



DEPARTMENT OF RENEWABLE ENERGY ENGINEERING
COLLEGE OF AGRICULTURAL ENGINEERING &
TECHNOLOGY
DEDIAPADA, DIST- NARMADA
NAVSARI AGRICULTURAL UNIVERSITY,
NAVSARI



Dr. S. H. Sengar
Assoc. Prof. & Head
Convener, Agril. Engg. 13th Agresco

Phone : (02649) 234200
Email: shsengar@nau.in

No. CAE/ Dedia./ ²²⁸⁷2016
₂₂₉₀

Date: 20/12/2016

To: Members of AGRESKO Sub-Committee of Agricultural Engineering discipline
.....
.....
.....

Sub.: Regarding 13th AGRESKO Meeting.

Ref.: Ref.-Circular from the director of research, Navsari Vide No. NAU/RES/T-
5/AGRESKO/16008/2016 dated 01/12/2016

All the members of AGRESKO Sub-Committee of Agricultural Engineering discipline are hereby informed that, the 13th Agricultural Engineering Sub-Committee meeting is scheduled on 03.02.2017. Therefore, all the members are requested to send concern On-going Research Progress Reports, New Technical Programs and recommendations to all the members as well as in five copies (soft copy on [email-shsengar@nau.in](mailto:shsengar@nau.in)) to the undersigned before 20.01.2017. You are also requested to submit the Action Taken Report on comments of last meeting separately to undersigned for compilation. All are also informed to be remain present on 03.02.2017 for the presentation of their report in the Conference Hall, 1st floor, ASPEE College of Horticulture and Forestry, NAU, Navsari. Members are requested to prepared their report in A-4 Size papers and send two hard copies and a soft copy to the Director of Research and Dean PG Studies , NAU, Navsari.


(S. H. Sengar)
Convener
AGRESKO Sub
Committee
Agricultural Engineering

Copy W.C. to;

- PS to Hon. VC for information.
- Director of Research and Dean PG Studies, NAU, Navsari.
- All members of Agricultural Engineering Sub Committee.

o/c

Report on Inaugural Session

12th "AGRESCO" meeting of Agricultural Engineering Sub-Committee, Navsari Agricultural University, Navsari

Date: Feb 23, 2016

Venue: SwamiVivekanand Hall, ASPEE College of Horti. and Forestry, Navsari

The XIIth meeting of the Agricultural Engineering AGRESCO Sub-Committee of Navsari Agricultural University was held in the SwamiVivekanand Hall, ASPEE College of Horticulture and Forestry, Navsari on Feb 23, 2016. The members on dais were; Prof. P. R. Pandey, Dr. P. K. Srivastava, Dr. Sunil Chaudhari, Dr. B. N. Patel, Prof. N. M. Shah, and Dr. P. R Bhatnagar. All the members and invited members participated in the meeting as per approved list; except Dr. A. N. Sabalpara, Dr. G. R. Patel, Prof. Manjushree Singh, Representative from ASPEE Foundation Malad-Mumbai, Representative from Suruchi Farm-Bardoli, Dr. K. A. Patel and Prof. S. P. Shukla.

The meeting commenced with the welcome address by the convener Prof. N. M. Shah and flowerily welcome of dignitaries. Dignitaries of dais have inaugurated the function by lightening the lamp.

Dr. B. N. Patel, Dean Horticulture and Forestry has emphasized to put more research for the need of interior area of South Gujarat which includes soil conservation and water management, reduction in input cost in farming and post harvest losses.

Dr. Sunil Chaudhary, ADR, NAU has highlighted the problem of energy and water shortage for farm management operations. He stressed to conduct research on maintaining the productivity of farm with minimum water requirement, as industrialization is competing with agriculture for land as well as water. He also hopes for research from this group for research problem on use of kitchen waste for production of bio-gas.

Dr. P. R. Bhatnagar, Head of Institute, CSWCRTI, ICAR, Vasad has focused on multidisciplinary research on all the area of agricultural engineering. He has

illustrated the working pattern of CIPHET-Ludhiana and CIAE-Bhopal the leading institute of India in the field of agricultural engineering and explore the benefit of that to over all development of agricultural engineering.

Prof. P. R. Pandey, Dean-Agricultural Engineering, NAU has focused on development of laboratory for research work and practical related to agricultural engineering. He has requested to authority of university to give relaxation in the higher studies for faculty of agricultural engineering. He also requested to dean of various faculty to provide staffs and facilities for the development of agricultural engineering faculty for integrated departmental and student research. He has realized the house that, there is need of more support from university management for enhancing the facilities at College of Agricultural Engineering and Technology, Dediapada.

The action taken report on the minutes of 11th Agricultural Engineering Research Sub-committee meetings were presented by the convener Prof. N. M. Shah after incorporation the suggestions made by house of combine-joint AGRESCO-Agril-Engg, SAUs,; Combine AGRESCO, NAU and AGRESCO Agril-Engg, NAU. The house has approved the action taken by the concerned scientists on that. The house has seriously discussed on six recommendations of the agricultural engineering sub-committee, NAU which were differed in the 11thCombine-Joint AGRESCO of SAUs at Anand and suggested that the person having the recommendation should be allowed to represent at respective sub-committee for justified presentation of the research outcome. All the dignitaries on dais agreed with the suggestion and confirm to discuss the issue with Director of Research, NAU. Dr. B. N. Patel and Dr. Sunil Chaudhari have advised to Prof. N. M. Shah, Convener of Agricultural Engineering Sub-committee to use standardized format for preparation of Action Taken Report after writing the actual action taken by respective scientists for particular suggestion. The Convener of Agricultural Engineering Sub-committee has to re-submit the corrected Action Taken Report to Director of Research, NAU.

The session ended with a vote of thanks proposed by Dr. P.K.Shrivastava, Principal, College of Forestry, NAU.

Technical Session – I (Before noon)

Recommendations:	Chairman: Dr. P. R. Bhatnagar, Head ICAR - IISWC Research Centre, Vasad Co-chairman : Dr. Sunil Chaudhari, ADR, NAU, Navsari Repporteurs : Er. P. S. Pandit, Asst. Prof., PHTC, NAU Er. A. K. Senapati, Asst. Prof., PHTC, NAU
-------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

NUMBER OF RECOMMENDATION WITH EACH CENTER

1. Center of Excellence on PHT, Navsari :01
2. College of Agricultural Engineering and Technology, Dediapada :01

1.1: Center of Excellence on Post Harvest Technology, NAU, Navsari:

Title: “Evaluation and modifications of banana (*Musaparadisiaca L.*) comb cutter.”

House has approved the recommendation with following suggestion;

- Table No-2 should be assessed and analyzed using GRA. Treatment wise cost analysis should be done.
- Recast the recommendation based on observations.

The recommendation incorporating the required correction made by house is as given below:

Recommendation:

The farmers and farm-labors are recommended to use safety cover along with comb cutter for separation of comb from banana bunch.

ભલામણ:

ખેડુતો અને ખેત-મજૂરોને ભલામણ કરવામાં આવે છે કે કેળાની લુમમાંથી કેળાનું ઝુમખું અલગ કરતી વખતે રક્ષણાવરણ સાથેનું કેળાના ઝુમખા કાપવાનું ઓજાર વાપરવું.

(Action: I/c, CE on PHT, Navsari)

1.2: College of Agricultural Engineering and Technology, N.A.U., Dediapada.

Title: “Study relating to “Formulating long-term mechanization strategy for Dediapad taluka.”

House has approved the recommendation with following suggestion;

- Find the gap in mechanization from collected data.
- Recast the recommendation para for scientific community for future research on mechanization.

The recommendation incorporating the required correction made by house is as given below:

RECOMMENDATION

Design, development and popularization of small hand tools and equipment suitable for Dediapada region needs to be done on priority bases in order to enhance mechanization index and also income of the farmer.

ભલામણ:

દેડીયાપાડા વિસ્તારના ખેડૂતોની આવક તેમજ ખેતી યાંત્રીકરણ વધારવા માટે નાના હાથના સાધનો અને યંત્રોની ડિઝાઈન તૈયાર કરવા, તેને વિકસાવવા તથા પ્રચાર-પ્રસાર કરવા કાર્યક્રમને અગ્રિમતા આપવાની જરૂરીયાત છે.

(Action: Dean, CAET, Dediapada)

Technical Session – II (After noon)

New Technical Programs and On-going Experiments	Chairman: Dr. B. N. Patel Co-Chairman: Dr. P. K. Shrivastava Rapporteur: Er. B. N. Soliya Er. N. G. Savani
--------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------

NUMBER OF NEW TECHNICAL PROGRAMS WITH EACH CENTER

1. Center of Excellence on PHT, Navsari :02
2. Department of Agricultural Engineering, NMCA, Navsari :01
3. Soil and water management Research Unit, Navsari :03
4. College of Agricultural Engineering and Technology, Dediapada :08
5. Dept.of Information & Communication Technology,AABMI, Navsari :04

2.1: Center of Excellence of PHT, Navsari

Title: “Standardization of technology for preparation of Tomato (*Solanum lycopersicum* L.) Powder for home scale adoption.”.

The house approved the program with following suggestions:

- P I, Co-PI & Associates (Maximum Three Names) write as an investigator
- Replace Avinash Verity by other two verities
- Delete treatments (T₁ to T₄)
- Present this experiment in Horticultural AGRESCO Sub - Committee.

(Action: I/c, CE on PHT, Navsari)

Title: Technology for utilization of Orange Peel and Seed

The house approved the program with following suggestions:

- Include details in report as per your PPT.
- Mention sample size
- Delete C – Part from the experiment
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: I/c, CE on PHT, Navsari)

2.2: Department of Agricultural Engineering, NMCA, Navsari

Title: Enhancing soil condition and crop productivity of green gram and wheat cropping system through land leveling and surface drainage in vertisol of south Gujarat

The house approved the program with following suggestions:

- Recast experiment after consultation with Dr. P. K. Shrivastava, Dr. J. D. Thanki and Er. B. M. Soliya
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: I/c Prof. and Head, Dept. of Agril. Engg., NMCA, Navsari)

2.3.: Soil and Water Management Research Unit, N.A.U., Navsari.

Title: Effect of different colour shade nets on biomass and quality of leafy vegetables (Fenugreek, coriander and garlic)

The House approved the program with the following suggestions:

- Delete the 1st Observation – Height, leaves and branches
- Add quality observations i.e. Pungency, vitamin etc.

(Action: Research Scientist, SWMRU, Navsari)

Title: Modification of NAU designed hold – on type power operated Paddy thresher

The house approved the program with the following suggestions:

- Add vigor index
- Add Grain moisture content in observation
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Research Scientist, SWMRU, Navsari)

Title: Evaluation of irrigation scheduling in rice crop by using field water tube (alternative wetting and drying method)

- The House approved the program
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Research Scientist, SWMRU, Navsari)

2.4: College of Agricultural Engineering and Technology, N.A.U., Dediapada.

Title: Performance evaluation of Scheffler Solar Concentrating Cooker for direct and indirect community cooking application

- The House approved the program
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Dean, CAET, Dediapada)

Title: Development of facility to observe the climatic parameter for solar systems at Dediapada location

The house approved the program with the following suggestions:

- Recast the title and objectives after consultation with Dr S. H. Sengar, Associate Professor, CAET, Dediapada.
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Dean, CAET, Dediapada)

Title: Trends of Rainfall and temperature variation in Narmada District of Gujarat

The house approved the program with the following suggestions:

- Recast the experiment for forecasting rainfall and temperature of the region
- Also editing the major crops of the region.
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Dean, CAET, Dediapada)

Title: Development of studies of Sapota (Chikoo) Powder based value added product (pasta) using semolina (Suji) and maida

The house approved the program with the following suggestions:

- Add storage period of 3 months and 6 months interval in observation
- Sample size should be mention (500g)
- Evaluate Alcoholic acidity test
- Add E- Colie test

(Action: Dean, CAET, Dediapada)

Title: comparative Studies on the different drying methods on ber (*Ziziphus mauritiana*)

The house approved the program with the following suggestions:

- Recast the experiment as per the prescribed format.
- Sample size should be mentioned (10 kg)
- Statistical analysis should be RBD
- Cancel the Solar drying method
- Adopt the wild type of variety of ber.

(Action: Dean, CAET, Dediapada)

Title: Effect of laser leveling on crop water requirement and growth of wheat crop

The house approved the program with the following suggestions:

- Recast the experiment as per the prescribed format
- use the word water use efficiency in place of crop water requirement
- Change the plot size to 10 m × 50m in place of 60m × 60m
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Dean, CAET, Dediapada)

Title: Design and development of raised bed former-cum- seeder for heavy clay soil condition for South Gujarat

The house approved the program with the following suggestions:

- Use clay loam soil in place of heavy clay soil
- Use the word 35hp Tractor in place of farm track 60
- P I, Co-PI & Associates (Maximum Three Names) write as an investigator

(Action: Dean, CAET, Dediapada)

Title: Design and development of suitable furrow opener for heavy clay soil condition for South Gujarat

The house approved the program with the following suggestions:

- Approved as filler trial

(Action: Dean, CAET, Dediapada)

2.5: Department of Information & Communication Technology, AABMI, Navsari

Title: A Study on technical feasibility and development of online Financial Approval system for SAUs.

- The House approved the program

(Action: Dept. of ICT,AABMI,NAU, Navsari)

Title: Development program for online tour approval for NAU

- The House approved the program

(Action: Dept. of ICT,AABMI,NAU, Navsari)

Title: Developing mobile App for the APMC operations.

- The House approved the program

(Action: Dept. of ICT,AABMI,NAU, Navsari)

Title: Developing web portal for the farmers of South Gujarat Region

- The House approved the program

(Action: DICT,AABMI,NAU, Navsari)

Technical Session – III (After noon)

status report of NTP and ongoing Experiment	Chairman: Dr. B. N. Patel Co-Chairman: Dr. P. K. Shrivastava Rapporteur : Er. S. H. Sengar Dr. H. Sanchavat
----------------------------------------------------	----------------------------------------------------------------------------------------------------------------------

Performa for status report of new technical programmes of previous years

Sr. No	NTP No.	NTP Title	Department	Status of NTP
11.5.1	15/AE/NRMAC HF/01	Irrigation Scheduling of teak seedling grown in nurseries	Department of Natural Resource Management, ACHF, Navsari	It is in progress
11.5.2	15/AE/PHT/02	Packaging studies of freshly roasted immature sorghum 'Sorghum Bicolor' seed (Pauk)	Center of Excellence on PHT, Navsari	Modification required regarding sulphated and heat treatment on product
11.5.3	15/AE/PHT/03	Packaging and storage studies of drumstick 'Moringa oleifera' and its pulp	Center of Excellence on PHT, Navsari	It is in progress
11.5.4	15/AE/PHT/04	Design of Card Board box for Packaging of Kesar Mango	Center of Excellence on PHT, Navsari	Experiment should be discuss in Combined joint AGRESCO-2016 for continuation as it was dropped in combined joint AGRESCO -2015
11.5.5	15/AE/AE NMCA/05	Determining feasibility of an on farm reservoir for rice based cropping system in south Gujarat under climatic change scenario	Department of Agricultural Engineering, NMCA, Navsari	Modification required regarding bund dimension & slope should be maintained
11.5.6	15/AE/AE NMCA/06	Evaluation of the laser leveled land leveling technology on crop yield, water use productivity & growth of Banana crop in South Gujarat	Department of Agricultural Engineering, NMCA, Navsari	It is in progress
11.5.7	15/AE/CAET DEDIYAPADA /07	Modeling yield and Evapotranspiration (Oryza sativa L.) of rice as influenced by transplanting date and weather parameters	College of Agricultural Engineering and Technology, Dediapada	It is in progress

11.5.8	15/AE/COA WAGHAI/08	Quantitative Determination of Soil Erosion and Prioritization of Micro-watersheds using Remote Sensing and GIS	College of Agriculture, Waghi	It is in progress With deleting the word MUSLE and add USLE
11.5.9	15/AE/COA WAGHAI/09	Assessment of Water Resources of Navsari and Dang District using water Quality Index and GIS	College of Agriculture, Waghi	Quantity word added and so the Experiment should be discuss in Combined joint AGRESCO-2016
11.5.10	15/AE/LPT	Studies on development of burfi utilizing watermelon (<i>Citrullus lanatus</i>) rind	LPT, College of Veterinary Science & A.H.,	It is in progress
11.7.29	15/SS/AIABM/ 29	A study on technical feasibility and development of Mobile App for Agricultural Information Dissemination to the farming community	Department of ICT, AABMI, NAU, Navsari	Farmer's suggestion should incorporated
11.7.30	15/SS/AIABM/ 30	A study on technical feasibility and development of the KIOSK system for the information dissemination to the farmers	Department of ICT, AABMI, NAU, Navsari	It is in progress
11.7.31	15/SS/AIABM/ 31	Developing mobile App for strengthening co-operative operations	Department of ICT, AABMI, NAU, Navsari	It is in progress
11.7.32	15/SS/AIABM/ 32	A study on perception and satisfaction of agricultural information delivered by the KVK through SMS	Department of ICT, AABMI, NAU, Navsari	It is in progress

NUMBER OF ON-GOING EXPERIMENTS WITH EACH CENTER

1. Department Natural Resource Management, ACHF, Navsari :07
2. Center of Excellence on PHT, Navsari :06
3. Department of Agricultural Engineering, NMCA, Navsari :04
4. Soil and water management Research Unit, Navsari :02
5. College of Agricultural Engineering and Technology, Dediapada :02
6. College of agriculture, Waghai :02
7. LPT, College of Veterinary Science & A.H.,NAU, Navsari :01
8. Department of ICT, AABMI, NAU, Navsari :04

The house observed the data and discussed the progress of various experiments presented by the respective scientists.

PLENARY SESSION:

The outcome of the different technical sessions was briefed by the convener and the meeting ended with his vote of thanks.

(N. M. Shah)
Convener

12.5 Agricultural Engineering

Recommendation for Farmers			
Centre : Excellence on Post Harvest Technology, NAU, Navsari			
12.5.1	“Evaluation and modifications of banana (<i>Musaparadisiaca</i> L.) comb cutter”	Accepted with following suggestions 1. Put Photo.	I/c, CE on PHT, Navsari
Recommendation for Scientific			
Centre : Agricultural Engineering and Technology, N.A.U., Dediapada			
12.5.2	“Study relating to Formulating long-term mechanization strategy for Dediapad taluka.”	Accepted with following suggestions 1. Do not put general statement 2. Mention sowing to harvesting mechanization	Dean, CAET, Dediapada

List of the new technical programme proposed for the year of 2016-17	
Centre : Excellence of PHT, Navsari	
12.5.3	“Standardization of technology for preparation of Tomato (<i>Solanum lycopersicum</i> L.) Powder for home scale adoption
12.5.4	Technology for utilization of Orange Peel and Seed
Centre : Agricultural Engineering, NMCA, Navsari	
12.5.5	Evaluation of Land Leveling and Sowing Methods on Yield and Water use efficiency of Sorghum (<i>Sorghum bicolor</i> L.) Crop in Vertisol of South Gujarat
Centre : Soil and Water Management Research Unit, N.A.U., Navsari	
12.5.6	Effect of different colour shade nets on biomass and quality of leafy vegetables (Fenugreek, coriander and garlic)
12.5.7	Modification of NAU designed hold – on type power operated Paddy thresher
12.5.8	Evaluation of irrigation scheduling in rice crop by using field water tube (alternative wetting and drying method)
Centre : College of Agricultural Engineering and Technology, N.A.U., Dediapada	
12.5.9	Performance evaluation of Scheffler Solar Concentrating Cooker for direct and indirect community cooking application
12.5.10	Design, development and performance evaluation of mixed mode cabinet solar dryer
12.5.11	Trends of Rainfall and temperature variation in Narmada District of Gujarat
12.5.12	Development of studies of Sapota (Chikoo) Powder based value added product (pasta) using semolina (Suji) and maida (Suggestion : Check with Agro. Work)
12.5.13	comparative Studies on the different drying methods on ber (<i>Ziziphus mauritiana</i>)
12.5.14	Effect of laser levelling on water use efficiency and growth of wheat crop (Suggestion : Change Crop)
12.5.15	Design and development of raised bed former-cum-seeder for clay loam soil condition for Narmada
12.5.16	Design and development of suitable furrow opener for heavy clay soil condition for South Gujarat
Centre : Information & Communication Technology, AABMI, Navsari	

12.5.17	A Study on technical feasibility and development of online Financial Approval system for SAUs
12.5.18	Development program for online tour approval for NAU
12.5.19	Developing mobile App for the APMC operations
12.5.20	Developing web portal for the farmers of South Gujarat Region

THE BASIC OBJECTIVES

12.5.17	To study the technical feasibility and development of online Financial Approval system for SAUs
12.5.18	To develop a program for online tour approval for NAU
12.5.19	To develop a mobile App for the APMC operations
12.5.20	To develop a web portal for the farmers of South Gujarat Region

(3)

12th meeting of Combined Joint Agriscan held on 11-13/04

NAU	9	4	1	1	27	23
SDAU	0	0	0	0	10	10
Kamdhenu	0	0	0	0	1	1
Grand Total	38	32	18*	19*	87	81

*One recommendation proposed for farmer community is approved for scientific community

12.5.1 RECOMMADATIONS

A - FARMING / INDUSTRY COMMUNITY

NAVSARI AGRICULTURAL UNIVEERSITY

12.5.3.1

Preparation of Ready to Serve (RTS) beverage from banana pseudostem sap.

Farmers and processors are recommended to utilize blend of banana pseudostem sap and aonla fruit juice having 3.5% and 8% TSS respectively with the ratio of 90:10 for the preparation of ready to serve drink. The drink packed in glass bottle after pasteurization at 87⁰ C for 15 min followed by sterilization in bottles at 96 ± 1⁰ C for 25 min has storage stability for six month at ambient condition.

ખેડુતો અને પ્રોસેસરોને કેળાના થડના રસ અને આમળાના રસ કે જેના ટી. એસ. એસ. અનુક્રમે ૩.૪ % અને ૮ % હોય તેને ૯૦:૧૦ પ્રમાણમાં મીશ્રણ બનાવી પીરસવા માટે તૈયાર પીણું બનાવવાની ભલામણ કરવામાં આવે છે. આ પીણાને ૮૭⁰ સે. તાપમાને ૧૫ મીનીટ પાસ્ચરાઈઝ કરી ગ્લાસની બોટલમાં ભરી ૯૬ ± ૧⁰ સે તાપમાને ૨૫ મીનીટ સ્ટરીલાઈઝ કરવાથી સામાન્ય તાપમાને ૬ મહિના સુધી સંગ્રહ કરી શકાય છે.

(Action: I/c, CE on PHT, Navsari)

12.5.3.2

Study of effect of drainage on banana production in South Gujarat

Farmers of South Gujarat Heavy Rainfall Zone (AES-III), growing banana are advised to follow 45cm deep open drainage system (bottom width 15cm and top width 105cm) spaced 12 m apart with 1:1 side slope and a bed slope of 0.05%, to achieve higher yield and maximum net return.

દક્ષિણ ગુજરાતના વધુ વરસાદ વાળા ખેત આબોહવાકીય વિસ્તાર-૩ મા કેળની ખેતી કરતા ખેડૂતોને વધુ ઉત્પાદન અને આર્થિક વળતર મેળવવા ૧૨ મીટર અંતરે ૪૫ સેમી ઉડી તથા બાજુએ ૧:૧ નો તથા ૦.૦૫ % સમાંતર ઢાળવાળી ખુલ્લી નીતાર નીક (પાયાની પહોળાઈ ૧૫ સે.મી. અને ઉપરની પહોળાઈ ૧૦૫ સે.મી.) બનાવવા ભલામણ કરવામાં આવે છે.

(Action: I/c Prof. and Head, Dept. of Agril. Engg., NMCA, Navsari)

12.5.3.3

Effect of laser leveling on crop water requirement and growth of castor crop

Farmers of South Gujarat Heavy Rainfall Zone (AES-III), growing irrigated castor (GCH-7) during rabi season are advised to adopt laser land leveling technique to provide 0.45 per cent longitudinal slope to castor field for getting higher castor yield, net return and water saving.

દક્ષિણ ગુજરાતના ભારે વરસાદ વાળા વિભાગ (કૃષિ આબોહવાકીય પરિસ્થિતી -૩) માં રવિ ઋતું દરમ્યાન પિયત દિવેલા (જી.સી.એચ.-૭) ઉગાડતા ખેડૂતોને દિવેલાનું વધુ ઉત્પાદન અને આર્થિક વળતર મેળવવા તેમજ પાણીની બચત માટે લેસર લેવલરનો ઉપયોગ કરી ૦.૪૫ ટકા સમાંતર ઢાળ આપી દિવેલાનો પાક લેવા ભલામણ કરવામાં આવે છે.

(Action: I/c Prof. and Head, Dept. of Agril. Engg., NMCA, Navsari)

12.5.3.4

Development and evaluation of low cost of solar still

A low cost roof top cement brick type solar still covered with 4mm thick toughened glass developed by NAU is recommended to get 2 l/m² - day distilled water for Dediapada area.

નવસારી કૃષિ યુનિવર્સિટી દ્વારા વિકસાવવામાં આવેલ સિમેન્ટ- ઈટ બાંધકામ અને ઝ એમ. એમ. ટફન કાચ કવર પ્રકારના ઓછી કિંમતના સોલર સ્ટીલ ૨ લી/ મી^૨ પ્રતિ દિવસ શુદ્ધ પાણી (દેડીયાપાડા ક્ષેત્ર માટે) મેળવવા ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે.

(Action: Dean, CAET, Dediapada)

12.5.3.5

Development of technology for dehydration of onions rings for adoption at commercial scale

The house deferred the recommendation with following suggestions;

- Data without pre treatment are to be given
- Industry norms should be followed in process methodology be given
- Microbial analysis be included
- Usage of silica gel to be reviewed

(Action: Assoc. Pro. & Head, Dept. PHT, ACHF, Navsari)

12.5.3.6

Development of technology for dehydration of okra slices for adoption at commercial scale

The house deferred the recommendation with following suggestions;

- Data without pre treatment are to be given
- Industry norms should be followed in process methodology be given
- Microbial analysis be included
- Usage of silica gel to be reviewed

(Action: Assoc. Pro. & Head, Dept. PHT, ACHF, Navsari)

12.5.3.7

Development of technology for dehydration of cauliflower for adoption at commercial scale

The house deferred the recommendation with following suggestions;

- Data without pre treatment are to be given
- Industry norms should be followed in process methodology be given
- Microbial analysis be included
- Usage of silica gel to be reviewed

(Action: Assoc. Pro. & Head, Dept. PHT, ACHF, Navsari)

12.5.3.8

Standardization of Method for Preparing of Candy from Bitter Gourd

The house deferred the recommendation due to following reason:

Practical utility of the product is not meeting the desired objectives (product found very bitter in spite of adding sugar)

(Action: Assoc. Pro. & Head, Dept. PHT, ACHF, Navsari)

12.5.3.9

Effect of different types of processing on the nutritional quality of green gram, french bean and chick pea

House deferred the recommendation

B. SCIENTIFIC COMMUNITY

NAVSARI AGRICULTURAL UNIVERSITY

12.5.3.1

Study relating to “Formulating long-term mechanization strategy for Dediapada taluka”

The mechanization tool level (MTL), which indicates percentage of mechanization used for particular farming operation in Dediapada taluka was found to be tillage 40%, sowing 11%, transplanting 0%, interculture 18%, spraying 35%, weeding 22%, harvesting 14% and threshing 33%. Therefore design, development and popularization of small hand tools and implements suitable for sowing, transplanting and harvesting operations need to be done on priority basis in order to enhance mechanization index in selected operations and also to increase the income of farmers of Dediapada taluka.

(Action: Dean, CAET, Dediapada)

NEW TECHNICAL PROGRAMMES

NAVSARI AGRICULTURAL UNIVERSITY

Experiment No.	Experiment Title	Suggestions	Action
12.5.3.1	Standardization of technology for preparation of Tomato (<i>Solanum lycopersicum</i> L.) Powder for home scale adoption	<p>Approved with following suggestions</p> <p>Recast the title as “Development of technology for ready to use freeze dried tomato (<i>Solanum lycopersicum</i> L.) slice” with the objectives;</p> <ol style="list-style-type: none"> 1.To standardize process parameters for freeze dried tomato slice. 2. To evaluate the quality characteristics of freeze dried tomato slice during storage. 3.To evaluate rehydration characteristics of freeze dried tomato slices <p>And treatment as</p>	Center of Excellence of PHT, Navsari

		<p>Factor1: Slice thickness</p> <p>1. 5 mm</p> <p>2. 10 mm</p> <p>3. 15 mm</p> <p>Factor 2: Blanching at 80°C for 2min</p> <p>2. Without hot water</p> <p>Factor 3: Freezing to -30°C with three rates (6h, 8h, 12 h)</p> <p>Factor4: Vacuum freeze drying stage I: 35°C Stage II: 50 °C</p>	
12.5.3.2	Technology for utilization of Orange Peel and Seed	Approved with following suggestions Characterization of processing waste Standardize drying Essential oil from seed, peel	Center of Excellence of PHT, Navsari
12.5.3.3	Evaluation of Land Leveling and Sowing Methods on Yield and Water use efficiency of Sorghum (Sorghum bicolor L.) Crop in Vertisol of South Gujarat	Approved with following suggestions Replace first treatment with ridge and furrow system. Furrow irrigation system is to be designed Modify the title as Influence of land configuration on productivity of sorghum	Dept. of Agril. Engg., NMCA, Navsari
12.5.3.4	Effect of different colour shade nets on biomass and quality of leafy vegetables (Fenugreek, coriander and garlic)	Approved	Research Scientist, Soil and Water Management Research Unit, N.A.U., Navsari
12.5.3.5	Modification of NAU designed hold – on type power operated Paddy thresher	Approved with suggestion to work out the economics	Research Scientist, Soil and Water Management

			Research Unit, N.A.U., Navsari
12.5.3.6	Evaluation of irrigation scheduling in rice crop by using field water tube (alternative wetting and drying method)	Approved with following suggestions Modify objectives as suggested To simulate soil moisture in root zone To work out the economics of paddy production	Research Scientist, Soil and Water Management Research Unit, N.A.U., Navsari
12.5.3.7	Performance evaluation of Scheffler Solar Concentrating Cooker for direct and indirect community cooking application	Not approved	Action: Dean, CAET, Dediapada
12.5.3.8	Design, development and performance evaluation of mixed mode cabinet solar dryer	Approved	Dean, CAET, Dediapada
12.5.3.9	Trends of Rainfall and temperature variation in Narmada District of Gujarat	Approved with suggestions Data independence / correlation needs to be established before using MK test. Probability distribution selected need to be tested using Anderson-Darling test. The evaporation probability analysis to be carried out.	Dean, CAET, Dediapada

		ER procedure to be highlighted	
		Irrigation requirements to be estimated with local Kc correction procedures.	
12.5.3.10	Development of studies of Sapota (Chikoo) Powder based value added product (pasta) using semolina (Suji) and maida	Approved Change it to control instead of "0" in treatment Remove two different in statistical design	Dean, CAET, Dediapada
12.5.3.11	comparative Studies on the different drying methods on ber (<i>Ziziphus mauritiana</i>)	Approved Change in treatment instead of 40 ⁰ c take 70 ⁰ c	Dean, CAET, Dediapada
12.5.3.12	Effect of laser levelling on water use efficiency and growth of gram crop	Approved Design border irrigation Compare the slope with recommended areas Plot leveling index Vs yield	Dean, CAET, Dediapada
12.5.3.13	Design and development of raised bed former-cum-seeder for clay loam soil condition for Narmada	Approved	Dean, CAET, Dediapada
12.5.3.14	Design and development of suitable furrow opener for heavy clay soil condition for South Gujarat	Approved Modify objectives as suggested	Dean, CAET, Dediapada
12.5.3.15	A Study on technical feasibility and development of online Financial Approval system for NAU	Approved	Department of Information & Communication Technology, AABMI, Navsari

12.5.3.16	Development program for online tour approval for NAU	Approved Modify 1 st objective as suggested To evaluate technical feasibility of online software as per statue 121	Dept. of ICT, AABMI, NAU, Navsari
12.5.3.17	Developing mobile App for the APMC operations.	Approved modify as suggested Modify 1 st objective as suggested To study the APMC Management operations and Farmers requirement. Modify 3 rd objective as suggested To develop the Mobile App for the APMC operation Drop 2 nd objective	Dept. of ICT, AABMI, NAU, Navsari
12.5.3.18	Developing web portal for the farmers of South Gujarat Region	Approved with modified 1 st objective To study the requirement of web portal to disseminate the agricultural Information to South Gujarat farmers	Dept. of ICT, AABMI, NAU, Navsari
12.5.3.19	Standardization of technology for preparation of Aloe vera based vermicelli	Approved Also presented in Horticulture sub committee	I/c, CE on PHT, Navsari
12.5.3.20	Standardization of technology for minimal processing of fresh cut cauliflower (<i>Brassica oleracea</i> var. botrytis L.).	Approved	I/c, CE on PHT, Navsari

12.5.3.21	Standardization of technology for minimal processing of fresh cut potatoes (<i>Solanum tuberosum</i> L.).	Approved	I/c, CE on PHT, Navsari
12.5.3.22	Standardization of technology for preparation of candy from ripe papaya (<i>Carica papaya</i> L.) fruits.	Approved	I/c, CE on PHT, Navsari
12.5.3.23	Development of technology for preservation of tender coconut water	Not Approved	I/c, CE on PHT, Navsari
12.5.3.24	Development of technology for health based digestive tablets from noni pomace powder.	Approved with change of title "Development of technology for value added tablets from noni pomace powder".	I/c, CE on PHT, Navsari
12.5.3.25	Characterization of the Sapota seed oil for extraction and value addition	Not Approved	I/c, CE on PHT, Navsari
12.5.3.26	Home scale ripening of Banana Cv. Grand Naine	Approved	I/c, CE on PHT, Navsari
12.5.3.27	Effect of pre-cooling on quality and shelf-life of Banana Cv. Grand Naine	Not Approved as the technology has already been developed by AAU & recommended by Combined Joint Agresco	I/c, CE on PHT, Navsari

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

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