ACHIVEMENTS

Department of Agronomy
N. M. College of Agriculture
Navsari Agricultural University, Navsari (Gujarat)

A. Awards won by faculties (2016-17 to 2020-21)

SN	Award	Name of organization	Awardees	Year
1.	Best Oral Presentation award	National Conference on Advances in Global Research in Agriculture and Technology, Agra (U. P.)	Dr. N. N. Gudhade	2017
2.	Outstanding Faculty Award	Venus International Foundation, Chennai,	Dr. N. N. Gudhade	2018
3.	Best oral paper presentation	International Conference on Food and Agriculture, Dhanbad, Jharkhand,	Dr. L. K. Arvadia	2018
4.	Appreciation Certificate	XXI Biennial National Symposium, Udaipur (Rajasthan)	Dr. N. N. Gudhade	2018
5.	Best photograph award in 4R nutrient stewardship	International Plant Nutrition Institute, Georgia, USA	Dr. N. N. Gudhade	2019
6.	Young Achiever Award	Society for the Advancement of Human and Nature, Y. S. Parmar University of Horticulture and Forestry, Solan, (H. P.)	Dr. N. N. Gudhade	2019
7.	Sadvichar Parivar Award	The Gujarat Association for Agricultural Sciences, Ahmedabad	Dr. V. P. Usadadiya and Dr. P. B. Patel	2019
8.	Second Best Oral Presentation Award	National Seminar on Biochemical and Molecular Biology for Nutritional Security and Food Safety, NAU, Navsari	Dr. N. N. Gudhade	2019
9.	Third Best Oral Presentation Award	International Conference on Engineering Biotic Interactions in the Light of Social Applicability,	Dr. N. N. Gudhade	2020
10.	Best centre of AICRP on IFS under On-Station	ICAR-IIFSR, Modipuram, Meerut	Arvadiya L. K., Gudadhe N. N. and Thanki J. D.	2020
11.	Best Agronomist Award	Agricultural Technology Development society, Ghaziabad	Dr. N. M. Thesiya	2021

B. Post graduate/Ph.D. thesis

Sr. No.	Period	No. of P.G. students awarded degree		
		M.Sc.(Agri.)	Ph.D.	Total
1.	1970 to 1975	11	0	11
2.	1976 to 1980	10	0	10
3.	1981 to 1985	17	3	20
4.	1986 to 1990	44	3	47
5.	1991 to 1995	26	15	41
6.	1996 to 2000	18	10	28
7.	2001 to 2005	27	4	31
8.	2006 to 2010	44	10	54
9.	2011-2015	55	14	69
10.	2016-2021	129	26	155
	TOTAL	386	86	469

C. Research recommendations (2016-17 to 2020-21)

Year		Recommendations
2016-17	1	Rice based cropping sequence: The farmers of South Gujarat heavy rainfall zone (AES-III) are recommended to fertilize *kharif* rice with 100-30-00 kg NPK/ha + 10 t FYM and 20-40-00 kg NPK/ha to succeeding *rabi* green gram for getting higher system profitability of rice-green gram cropping sequence.
	2	Lucerne (seed):The farmers of South Gujarat Heavy Rainfall Zone (AES-III) growing lucerne for seed purpose are recommended to take three cuts at 60,100 and 130 days after sowing and leave the crop for seed production and fertilize the crop with basal application of 30 kg nitrogen along with 50 kg P_2O_5 and 50 kg K_2O per hectare for getting higher yield and net return.
	3	Rice based cropping sequence: The farmers of South Gujarat Heavy Rainfall Zone (AES-III) are recommended to integrate 100% RDF (100-30-00 NPK kg/ha) as 50% RDF from inorganic fertilizers and 50% N from FYM (10 t/ha) or Green manure in rice and apply 100% RDF (120-60-00 NPK kg/ha) in wheat under rice-wheat crop sequence for securing similar paddy equivalent yield and maintain soil fertility status. Combined use of 75% RDF from inorganic fertilizers and 25% N from FYM (5 t/ha) or Green manure in rice saves 25% RDF in succeeding wheat.
	4	Rice based cropping sequence: The farmers of South Gujarat Heavy Rainfall Zone (AES-III) are recommended to adopt rice-sorghum-greengram crop sequence without mulch/residue incorporation with 25% higher dose of respective crop RDF under conventional tillage for securing higher paddy equivalent yield and net return.
	5	Rice based cropping sequence: The farmers of South Gujarat Heavy Rainfall Zone (AES-III) interested to grow organically rice-summer groundnut cropping sequence are recommended to apply recommended dose of fertilizer on N equivalent basis to both

		the crops in equal proportion from FYM, vermicompost and castor cake, *i.e.*, FYM 6 t + vermicompost 4 t + castor cake 700 kg/ha in rice and FYM 1.5 t + vermicompost 1 t + castor cake 170 kg/ha in summer groundnut for getting similar paddy equivalent yield, higher net profit and improving organic carbon content of soil under organic nutrient management system.
2017-18	1	Rice: The farmers of South Gujarat heavy rainfall zone are advised to fertilize the rice with 100 kg N/ha along with 30 kg P_2O_5/ha + 5 t biocompost as per the leaf colour chart panel number four (2/5 N basal + other two doses through leaf colour chart) for getting higher yield and net return.
	2	Rice: The farmers of South Gujarat heavy rainfall zone growing *kharif* transplanted paddy are advised to adopt practice of preceeding green manuring with *dhaincha* (fertilized 20:40:00 kg NPK/ha) and apply 75% of RDF (75:22.5:00 kg NPK /ha) for succeeding paddy crop for getting higher yield and net return which can save 25% of fertilizer.
	3	Sugarcane: The sugarcane growers of South Gujarat heavy rainfall zone are advised to manage the weeds by hand weeding at 30, 60 and 90 days after planting and interculturing at 45 and 90 DAP for securing higher yield and net return.
	4	Sorghum:The farmers of South Gujarat heavy rainfall zone growing *rabi* sorghum are advised to adopt two interculturing and hand weeding at 20 and 40 DAS for effective weed management, realizing higher grain and net return.
	5	Rice: The farmers of South Gujarat heavy rainfall zone are advised to apply 120 kg N/ha in three splits (40% N as basal, 40% at tillering and 20% at panicle initiation) and 30 kg P_2O_5/ha as basal along with two hand weeding at 20 and 40 DAS for getting higher yield and net return with efficient weed management in aerobic rice. Under crisis of labour and adverse condition due to continuous rainfall, farmers are advised to control weed by spraying of pretilachlor @ 0.75 kg/ha as pre-emergence and bispyribac sodium salt @ 0.050 kg/ha as post emergence after 20 DAS along with 120 kg N/ha in three splits (40% N as basal, 40% at tillering and 20% at panicle initiation).
	6	Weed management: Apply either metribuzin 1 kg/ha or atrazine 2 kg/ha as pre-emergencefollowed by one hand weeding and one interculturing at 60 DAP for effective management of weed in sugarcane.
	7	Weed management: Application of atrazine @ 0.5 kg/ha as pre-emergence and one interculturing and one hand weeding at 20 DAS was found effective for weed management in *rabi* sorghum.
	8	Long term experiment: Rice-wheat-green gram cropping sequence was found sustainable even after 28 crop cycles without addition of potassium in soil, but there was depletion of about 39 % and 36% of source-K (HNO3 soluble K) in surface soil (0.0-22.5 cm) and sub-surface (22.5-45.0 cm) layer, respectively at the end of 28 crop cycles.

	3	Sugarcane growers of South Gujarat Heavy Rainfall Agro-climatic Zone are advised to staple trichocard stripes on lower surface of the sugarcane leaves @ 12/ha (Aprrox. 4000 parasitized eggs/stripe) keeping distance of 30 m between two stripes for effective biological control of sugarcane borers.
2018-19	1	Sunnhemp:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing sunnhemp seed crop under conserved moisture in *K*yari land after *kharif* rice are recommended to sow the crop at 45 to 60 cm row spacing using 30 kg/ha seed rate.
	2	Lucerne:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing lucerne are recommended to apply FYM 10 t/ha or biocompost 7 t/ha and fertilized the crop with 20:50:50 kg NPK/ha as basal and seed treatment of biofertilizers (*Rhizobium* + PSB each @ 10 ml/kg seed) for getting higher yield and net return.
	3	Guinea grass: The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing guinea grass are recommended to apply 10 t/ha FYM and fertilized the crop with 62.5-37.5-37.5 kg NPK/ha as basal as well as 37.5 kg N/ha after each cut and 50 kg P2O5/ha each year for getting higher yield and net return.
	4	Cropping system:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone are recommended to adopt the rice-cabbage-greengram crop sequence for securing higher production, net profit and improving soil fertility.
2019-20	1	Maize: The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone are recommended to keep the *rabi* maize field weed free from 20 to 50 days after sowing for getting higher yield and net return.
	2	Fodder sorghum:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing fodder sorghum (GFS 5) are recommended to treat the seed with *Azospirillum*+ PSB (each 10 ml/kg seed) and apply 80 kg N/ha(40 kg/ha as basal and 40 kg/ha at 30 DAS) in addition to basal application of recommended dose of phosphorus (40 kg P2O5/ha) and FYM (5 t/ha) for getting higher yield and net return.
	2	Scientific Information: Phylloplane microflora associated with diseased leaves of tomato and banana are more in number compared to healthy leaves andare a natural source of eco-friendly bioagents which may control plant pathogens. This investigation confirms that leaf surface mycobiotasuch as *Trichoderma* species found to be effective antagonists against *Alternaria solani* and *Fusarium*sp. of tomato and *Colletotrichum* sp. of banana as it is having mycoparasitic ability.
	3	Farmers Recommendation : Sugarcane growers of South Gujarat heavy rainfall zone AES-III are recommended to treat the setts of sugarcane before planting with the liquid Acetobacter, PSB and KMB (Minimum Cfu 1×10^8) for sett treatment 300 ml/ha, by mixing together for minimum 30 minutes before sowing, soil applications of each 2000 ml/ha two times; 125:62.5:62.5 NPK to realize higher cane yield and save 50 per cent chemical nitrogen, phosphorus and potash fertilizers and simultaneously saving 50 per cent. (ICBR 1:1.22).

	4	Scientific Information:Five times higher concentrations (200ml prepared from 1000ml normal biofertilizers) of phosphate solubilizing bacteria (*Bacillus megatarium*) and lyophilized Phosphate solubilizing bacteria (5gm prepared from 1000ml of biofertilizer) can be used as a new formulation of biofertilizer.
	5	Scientific Information *:Conninghemella* sp. NAUB-5 fungal isolate can be used for the preparation of biofertilizers to convert unavailable and fixed phosphorus into available for the plant in the soil for the crop growth.
2020-21	1	Linseed:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing linseed are recommended to apply 75 kg N/ha, 50 kg P_2O_5/ha as DAP and 20 kg S/ha as elemental sulphur (full dose of sulphur one week before sowing, half dose of N and full dose of P_2O_5 at sowing and remaining half dose of N at 30 DAS) for getting higher yield and net return.
	2	Maize:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing *rabi* maize are recommended to apply atrazine 1.0 kg/ha as pre-emergence *fb* one interculturing at 40 DAS or carry out two interculturing along with hand weeding at 20 and 40 DAS for effective weed control and to obtain higher yield and net income.
	3	Fodder oat:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing fodder oat are recommended to adopt cross sowing method at 30 cm x 30 cm spacing (using 1.5 times seed rate) for getting higher yield and net return.
	4	Fodder maize intercropping:The farmers of South Gujarat Heavy Rainfall Agro-climatic Zone growing summer fodder maize are recommended to adopt fodder maize + fodder cowpea intercropping in 1:1 (maize spacing 30 cm) or 2:2 ratio (maize spacing paired row 15-45-15 cm) for getting higher yield and net return.
	5	Weed management: Application of either pendimethalin @ 1 kg/ha as PE or 2,4-D amine salt 0.5 kg/ha or metsulfuron methyl 4 g/ha as PoE at 30 DAS gave effective weed control with higher yield and net return in fodder oat. Residue analysis of these herbicides was carried out and found below detectable level.

D. Publications (2016-17 to 2020-21)

Sr. No.	Publications	Total
1	Practical manuals	7
2	Research papers	104
3	Books/booklets	2
4	Folders	2