Ret. Prof. Forestry	INVITED MEMBERS
41	Social Forestry Division, Navsari	DCF	
42	Dr. Sudhir Chauhan	J K Paper mill, Songadh	
43	NGO representative	BAIF/ AKRSP	
44	Sh. Mangubhai Patel, Chikli, Navsari	Farmer	

Manmohan J. Dobriyal
 Associate Professor (Silviculture)
 College of Forestry, ACHF
 NAU, Navsari-396 450

**Proceedings of the 12th meeting of Horticulture and agro-forestry research
subcommittee, NAU, Navsari, Held on 10-12 march 2016**

Inaugural session

The inaugural function of 12th Horticulture and Agro Forestry Subcommittee Meeting was held at Swami Vivekanand Hall, ACHF at 9 AM on 10th March 2016.

The programme started with the floral welcome by Dr. B.R. Parmar to all the guests and lighting the lamp of wisdom by the dignitaries Hon'ble Vice Chancellor Dr. C J Dangaria, Director of Research and Dean PG Studies, Dr. A. N. Sabalpara, Principal and Dean, ACHF, Dr. B N Patel, Principal of Forestry College, Dr. PK Shrivastav and Convener and Professor and Head, Horticulture Dept, NMCA, Dr. B R Parmar. The inaugural session was presided over by the Hon'ble Vice Chancellor, Dr. C J Dangaria.

Principal and Dean, ACHF, Dr. B N Patel welcomed the guests and extended a warm welcome to Hon'ble Vice Chancellor, Director of Research and Dean PG Studies, Convener of the committee, Principal, College of Forestry, as well all the professors, scientists, faculty and staff. Extending a warm welcome to everyone, he gave a brief account of the number of recommendations and New Technical Programmes which would be presented in the technical sessions of AGRESCO meeting. Presenting scenario of Horticulture in the country, he emphasized upon the need for advancing research in different aspects of horticulture for the betterment of the farming community and uplifting their economic status. He expressed his warm wishes for a fruitful discussion and deliberation in the meeting.

Dr. A N Sabalpara, Director of Research and Dean PG Studies in his inaugural address gave brief account of the research achievements made in the field of horticulture. He expressed his appreciation and acknowledged the efforts of the NAU scientists in promoting horticulture. He further emphasized the need to strength the research in the field of organic farming in horticultural crops and to initiate research in the indigenous native plant species. He extended his best wishes to the entire scientist for concrete outcome in the AGRESCO meeting.

Hon'ble Vice Chancellor, Dr. C. J. Dangaria, In his presidential address, extended his appreciation and congratulated the NAU scientists for their contribution in horticulture and gave a brief account of challenges in horticulture, detailed the various approaches being made at National level and briefed about the scope of horticulture in the GDP in the country. He emphasized on the need of concrete and focused research by the scientific community and

further publicity and transfer of technology to reach large mass of rural areas. He outlined areas of primary research for protected cultivation, medicinal crops and secondary farming based on postharvest technology and value addition for new products and upgrading quality oriented technology. He further emphasized on the need of strengthening further research in plant breeding and towards integrated multidisciplinary research programmes to further explore its potential for the development of horticulture sector. He suggested that mix of traditional knowledge and modern innovations should be used for addressing challenges to achieve the targeted result in horticulture. He extended his warm greetings to all the scientists.

Followed by the addresses of the dignitaries, Dr. B R Parmar, Convener of the committee briefly presented the action taken report of the 11th AGRESCO Meeting and further extended his warm wishes for productive discussions and outcomes in the 12th AGRESCO Meeting. Dr. Alka Singh, Associate Professor (Floriculture) proposed vote of thanks by the end of the inaugural session.

26	Evaluation and modification of banana comb cutter	<p align="center">(Action to be taken by Dr. Dev Raj)</p> <p>Approved with the following suggestions:</p> <ul style="list-style-type: none"> • Provide data of economics table and other important tables in the report of Joint Agresco • Video clips may be presented at Joint Agresco • (Presented suggestions made in the sub-committee of Agril. Engg.) <p align="center">(Action to be taken by Er. A. K. Senapati)</p>
27	Standardization of method for preparation of candy from bitter gourd (<i>Momordica charantia</i> L.)	<p>Approved with the following suggestions:</p> <ul style="list-style-type: none"> • Table 8.4 check the pooled data • Delete treatment wise mean in all the tables • Give data of single factor and where interaction effect is significant, give two way table • Recommendation-recast (add sugar syrup) <p align="center">(Action to be taken by Jilen Patel)</p>
28	Effect of different types of processing on the nutritional quality of green gram, kidney bean and chick pea	<p>Accepted</p> <p align="center">(Action to be taken by Dr. K.G. Patel)</p>
29	Agroforestry Investigation on tree ring analysis (Dendrochronology) to monitor radial growth responses of teak to climate in South Gujarat	<p>Approved with the following suggestions:</p> <ul style="list-style-type: none"> • Recommendation-recast-based on dendrochronology study for last ..years, if irrigation is given the growth... <p align="center">(Action to be taken by S K Sinha)</p>
30	Evaluation of <i>Melia composite</i> families for germination traits and growth at nursery stage	<p>Extended for one more year with the following suggestions</p> <ul style="list-style-type: none"> • This experiment should be continued for one more year after procuring different families. <p align="center">(Action to be taken by R. S. Chauhan)</p>
31	Mass propagation of <i>Acacia mangium</i> through axillary buds	<p>Extended for one more year with the following suggestions</p> <ul style="list-style-type: none"> • Repeat the experiment for one more year. <p align="center">(Action to be taken by R. S. Chauhan)</p>
32	Performance of turmeric (<i>Curcuma longa</i>) grown as an intercrop under different tree species in South Gujarat conditions	<p>Approved with the following suggestions:</p> <ul style="list-style-type: none"> • Recast the recommendation in Gujarati • Remove additional income from the recommendation. • Do not mention individual years for economics table. It should be on pooled

		data. (Action to be taken by Dr. M. B. Tandel)
33	Effect of different tree species leaf leachate on germination and seedling growth of some vegetable crops by Dr. M. B. Tandel	Accepted for scientific community.
34	Selection of <i>Terminalia chebula</i> for higher tannin content By HT Hegde	The experiment is concluded
35	Standardization of the recipe for the preparation of candy from the fruits of Palmyra palm	Approved with the following suggestions: <ul style="list-style-type: none"> • Mention size of candy, time of steeping • Recast the recommendation with recipe (Action to be taken by Jilen Patel)
36	Standardization of the recipe for the preparation of jam from the fruits of Palmyra palm	Approved with the following suggestions: <ul style="list-style-type: none"> • Statistical analysis- give Sem for all tables • Give the recipe • Recast recommendation (Action to be taken by Jilen Patel)
37	Standardization of the recipe for the preparation of jelly from the Neera of Palmyra palm	Approved with the following suggestions: <ul style="list-style-type: none"> • Calculate economics for the best treatments • Recast recommendation (Action to be taken by Jilen Patel)

Note: For all recommendations made there should be only one P I, 1 or 2 Co-PI and 1 or 2 associates (if required for bio-chemical, physiological or soil analysis work)

Write Zone-I before AES-III for all recommendations

Next PI conducted

		<ul style="list-style-type: none"> • Two lots should needed for first exp. 	
70	Standardization of technology for minimal processing of fresh cut potatoes (<i>Solanum tuberosum</i> L.).	<ul style="list-style-type: none"> • Add starch content in observation instead of fibre content 	Associate Prof. PHT
71	Standardization of technology for preparation of candy from ripe papaya (<i>Carica papaya</i> Linn.) fruits.	<ul style="list-style-type: none"> • Candy size should be mentioned • Sample size/Bag size should be increased 	Associate Prof. PHT
72	Standardization of technology for preparation of Tomato (<i>Solanum lycopersicum</i> L.) powder for home scale adoption.	<ul style="list-style-type: none"> • Add recovery per cent in observation • Recast treatment combination • Take varieties as a third factor 	Associate Prof. PHT
73	Development of technology for preservation of tender coconut water	<ul style="list-style-type: none"> • Take WCT as a variety 	Associate Prof. PHT
74	Development of technology for health based digestive tablets from noni pomace powder.	<ul style="list-style-type: none"> • Chemical composition of table should be analyzed and mention before recommendation 	Associate Prof. PHT
75	Characterization of the sapota seed oil for extraction and value addition	<ul style="list-style-type: none"> • Varieties can be changed as per the availability • Recast the first objective (Remove value addition) • Mentioned flow chart of methodology 	Associate Prof. PHT
Forestry			
76	Determination of critical limit of water salinity for <i>Ailanthus excelsa</i> Roxb. Seedlings	<ul style="list-style-type: none"> • Water salinity level (Revised treatment) 0.5,2.0,4.0,6.0,8.0,10.0 • Compare control with best available water • 10 pots per replication used for exp. • 10kg pots were used for experiment 	Approved with suggestion Action: PI

77	Ecological studies on selected horticulture - based agroforestry systems in South Gujarat	Not Accepted	Ph.D. trial Not Approved
78	Development of volumetric equation for Teak (<i>Tectona grandis</i> L.)	<ul style="list-style-type: none"> Incorporate "South Gujarat " in title 	Approved with suggestion Action: PI
79	Seed source variation for seed traits, germination and seedling vigour in <i>Cinnamomum verum</i>	Accepted	Approved
80	Metagenomic analysis of flooded rice ecosystem under climate change resilience	Accepted	Approved
81	Evaluation of various <i>Poplar</i> clones for early Growth and Establishment under South Gujarat condition	<ul style="list-style-type: none"> Add in observation -Leaf area, Carbon sequestration potential 	Approved with suggestion Action: PI
82	Evaluation of different <i>Salix</i> clones for early Growth and Establishment under South Gujarat condition	<ul style="list-style-type: none"> Add in observation -Leaf area, Carbon sequestration potential 	Approved with suggestion Action: PI
83	Emission of N ₂ O and CH ₄ from forests soils. (BH:12019)	<ul style="list-style-type: none"> F1 - Natural Forest, F2 - Teak plantation Design CRD Take crown diameter instead of NS,EW Add season in treatment 	Approved with suggestion Action: PI
84	Effect of different seed treatment and media on growth of Indian Cheese Maker - <i>Wrihania coagulans</i> (Stocks) Dunal	Accepted	Approved
85	Documentation of basic density and calorific value of different tree species of South Gujarat	<ul style="list-style-type: none"> Add biomass in observation, Add Local names in all species Add <i>Ficus spp.</i> 	Approved with suggestion Action: PI
86	Growth assessment of various kinds of fishes in fresh water	<ul style="list-style-type: none"> It should presented in Fisheries Research Committee Add survival percentage in observations 	Approved with suggestion Action: PI
87	Establishment of plantations of minor fruit species for PG research	<ul style="list-style-type: none"> Modification of earlier trial entitled "Reducing harvest age of <i>Terminalia</i> 	Approved with suggestion

		<p><i>chebula</i> and <i>T. bellerica</i> (chebulic and belleric myrobalans) for early return'</p> <ul style="list-style-type: none"> Four species viz., <i>Garcinia indica</i> and <i>Sapindus</i> including <i>Terminalia chebula</i> and <i>T. bellerica</i> 	Action: PI
	Biotechnology		
88	Isolation and characterization of PGPRs from different Banana cultivars	Use word "mother plant" instead of "pseudo stem"	Approved

	Concluded Experiments	Suggestions	Action taken
1.	Study the management efficiency of Mango and Sapota growers in Navsari district	Put the results in Social Science for further discussion	Dr. B. M. Tandel
2	Varietal trial on Katargam type papadi	On the basis of morphological group, the new experiment should be framed on next AGRESCO	Dr. K.N. Chaudhary
3	Preliminary Evaluation Trail of Spine Gourd	Frame new experiment based on this experiment	Dr. N.K. Patel
4	Induction of variability through mutagens in Gladiolus cv.American Beauty		CONCLUDED
5	Evaluation of coppicing ability and yield in different diameter classes of <i>Acacia mangium</i>		CONCLUDED
6	<i>In vitro</i> regeneration of Eucalyptus (<i>Eucalyptus tereticornis</i>)		CONCLUDED

Please see the final suggestion is

**PROCEEDINGS OF TWELFTH JOINT AGRESKO MEETING OF
NAVSARI AGRICULTURAL UNIVERSITY HELD ON 22nd MARCH, 2016**

Venue : Sardar Smruti Kendra Hall , NAU, Navsari **Time:** 9:00 a.m. onwards

Chairman: Dr. C. J. Dangaria, Hon'ble Vice-Chancellor, NAU, Navsari.

Co-Chairman: Dr. A. N. Sabalpara, Director of Research & Dean, P.G. Studies, NAU, Navsari.

Rapporteur : 1. Dr. J J Pastagia, Programme co-ordinator, KVK Surat.
2. Dr. D A Chauhan, Asso Res Sci, Pulses and Castor Res st.

The 12th Joint Agresko meeting of NAU was commenced with the welcome addressed by Dr. K. A. Patel, Associate Director of Research, NAU, Navsari who welcomed Hon'ble Vice-Chancellor, Director of Research, Deans, Conveners, Professors and Scientists. Thereafter, Dr. A.N. Sabalpara, Director of Research and Dean PG Studies, NAU, Navsari gave brief account of research resume of different Agresko Sub-committees and appreciated the efforts made by scientists for bringing out more number of varieties and useful recommendations for farmers as well as scientific community. He specifically mentioned about the new technical programmes on different aspects as per farmers and market demand.

Dr. B. G. Solanki, (Convener, Crop Improvement), Dr. J. G. Patel, (Convener, NRM), Dr. B. R. Parmar (Convener, Horti & Forestry), Dr. Z. P. Patel, (Convener, Plant Protection), Dr.. N.M. Shah, (Convener, Agril. Engineering), Dr. R M Patel, (Convener, Basic Science), Dr. Narendrasingh, (Convener, Social Science), Dr. R. M. Patel, (Convener, Animal Health) and Dr. V. B. Kharadi, (Convener, Animal Production) had presented their proceeding of respective discipline before the house. All the recommendations presented by different conveners were thoroughly screened by the house and approved with some suggestions. The proceeding is given in tabular form as under:

12.3.18	Standardization of method for extraction of Noni (<i>Morinda citrifolia</i>) fruit juice	Accepted with following suggestion: 1. Remove can be from recommendation 2. Give process in recipe form 3. Give pasteurization temperature, pressure, time etc. 5. Recast in simple language	Asso. Proessor (PHT) ACHF, Navsari
12.3.19	Standardization of formulations for preparation of noni mango nectar from Noni juice	Accepted with following suggestion: 1. Remove can be from recommendation 2. Give process in recipe form/flow chart 3. Recast in simple language	Asso. Proessor (PHT) ACHF, Navsari
12.3.20	Evaluation and modification of banana comb cutter	Accepted with following suggestion: 1. Put photograph 2. Mention original equipment and change made in that	Asso. Proessor (PHT) ACHF, Navsari
12.3.21	Standardization of method for preparation of candy from bitter gourd (<i>Momordica charantia</i> L.)	Accepted with following suggestion: 1 Write as it is recommended to home makers instead of house wives	Asso. Proessor (PHT) ACHF, Navsari
12.3.22	Effect of different types of processing on the nutritional quality of green gram, kidney bean and chick pea	Accepted with following suggestion: 1. Start the recommendation with Sprouted green gram and chickpea are more... 2. Put data on nutritional value 3. Recast recommendation	FQTL
Centre : Agroforestry			
12.3.23	Investigation on tree ring analysis (Dendrochronology) to monitor radial growth responses of teak to climate in South Gujarat	Accepted with following suggestion: 1. Remove the sentence "Based on the thirty years of "	Principal, Forestry, Navsari)

12.3.24	Performance of turmeric (<i>Curcuma longa</i>) grown as an intercrop under different tree species in South Gujarat conditions	Accepted with following suggestion: 1. Number of row between trees and spacing should be mentioned	Principal, Forestry, Navsari
12.3.25	Standardization of the recipe for the preparation of candy from the fruits of Palmyra palm	Accepted with following suggestion: 1. Remove the word house wives and write as home makers 2. Remove word can be	Principal, Forestry, Navsari
12.3.26	Standardization of the recipe for the preparation of jam from the fruits of Palmyra palm	Accepted with following suggestion: 1. Give detailed recipe in form of flow chart 2. remove word "can be"	Principal, Forestry, Navsari
12.3.27	Standardization of the recipe for the preparation of jelly from the Neera of Palmyra palm	Accepted with following suggestion: 1. Recast the proposal and remove words house wives, processors and entrepreneurs and write Jelly makers. 2. Give detailed recipe in form of flow chart	Principal, Forestry, Navsari
Centre : Scientific Community			
12.3.28	Effect of different tree species leaf leachate on germination and seedling growth of some vegetable crops	Accepted with following suggestion: 1. Recast and put order of germination.	by Principal, Forestry, Navsari
12.3.29	Investigations on tree-ring analysis (Dendrochronology) to monitor radial growth responses of teak (<i>Tectona grandis</i> L.f.) to climate in South Gujarat	Accepted with following suggestion: 1. Start the recommendation with "The mean ring-width-index chronologies of teak developed for Navsari from AD 1991-2015,.."	by Principal, Forestry, Navsari
General suggestions : Recommendations related to Agri engineering should be presented in concern committee also			

List of the new technical programme proposed for the year of 2016-17	
Centre : ASPEE College of Horticulture and Forestry, Navsari	
12.3.30	Pheno-physiological studies on regular and biennial bearing of mango

12.3.102	Characterization of the sapota seed oil for extraction and value addition
12.3.103	Determination of critical limit of water salinity for <i>Ailanthus excelsa</i> Roxb. Seedlings
12.3.104	Ecological studies on selected horticulture - based agroforestry systems in South Gujarat
12.3.105	Development of volumetric equation for Teak (<i>Tectona grandis</i> L.)
12.3.106	Seed source variation for seed traits, germination and seedling vigour in <i>Cinnamomum verum</i>
12.3.107	Metagenomic analysis of flooded rice ecosystem under climate change resilience
12.3.108	Evaluation of various <i>Poplar</i> clones for early Growth and Establishment under South Gujarat condition
12.3.109	Evaluation of different <i>Salix</i> clones for early Growth and Establishment under South Gujarat condition
12.3.110	Emission of N ₂ O and CH ₄ from forests soils. (BH:12019)
12.3.111	Effect of different seed treatment and media on growth of Indian Cheese Maker - <i>Withania coagulans</i> (Stocks) Dunal
12.3.112	Documentation of basic density and calorific value of different tree species of South Gujarat
12.3.113	Growth assessment of various kinds of fishes in fresh water
12.3.114	Establishment of plantations of minor fruit species for PG research
12.3.115	Isolation and characterization of PGPRs from different Banana cultivars

**PROCEEDING OF THE TWELFTH MEETING OF
COMBINED JOINT AGRICULTURAL RESEARCH
COUNCIL OF SAUs AND KAMDHENU
UNIVERSITY- 2015-16**

ORGANIZED BY

**NAVSARI AGRICULTURAL UNIVERSITY
(APRIL 11-13, 2016)**



**DIRECTORATE OF RESEARCH
NAVSARI AGRICULTURAL UNIVERSITY
NAVSARI- 396 450**

12.4.3.13	Evaluation and modification of banana comb cutter
	<p>Recommendation: The farmers growing banana are recommended to use banana comb cutter developed by ICAR – CIPHET with the NAU developed safety cover (340 mm x 220 mm) to separate comb from banana bunch.</p> <p>ભલામણ: કેળની ખેતી કરતા ખેડૂતોને ભલામણ કરવામાં આવે છે કે કેળાની લુમમાંથી કેળાનું ઝુમખુ અલગ કરવા આઈસીએઆર-સીફેટ દ્વારા વિકસાવેલ ઓજાર અને ન.કૃ.યુ. દ્વારા વિકસાવેલ રક્ષણાવરણ (૩૪૦ એમ.એમ. ૨૨૦ એમ.એમ.) સાથે ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે.</p> <p>Suggestions: 1. This would be presented in the Agricultural Engineering Subcommittee group meeting.</p> <p style="text-align: center;">(Action:-Assoc. Professor (PHT) ACHF, NAU, Navsari)</p>
Centre: Department of Agroforestry, ACHF, NAU, Navsari	
12.4.3.14	Investigation on tree ring analysis (Dendrochronology) to monitor radial growth responses of teak to climate in South Gujarat
	<p>Recommendation for Scientific Community: It is informed to the scientific community and state forest department that the mean ring-width-index chronologies of teak developed for Navsari from AD 1991-2015, Valsad from AD 1867-2012 and Dang from 1912-2012 of South Gujarat are useful in reconstruction of past climate mainly the rainfall patterns during drought years. Furthermore, it also indicates the major El Niño and drought years of India. These ring-width-index chronologies developed for the particular time periods at the three sites are also helpful in determining the unknown year in which the teak tree was felled.</p> <p>Recommendation for Farmers: To enhance the radial growth in teak (<i>Tectona grandis</i> L.), the farmers of South Gujarat Heavy Rainfall Agro-climatic Zone-I (AES-I & III) growing teak in their plantations may give light irrigation during March and normal irrigation during peak growth period from June to July, especially, when there is a moisture stress due to deficient rainfall.</p> <p>ખેડૂતો માટે ભલામણ: દક્ષિણ ગુજરાત ભારે વરસાદીય ઝોન -૧, ખેત આબોહવાકીય પરિસ્થિતિ-૧ અને ૩ માં સાગ (ટેક્ટોના ગ્રાન્ડીસ એલ.) ની ખેતી કરનારા ખેડૂતોને ભલામણ કરવામાં આવે છે કે સાગનો સારો ધેરાવો અને સારો વિકાસ મેળવવો હોય તો માર્ચ માસ દરમ્યાન હલકું પિયત આપી શકાય. જ્યારે જુન-જુલાઈ માસમાં તેનો વિકાસ સારો થવાનો હોઈ, જો અપુરતો વરસાદ થાય તો, સામાન્ય પિયત આપવાથી ભેજ ના અભાવથી થતા તણાવની અસર ઘટાડી શકાય.</p> <p style="text-align: center;">(Action:- Principal, College of Forestry, NAU, Navsari)</p>
12.4.3.15	Performance of turmeric (<i>Curcuma longa</i>) grown as an intercrop under different tree species in South Gujarat conditions
	<p>Recommendation for farmers: The farmers of South Gujarat heavy rainfall zone – I (AES- III) growing <i>Mitragyna parvifolia</i> (Kalam), <i>Adina cordifolia</i> (Haldu) and <i>Gmelina arborea</i> (Sevan) at 10 X 2.5 m spacing are advised to grow Turmeric Variety – Sugandham planted at 30 x 15 cm spacing having 19 rows as an intercrop in plantation of <i>Gmelina arborea</i> (Sevan) for additional income.</p>

	<p>ખેડૂતો માટે ભલામણ: દક્ષિણ ગુજરાતના ભારે વરસાદીય ઝોન - ૧, ખેત આબોહવાકીય પરિસ્થિતી - ૩ માં કલમ, હલ્દુ તેમજ સેવન જેવા વૃક્ષોને ૧૦ × ૨.૫ મીટરે ઉછેરતા ખેડુતોને ભલામણ કરવામાં આવે છે કે હળદરની જાત સુગંધમને ૩૦ × ૧૫ સેમી. ના અંતરે ૧૮ જેટલી હાર રોપીને સેવનના વૃક્ષની સાથે આંતર પાક તરીકે લેવાથી વધારાની આવક મેળવી શકાય છે. (Action:- Principal, College of Forestry, NAU, Navsari)</p>																																				
<p>12.4.3.16</p>	<p>Standardization of the recipe for the preparation of candy from the fruits of Palmyra palm</p>																																				
	<p>Recommendation for farmers: Home Makers, processors and entrepreneurs are recommended that, candy from the fruits of Palmyra palm can be prepared by steeping the slices (5cm x 5mm) in sugar syrup having 65% TSS for 8 hours followed by drying of slices for 7 hours at 65°C and packed in PE pouches can be stored successfully up to six month at ambient storage.</p> <p>ભલામણ: આથી ગૃહિણીઓ, પ્રોસેસરો અને ઉદ્યોગ સાહસિકોને ભલામણ કરવામાં આવે છે કે, કે તાડફળી (ગલેલી)માંથી કેન્ડી ૬૫% ટીએસએસ વાળી ખાંડની ચાસણીમાં ગલેલીના ટુકડાઓ (૫ સેમી. X 5 મિમિ) ૮ કલાક માટે બોળીને ૭ કલાક માટે ૬૫°સે પર સૂકવણી કરી તૈયાર કરી શકાય છે અને પીઈ પાઉચમાં પેક કરી છ મહિના સુધી સફળતાપૂર્વક સંગ્રહ કરી શકાય છે .</p> <table border="0" style="width: 100%; text-align: center;"> <thead> <tr> <th style="text-align: center;"><u>Process</u></th> <th style="text-align: center;"><u>પદ્ધતિ</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Selection of Fruits</td> <td style="text-align: center;">ફળોની પસંદગી</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Peeling</td> <td style="text-align: center;">છાલ ઉતારવી</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Slicing (5cm x 5mm)</td> <td style="text-align: center;">સ્લાઈસ બનાવવી (૫ સેમીx ૫ મિમિ)</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Preparation of sugar syrup (75° Brix)</td> <td style="text-align: center;">ખાંડની ચાસણી બનાવવી (૬૫°બ્રિક્ષ)</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Steeping of slices (24 hrs)</td> <td style="text-align: center;">સ્લાઈસને ચાસણીમાં ડૂબાડવી (૮કલાક)</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Draining of syrup</td> <td style="text-align: center;">ચાસણી દુર કરવી</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Drying (65° C for 7hrs)</td> <td style="text-align: center;">સૂકવણી (૬૫° સે ૭ કલાક માટે)</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Packing</td> <td style="text-align: center;">પેકિંગ</td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Storage</td> <td style="text-align: center;">સંગ્રહ</td> </tr> </tbody> </table> <p>(Action:- Principal, College of Forestry, Navsari)</p>	<u>Process</u>	<u>પદ્ધતિ</u>	Selection of Fruits	ફળોની પસંદગી	↓	↓	Peeling	છાલ ઉતારવી	↓	↓	Slicing (5cm x 5mm)	સ્લાઈસ બનાવવી (૫ સેમીx ૫ મિમિ)	↓	↓	Preparation of sugar syrup (75° Brix)	ખાંડની ચાસણી બનાવવી (૬૫°બ્રિક્ષ)	↓	↓	Steeping of slices (24 hrs)	સ્લાઈસને ચાસણીમાં ડૂબાડવી (૮કલાક)	↓	↓	Draining of syrup	ચાસણી દુર કરવી	↓	↓	Drying (65° C for 7hrs)	સૂકવણી (૬૫° સે ૭ કલાક માટે)	↓	↓	Packing	પેકિંગ	↓	↓	Storage	સંગ્રહ
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12.4.3.17	Standardization of the recipe for the preparation of jam from the fruits of Palmyra palm
	<p>Recommendation for farmers:- Home Makers, processors and entrepreneurs are recommended that jam from the tender fruits of palmyra palm can be prepared by using pulp:sugar ratio (1:1.2) and addition of pectin 16g/kg of pulp and it also can be stored for six months at ambient temperature in glass bottle.</p> <p>ભલામણ:- આથી ગૃહિણીઓ, પ્રોસેસરો અને ઉદ્યોગસાહસિકોને ભલામણ કરવામાં આવે છે કે, તાડફળી (ગલેલી)માંથી માવો:ખાંડનું પ્રમાણ (૧:૧.૨) અને ૧૬ ગ્રામ પેક્ટીન પ્રતિ કિલો માવા દિઠ ઉમેરીને મિશ્રણને ૬૫°બ્રિક્ષ ટીએસએસ સુધી ઉકાળીને જામ બનાવી શકાય છે તેમજ તેને કાચની બરણીમાં પેક કરીને સામાન્ય તાપમાને છ (૬) માસ સુધી સંગ્રહી શકાય છે.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Process</p> <p>Selection of Fruits</p> <p>↓</p> <p>Peeling</p> <p>↓</p> <p>Slicing (5cm x 5mm)</p> <p>↓</p> <p>Preparation of sugar syrup (75° Brix)</p> <p>↓</p> <p>Steeping of slices (24 hrs)</p> <p>↓</p> <p>Draining of syrup</p> <p>↓</p> <p>Drying (65° C for 7hrs)</p> <p>↓</p> <p>Packing</p> <p>↓</p> <p>Storage</p> </div> <div style="text-align: center;"> <p>પદ્ધતિ</p> <p>ડુંગળીની પસંદગી</p> <p>↓</p> <p>છાલ ઉતારવી</p> <p>↓</p> <p>સ્વાઈસ બનાવવી (૫ સેમિx ૫ મિમિ)</p> <p>↓</p> <p>ખાંડની ચાસણી બનાવવી (૬૫°બ્રિક્ષ)</p> <p>↓</p> <p>સ્વાઈસને ચાસણીમાં ડૂબાડવી (૮કલાક)</p> <p>↓</p> <p>ચાસણી દુર કરવી</p> <p>↓</p> <p>સુકવણી (૬૫° સે ૭ કલાક માટે)</p> <p>↓</p> <p>પેકિંગ</p> <p>↓</p> <p>સંગ્રહ</p> </div> </div> <p style="text-align: center;">(Action:- Principal, College of Forestry, NAU, Navsari)</p>
12.4.3.18	Standardization of the recipe for the preparation of jelly from the Neera of Palmyra palm
	<p>Recommendation:- Home Makers, processors and entrepreneurs are recommended that jelly from the <i>Neera</i> can be prepared by using pectin 13 g/kg of <i>Neera</i> and can be safely stored for six months. Recipe should be <i>Neera</i>:sugar (1:1.1), 0.5% acidity (50 g citric acid per kg of jelly) and pectin. Boil the mixture till 68°Brix followed by hot filling in to glass bottle.</p> <p>ભલામણ:- આથી ગૃહિણીઓ, પ્રોસેસરો અને ઉદ્યોગસાહસિકોને ભલામણ કરવામાં આવે છે કે, પેક્ટીન ૧૩ ગ્રામ પ્રતિ કિલો વાપરીને નીરામાંથી જેલી બનાવી શકાય છે તેમજ ૬(છ) માસ સુધી સુરક્ષિત રીતે સંગ્રહી શકાય છે. રેસિપિ –</p>

	<p>નિરા:ખાંડ (૧:૧.૧) પ્રમાણે, ૦.૫ એસિડીટી, ૮૫૦ ગ્રામ લીંબુના ફુલ ૧ કિલો જેલી દીઠ અને પેક્ટીનના મિશ્રણને ૬૮°બ્રિક્સ સુધી ઉકાળીને ગરમ ગરમ કાચની બરણીમાં ભરવી.</p> <table border="0" style="width: 100%; text-align: center;"> <thead> <tr> <th style="text-decoration: underline;">Process</th> <th style="text-decoration: underline;">પદ્ધતિ</th> </tr> </thead> <tbody> <tr> <td>Neera</td> <td>નીરા</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Heating for a while</td> <td>થોડી વાર માટે ગરમ કરવું</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Addition of sugar and boil till sugar dissolve</td> <td>ખાંડ ઉમેરવી અને ખાંડ ઓગળી જાય ત્યાં સુધી ઉકાળવું</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Addition of citric acid</td> <td>લીંબુના ફૂલ ઉમેરવા</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Addition of Pectin</td> <td>પેક્ટીન ઉમેરવું</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>End point (68° Brix)</td> <td>છેલ્લો પોઈન્ટ (૬૮°બ્રિક્સ)</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Filling in to bottle</td> <td>બોટલમાં ભરવું</td> </tr> <tr> <td>↓</td> <td>↓</td> </tr> <tr> <td>Storage</td> <td>સંગ્રહ</td> </tr> </tbody> </table> <p>(Action:- Principal, College of Forestry, NAU, Navsari)</p>	Process	પદ્ધતિ	Neera	નીરા	↓	↓	Heating for a while	થોડી વાર માટે ગરમ કરવું	↓	↓	Addition of sugar and boil till sugar dissolve	ખાંડ ઉમેરવી અને ખાંડ ઓગળી જાય ત્યાં સુધી ઉકાળવું	↓	↓	Addition of citric acid	લીંબુના ફૂલ ઉમેરવા	↓	↓	Addition of Pectin	પેક્ટીન ઉમેરવું	↓	↓	End point (68° Brix)	છેલ્લો પોઈન્ટ (૬૮°બ્રિક્સ)	↓	↓	Filling in to bottle	બોટલમાં ભરવું	↓	↓	Storage	સંગ્રહ
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12.4.3.19	<p>Effect of different tree species leaf leachate on germination and seedling growth of some vegetable crops</p>																																
	<p>Recommendation for scientific community:</p> <p>The leaf leachates of various tree species reduced germination and growth parameters of different vegetable crops in laboratory as well as in nursery condition. The percentage of inhibition was maximum in Eucalyptus as compared to other tree species leaf leachates in laboratory as well as in nursery condition. Moreover the percentage of inhibition was minimum in Teak. The different vegetable crops have different mode of inhibition during the study. In both the growing conditions Brinjal (<i>Solanum melongena</i>), Okra (<i>Abelmoschus esculentus</i>) and Tomato (<i>Lycopersicon esculentum</i>) performed better for all parameters under study for the respective years of investigation while, V₅: Chilli (<i>Capsicum anum</i>) performed poor for all the parameters under study. In case of leachates concentration, all the parameters under study were decreased as the concentration of leaf leachates increased in both the growing conditions. This response showed concentration dependent phenomenon as highest inhibitory effects were observed with 20 % leaf leachate concentration of all the tree species.</p> <p>(Action:- Principal, College of Forestry, NAU, Navsari)</p>																																

NEW TECHNICAL PROGRAMME - 2016 (Previous Year)

59.	Standardization of technology for preparation of candy from ripe papaya (<i>Carica papaya</i> Linn.) fruits.	Approved as Such (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
60.	Standardization of technology for preparation of Tomato (<i>Solanum lycopersicum</i> L.) powder for home scale adoption	Not approved (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
61.	Development of technology for preservation of tender coconut water	Not approved (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
62.	Development of technology for health based digestive tablets from noni pomace powder.	Accepted with following suggestion/s 1. Remove health based word from the title (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
63.	Characterization of the Sapota seed oil for extraction and value addition	Not Approved (Suggested to take filler trial) (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
64.	Home scale ripening of Banana cv. Grand Naine	Approved as Such (Action:- Research Scientist, SWMRU, NAU, Navsari)	
65.	Effect of pre-cooling on quality and shelf-life of Banana Cv. Grand Naine	Not approved (Action:- Associate Professor & Head, PHT, NAU, Navsari)	
66.	Isolation, Characterization and filed efficacy of PGPRs from different banana cultivars	Approved in Basic Science Committee (Action:-Associate Professor, Department of Plant Molecular Biology and Biotechnology, ACHF, NAU, Navsari)	
67.	Determination of Nutritional Composition of Minor Fruits	Accepted with following suggestion/s 1. Remove Chironji from crop and variety (Action:- I/C Professor & Head (FQTL), NAU, Navsari)	
✓ 68.	Determination of critical limit of water salinity for <i>Ailanthus excelsa</i> Roxb. Seedlings	Accepted with following suggestion/s 1. Add local name of <i>Ailanthus excelsa</i> also in title 2. Add ESP in observation (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	

69.	Development of volumetric equation for Teak (<i>Tectona grandis</i> L.) in South Gujarat	Accepted with following suggestion/s 1. Write derivation instead of development in title. (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
70.	Seed source variation for seed traits, germination and seedling vigour in <i>Cinnamomum verum</i> J. Presl	Accepted with following suggestion/s 1. Also collect possible accessions from FRS, Gandevi (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
71. X	Metagenomic analysis of flooded rice ecosystem under climate change resilience	Not approved* 1. Present in Basic Science sub committee (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
72.	Evaluation of various <i>Poplar</i> clones for early Growth and Establishment under South Gujarat condition	Approved as such (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
73.	Evaluation of different <i>Salix</i> clones for early Growth and Establishment under South Gujarat condition	Approved as such (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
74.	Emission of N ₂ O and CH ₄ from forests soils.	Accepted with following suggestion/s 1. Add CO ₂ in observation (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
75.	Effect of different seed treatment and media on growth of Indian Cheese Maker - <i>Withania coagulans</i> (Stocks) Dunal	Approved as such (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
76.	Documentation of basic density and calorific value of different tree species of South Gujarat.	Approved as such (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
77.	Growth assessment of various kinds of fishes in fresh water.	Not Approved* Present this programme in Animal Science and Fisheries sub committee (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	
X 78.	Establishment of plantations of minor fruit species for PG research	Not Approved (Action:-Principal, College of Forestry, ACHF, NAU, Navsari)	

Performa for status of report of new technical programmes of previous years

Sr. No.	NTP No.	NTP Title	Department	Status of NTP	Remark