## **CONTENT**

Theme-A: Technology outreach and agri-trade for convergence of farm with institute, industries and policy makers

Sl No.	Title	Author	Abstract No.	MOP
1.	Understanding farmers' perception about Covid-19 pandemic in relation to social and livelihood perspective: A study in Jhargram district of West Bengal	<b>Soma Biswas</b> and S. Chatterjee	1	Poster
2.	Increase in farmers' income through FPO- led marketing of maize in Davanagere district of Karnataka	Likhitha S, <b>Anbukkani Perumal</b> , Nithyashree M. L., P. Kumar and G. K. Jha	2	Oral 1
3.	Determinants of agricultural credit access by kharif rice growers in Dakshin Dinajpur district, West Bengal- An empirical analysis	N. Chinglen Meitei and Jayanta Dutta	3	Poster
4.	Income of agricultural households in Coochbehar district of West Bengal in India	<b>Debraj Saha</b> , S. Bachaspati, M. A. Kumar and G. Dey	7	Poster
5.	A study on the behaviour of prices and market arrivals of onion in West Bengal	Sourakanti Sarkar, Gowthaman T. and B. Bera	45	Poster
6.	Role of tribal sub plan (TSP) for improvement of livelihood of tribal people	<b>Shilpa Sau</b> , S. S. Dana, M. Ray Sarkar and A. H. Mondal	80	Poster
7.	Reform in agri-market in the context of apmc, national agriculture market (e-NAM) and MSP in India: A general perspective	Banani Das	112	Oral 2
8.	Medicinal plants in India: Scope and importance	<b>Dawjam Bhutia</b> , G. Mula and A. Giri	138	Poster
9.	Understanding consumer preference for fresh potatoes by analysing different levels of attributes	Saptaparna Karmakar and D. Basu	145	Poster
10.	Socio-economic impact of Covid-19 on total calorie intake in Kalimpong district of West Bengal, India	Auindrila Biswas, S. Chatterjee and H. Ali	162	Poster
11.	Consumers' preferences towards buying fresh vegetables in different seasons in selected areas of West Bengal	<b>Madhurima Maiti</b> and D. Basu	169	Poster
12.	A review on Homa farming: A vedic influence on contemporary agriculture	Shubhadeep Mondal, R. Mallick, R. Ghosh, A. Mahanty, K.Sardar, A. Patra, S. Kar and S. Chakraborty	188	Poster
13.	Sustainable empowerment of rural women through capacity building in post-harvest management: A case study from West Bengal	<b>Biswajit Karmakar</b> , B. Sarkar and M. Haque	212	Poster
14.	Vertical price transmission and volatility of tea market in India	Soumik Dey, K. Sinha, P.Pandit, S. H. Singh and P. K. Sahu	221	Poster
15.	Impact assessment through climate resilience site-specific technological interventions on yield and economics of finger millet in Bargarh district: moving towards nutri-cereals	<b>Begum Rukeiya</b> , T. C. Panda and K. Mishra	227	Poster

16.	Tobacco marketing: swot analysis in Etah	V. Gupta, Supriya, Y. S.	236	Poster
	district of western Uttar Pradesh	Raghav, Aditya Bhooshan		
		Srivastava and S. Gautam		
17.	Determinants of adoption behaviour of	Amrita Kumar Sarkar and	244	Poster
	improved jute production practices in	S. P. Lal		
	Murshidabad district of West Bengal			
18.	Effectiveness of cash transfers in	Bhaskar Ghosh, R. Roy	252	Oral 3
	benefitting the small and marginal farmers	Burman, R. Padaria, G.		
	by providing income support: A special	Singh Mahra, P. Kumar and		
	reference to PM-KISAN Scheme	A. Bhowmik		
19.	Growth and instability analysis of major	A. Roy, S. Sarkar, M. M. H.	287	Poster
	crops in West Bengal region of India	Middya and B. Bera		
20.	Increasing livelihood status of small	Soumik Pal	289	Poster
	farmers in West Bengal			
21.	Regenerating ideas towards attaining	Suman Saha, K. Pradhan	290	Poster
	ecological resilience at farmers' field: A	and S. K. Acharya		
	journey through undulations			
22.	To ascertain the farmers and traders	Sandeep Gautam, Supriya,	291	Poster
	willingness to participate in e-NAM:	H. Mishra, P. Kumar, V.		
	Binary logistic regression analysis	Gupta and A. K. Shakya		
23.	A discussion on the present status of	Anmol Giri, Satyendra	343	Poster
	krishak bazaars in Cooch Behar district of	Chandra Sarker and		
	West Bengal, India	Ashutosh Sarkar		
24.	Extension approach for revival of	Sujit Sarkar, N. Gurung, D.	344	Oral 4
	Darjeeling mandarin cultivation	Barman and R. N. Padaria		
25.	Factors influencing future training needs	Deepa Roy, A. K.	504	Poster
	of the pineapple growers in Darjeeling	Bandyopadhyay and P. K.		
	district of West Bengal, India	Pal		
26	Homostics Costs in skillten Form syrains	C	505	015
26.	Harvesting Sustainability: Empowering	Sourav Pore	505	Oral 5
	small farmers through pond-based			
27	integrated farming system	Annah Dananiaa and C. V.	<b>50</b> 6	D4
27.	Decision ecology in agricultural	Arnab Banerjee and S. K.	506	Poster
	technology transfer: The case of system of rice intensification (SRI) at Bankura,	Acharya		
28.	West Bengal An Interpretation on Technology	Swagata Patra, A. K. Sarkar	507	Poster
40.	Uncertainty in Agriculture of West	and S. K. Acharya	307	roster
	Bengal	and S. K. Actial ya		
29.	Drudgery reduction of farm women	Barsha Sarkar and D. Basu	508	Poster
47.	through gender-sensitive farm	Daisha Saikai anu D. Dasu	300	i oster
	mechanization			
30.	Estimation of socio-ecological	Debashis Mazumder, S. K.	509	Poster
30.	compliances and conflicts: yield, income	Acharya, M, Haque and A.	307	1 OSTEI
	and livelihood in selected farm enterprises	Banerjee		
	with reference to West Bengal	Daneijee		
31.	Economic importance of agro-tourism for	Deparna Pradhan, T. N.	510	Poster
31.	sustainable livelihood and tourism	Roy and K. K. Das	310	1 OSTEI
	development in hilly areas of West	Roy and K. K. Das		
	Bengal			
				1
32		Sudinta Paul G Kumar and	511	Oral 6
32.	Diffusion of NRRI varieties in eastern and	Sudipta Paul, G. Kumar and B. Mondal	511	Oral 6
32.	Diffusion of NRRI varieties in eastern and north-eastern parts of India: A micro-level	Sudipta Paul, G. Kumar and B. Mondal	511	Oral 6
32.	Diffusion of NRRI varieties in eastern and		511	Oral 6 Poster

Theme-B: Frontier areas in crop production and natural resource management with special reference to Natural Farming

Sl No.	Title	Author	Abstract No.	MOP
1.	Sustainable rice production for improving food and nutrition security, environmental sustainability, and smallholders' income	Virender Kumar	503	PL
2.	Evaluation of non-chemical approaches of weed management in brinjal ( <i>Solanum melongena</i> ) under organic farming	S. Radhamani, C. Bharathi, P. Balasubramanian and P. Parasuraman	491	LL
3.	Tapping the potentials of weed-competitive rice cultivars under direct-seeded conditions	Malay K. Bhowmick, S. Debnath, K. Banerjee, I. Dana, P. Peramaiyan, V. Kumar and S. Singh	516	LL
4.	A land use system for natural resource management in Nagaland through traditional knowledge	D. Nongmaithem	541	LL
5.	Bringing seed inoculations to smallholder farms for improved crop performance, nutritional security, and agricultural sustainability	Amitava Rakshit	545	LL
6.	Significance of living mulch for sustainable crop production- a review	R. R. Upasani and S. Barla	515	IO
7.	Conservation agriculture for bringing sustainability in intensive agricultural systems	Biplab Mitra, P. M. Bhattacharya, A. K. Sinha, A. Ghosh, K. K. Das, T. Dhar and A. K. Chowdhury	549	Ю
8.	Effect of seaweed extract based growth promoter on crop productivity and soil health	M. C. Meena, <b>Abir Dey</b> , A. Kamathker, Arvindh K and B. Mondal	4	Oral 1
9.	Comparative on farm study of weed flora variation and yield of potato crop at Hooghly and Bankura district of West Bengal	<b>Debjani Dutta</b> and Subham Mahanty	5	Poster
10.	Augmenting effect of biofertilizer on French bean ( <i>Phaseolus vulgaris</i> L.) production under different nutrient regime	A. Rahim, P. Choudhuri and R. Banerjee	6	Poster
11.	Novel synthesis of ZnO and TiO2 nanoparticles using <i>Ipomoea carnea</i> leaf extract and its effect on black carrot ( <i>Daucus</i> carota L.) production	Ankit Kumar Goya1, Sutanu Maji, Gajanan Pandey and Deen Dayal Upadhyay	8	Poster
12.	Variation in rice yield due to application of FYM in different blocks of district Bankura	Subham Mahanty and Debjani Dutta	19	Poster
13.	Assessing the impact of integrated nutrient management practices on growth and yield performance of direct seeded rice in dystrudepts of Nagaland	Avini-e Nakhro	22	Poster
14.	Evaluating the effect of nano-urea and herbicide mixtures on weeds along with growth and yield of wheat	Ayan Sarkar, T. Singh, T. K. Das, A. Mandal, R. Raj, P. K. Upadhyay, S. K. Sarkar and S. Kumar	23	Oral 2
15.	Response of groundnut varieties to phosphorus management and its residual	Golam Moinuddin, B. K. Saren, R. Kundu and A.	26	Poster

	effect on succeeding baby corn	Sarkar		
16.	The effect of stubble burning and residue management practices on soil properties under the rice-wheat cropping system	Pratistha Pradhan, T. K. Pandit and A. K. Sinha	31	Poster
17.	Effect of nano nitrogen in conjunction with urea on yield attributes and yield of rice	Pushpendu Sarder, S. Biswas, S. Dey, A. Mohammad and S. Debnath	33	Poster
18.	Effect of minimum tillage on growth and productivity of potato ( <i>Solanum tuberosum</i> L.) in rice-potato production system	Sanjib Kumar Das and A. Chakraborty	39	Poster
19.	Weed management with new generation herbicides in <i>rabi</i> maize	Sonali Biswas, S. K. Samsunddin, S. Dey, S. Debnath, A. Saha and S. Sahani	43	Poster
20.	Impacts of inorganic fertilizer, organic manure, and biofertilizer application on soil aggregate stability and aggregate-associated organic carbon under rice-mustard-sesame cropping system in Inceptisols, Gayeshpur, West Bengal	Subrata Roy, A. Dey and R. Padbhushan	54	Poster
21.	Growth and yield of hybrid mustard ( <i>Brassica juncea</i> ) as influenced by foliar nutrition in Gangetic plains of West Bengal	Arup Sarkar, K. Jana and K. Murmu	71	Poster
22.	Effect of post-emergence chemical weed control measure in direct seeded rice ( <i>Oryza sativa</i> L.) in New Alluvial Zone of West Bengal	Saptashree Das and Manabendra Ray	72	Poster
23.	Fish cum sericulture: A system for approaching towards natural farming	Pujadebi Bera, T. K. Ghosh, S. K. Sau, S. Barman and H. Dhara	78	Poster
24.	Growth, yield and quality of medicinal plant chia ( <i>Salvia hispanica</i> ) as influenced by planting method and density	C. K. Kundu, N. R. Anand, N. M. Devi, H. Banerjee, S. K. Gunri, L. Nayak, G. Mondal and S. K. De	85	Poster
25.	Conservation agriculture and biofertilizer application impact soil microbial diversity and enzyme activities under <i>Terai</i> agroecological zone of West Bengal	Rajeev Padbhushan, A. K. Sinha, P. M. Bhattacharya and U. Kumar	91	Poster
26.	Response of hybrid mustard to different row spacing and fertilizer levels in new alluvial zone of West Bengal	Anupriti Mala and Prabhat Kumar	94	Poster
27.	Biofertilizers as a sustainable tool for improving soil fertility	Karthika Vishnu Priya Kathula, Abha Manohar K. and L. Sagar	95	Poster
28.	Studies on productivity, nutrient uptake and economics of rabi transplanted paddy as influenced by Fytovita (bio-stimulants)	Soumen Bera, D. Kalindi, S. Saha, S. Das and S. Hensh	102	Poster
29.	Fertilizer prescription equation based on IPNS-target yield model for garden pea (Pisum sativum)	Nafisa and H. Saha	103	Poster
30.	Studies on carrier and liquid based bio- fertilizer on performance of lentil ( <i>Lens</i> <i>esculenta</i> ) in alluvial soil of West Bengal	Ankush Sarkar, M. Banerjee and G. C. Malik	108	Poster

31.	Effect of residue management on yield, yield attributes, soil environment and weed flora	<b>Dharmadas Kalindi</b> and S. Bera	109	Poster
	in rice-mustard cropping system in Lower Gangetic Plain of West Bengal			
32.	Isolation and characterisation of plant growth promoting bacteria from <i>Vigna radiata</i> rhizosphere and geyser soil for studying their effect on overall growth of rice plants	<b>Sai Kumar</b> and Joydeep Banerjee	110	Poster
33.	Studies of foliar nutrients on yield attributes and yield of boro rice (Oryza sativa)	Shubhadip Kar, P. Ghosh and R. Mallick	111	Poster
34.	Growth, yield and water use efficiency of grass pea ( <i>Lathyrus sativus</i> L.) as influenced by phosphorus, micronutrients and organics in New Alluvial Zone of West Bengal	Subhajit Barat, S. B. Goswami and B. K. Saren	113	Poster
35.	Effect of different planting geometry for crop-weed interventions in chickpea under New Alluvial zone of West Bengal	Gagan Mudi, A. Hansda, M. Hedayatullah and P. Rai	116	Poster
36.	Impact of late sowing on nodulation, crop growth rate and seed yield of lentil	Anurag Bera and R. Nath	118	Poster
37.	Performance of ricebean [Vigna umbellata (Thunb) Ohwi and Ohashi] as influenced by biochar and pig manure amendments under fine typic Kanhapludalf soil	Yabi Gadi and Y. K. Sharma	119	Poster
38.	Response of soybean varieties to integrated nutrient management in Lower <i>Gangetic</i> Plains of West Bengal	Anusree Paul, L. L. Nwe and D. Dutta	128	Poster
39.	Effect of different methods of crop establishment and nutrient management practices of Indian mustard cv. Kesari Gold in lateritic soil of West Bengal	Chandana Biswas, K. Pramanik, D. Seal and P. Bandhopadhyay	131	Poster
40.	Effect of different organic sources of nitrogen on dual purpose ricebean ( <i>Vigna umbellata</i> (Thunb.) Ohwi and Ohashi)	Gedela Bhagyasri , C. K. Kundu and K. Jana	133	Poster
41.	Long term conservation agricultural practices on aggregate stability and AM fungi dominance in an <i>inceptisol</i>	<b>Bikramjit Mandal</b> and S. Biswas	136	Poster
42.	Effect of sowing time, tillage and variety management on growth, yield parameters, nitrogen uptake and economics of lentil after <i>kharif</i> rice in New Alluvial Zone of West Bengal	Bishal Mukherjee, M. K. Naskar, R. Nath, M. Ghosh and P. Paul	137	Oral 3
43.	Growth, yield and uptake of heavy metals in <i>kharif</i> rice under integrated use of municipal solid bio-waste compost and chemical fertilizer in New Alluvial Zone of West Bengal		140	Poster
44.	Assessment of heavy metal contamination in leafy vegetables grown on sewage irrigated soils in Kolkata	Enamul Pailan and S. Saha	152	Poster
45.	Study on evaluation of various principles of drip irrigation for banana cultivation in new alluvial zone of West Bengal	Nabanita Sarkar, A. Chowdhury and R. K. Biswas	155	Poster

46.	Effect of precision nutrient management on growth and yield of hybrid maize	Shubhamay Dey and S. Biswas	158	Poster
47.	Effect of NPK fertilizers and foliar spray of zinc sulphate and borax on growth, productivity and economics of fodder oats in red and lateritic soil of West Bengal	<b>Divya Jaiswal</b> , S. Mishra, K. N. Yadav, A.K.Barik and D. K. Jaiswal	163	Poster
48.	Response of mustard ( <i>Brassica juncea</i> L.) Cultivars to date of transplanting in lateritic soil of West Bengal	Sandip Kumar De and K. Pramanik	164	Poster
49.	Assessment of resistance and resilience of β-glucosidase activity under conservation agriculture based rice-wheat cropping system in <i>Indo-Gangetic</i> plain	Biswas, T. J. Purakayastha, N.	170	Poster
50.	Performance of sesamum (Sesamum indicum L.) grown with production components constraints in New Alluvial Zone of West Bengal	Koushik Mondal, S. K. Gunri, S. Goswami, S. Das, S. Banerjee and K. Jana	174	Poster
51.	A review on zero budget natural farming: a path towards sustainable agriculture	S. Karak and U. Thapa	178	Poster
52.	System of mustard intensification – A review paper on a revolutionary way to boost the production of mustard in India	Souvan Kumar Patra, A. Mahanty, S. Kar and S. Chakraborty	180	Poster
53.	A review on carbon sequestration: a long- term approach to pollution reduction, improved air quality and decreased health hazards	Rakesh Ghosh, R. Mallick, A. Patra, K. Sardar, S. Mondal, A. Mahanty, S. Kar and S. Chakraborty	187	Poster
54.	An assessment on potassium pool by quantity- intensity parameters of some rice growing soils of India	Sanjib Kar	190	Poster
55.	Studying the radiation interception pattern of green gram of Lower Gangetic Plains of West Bengal and delineating future yield based on RUE	Sarathi Saha, S. Banerjee, S. Mondal and A. Mukherjee	199	Poster
56.	A review on biological control for pest management under natural farming on special emphasis on sustainable development goals (SDGS)	Komal Suresh Ghodekar and Y. K. Devi	207	Poster
57.	System of mustard intensification through micropot technique in alluvial soil of West Bengal	Pratistha Mitra, R. Mallick and S. Kar	208	Poster
58.	Climate-smart agriculture through precision nutrient management	K. N. Yadav, N. Vikram and K. Akhil	210	Poster
59.	Crop growth and yield of rice as influenced by Integrated Nutrient Management in the Lower <i>Gangetic</i> Plains	<b>Arijit Karmakar</b> and S. B. Goswami	214	Poster
60.	Establishment of phosphorus threshold for soils of West Bengal	Karishma Parida, S. K. Pal, P. K. Mani, S. K. De and A. Majumder	215	Poster
61.	Effect of integrated nutrient management on growth, yield and yield attributes of rice (Oryza sativa L.) in Gangetic Alluvial Zone in West Bengal	Arindam Patra, A. Mahanty, S.Chakraborty and A. K. Dolai	216	Poster

62.	Influence of vermicompost, farmyard manure and chemical nutrients on chickpea ( <i>Cicer arietinum</i> L.) yield and photosynthetic pigments	<b>Md. Hedayetullah</b> and U. Giri	217	Poster
63.	Evaluation of seed priming techniques for enhancing seed quality in sesame ( <i>Sesamum indicum</i> L.)	V. Sridevi, R. Pungavi, R. Mohan, T. Ramanadane and R. Kamatchi	219	Poster
64.	The disparity in soil organic carbon under short-term conservation agriculture in a clayey soil	Jayashree Dey Sarkar, A. Kundu and P. K. Bandyopadhyay	222	Oral 4
65.	Influence of mulching levels under varied irrigation regimes on growth, yield attributes and yield of baby corn ( <i>Zea mays</i> ) in lower <i>Gangetic</i> plane of West Bengal	Abhijit Saha, D. Dutta, S. Biswas and T. Manna	224	Poster
66.	Effect of foliar spray of sodium selenate on growth and nodulation of lentil cultivars under different irrigation levels	Poovarasan P, S. Pal. and A. Das	225	Poster
67.	Effects of nano zinc on growth and yield attributes of lentil ( <i>Lens culinaris</i> Medik.)	Kajori Saha and D. Dutta	226	Poster
68.	Enhance beneficial microbial population in soils of baby corn through nutrient practices in the new alluvial zone of West Bengal	Subham Chakraborty, S. Das, A. Patra, A. Mahanty, P. Ghosh and A. K. Dolai	229	Poster
69.	Morpho-molecular characterizations of rhizobacteria collected from lentil rhizosphere	Tanusree Das and Sunita Mahapatra	230	Poster
70.	Phosphorus management in crops in relation to rhizosphere pH and yield	Soubhik Pal, S. M. Asif and A. Debnath	233	Poster
71.	Performance of isolated salinity tolerant rhizobium ( <i>Rhizobium mesoamericanum</i> ) for productivity enhancement of groundnut ( <i>Arachis hypogaea</i> L.) in coastal saline zone of West Bengal	Mallik	235	Poster
72.	Carbon mineralization pattern in field soils under two different crop seasons in a rice- wheat rotation as influenced by long-term tillage, residue and bio-fertilizer practices	Prodipto Sow, P. Mukhopadhyay and A. K. Sinha	239	Poster
73.	Effect of poultry manure, vermicompost and biofertilizer on fennel ( <i>Foeniculum vulgare</i> Mill.) in the New Alluvial Zone of West Bengal	Utpal Singha, A. Pariari and L. J. Singh	243	Poster
74.	Effect of water-soluble fertilizers on growth and yield of summer groundnut ( <i>Arachis hypogaea</i> L.)	Madhu H.S, S. K. Gunri, Osman Ali, P. Bishnu, C. K. Kundu and D. Roy	247	Poster
75.	Effect of herbicide and straw mulch application on weed management in green gram [Vigna radiata (L.) Wilczek]	Tasiqul Islam, S. Kar and A. K. Dolai	249	Poster
76.	Studies on nutrient management in finger millet ( <i>Eleusine coracana</i> L.) through organic sources	Payal Chakraborty, Rabindra Kumar Paikaray and D. Dutta	260	Poster
77.	Innovative mycoherbicides application against alien invasive weeds parthenium, lantana and water hyacinth: Commercialization perspectives	Ajay Kumar Singh and P. Laxminarayana	262	Will present in Stake Holders' Meet

78.	Evaluating the efficiency of calcium and potassium-thiosulphate on yield and economics of <i>rabi</i> maize	Prabhat Ranjan and Anupriti Mala	265	Poster
79.	Weed management in wet direct seeded rice	Sheela Barla and P. K. Gupta	269	Oral 5
80.	Effect of foliar zinc application on different growth, yield and biochemical parameters of lentil under New Alluvial Zone of West Bengal	Pragun Pal, S. Mondal, N. Adhikari, S. Goswami and B. Mukherjee	270	Poster
81.	Response of black gram ( <i>Vigna mungo</i> L.) to soil and foliar application of molybdenum in acidic sandy loam soil of Jalpaiguri, West Bengal, India		271	Poster
82.	Organic carbon dynamics under different land use systems of Assam	G. Parida, <b>Shrila Das</b> , M. C. Meena, R. Bhattacharyya, R. Das, P. Ray and R. K. Singh	273	Poster
83.	Effect of tillage and rice straw retention along with fertilizer dose on <i>rabi</i> maize in New Alluvial Zone of West Bengal	Shilpi Bera, S. Sarkar, M. Rahaman, S. Kanthal and S. Maity	276	Poster
84.	Water management opportunities including micro-irrigation and water harvesting in Agriculture	Pedada Tejeswini, Abha Manohar K. and L. Sagar	281	Poster
85.	Studies the effect of irrigation and nanofertilizers on antioxidants, soil enzymes, yield and water use efficiency of potato (Solanum tuberosum L.)	<b>Manimala Mahato</b> and Dhananjoy Dutta	292	Poster
86.	Prevalence of major plant-parasitic nematodes infesting vegetable crops related to certain abiotic factors	Arkadeb Chatterjee, D. Das and R. Jena	293	Poster
87.	Effect of maize crop residue management practices and fertilizer levels on physicochemical properties, post-harvest soil fertility and rhizosphere biota of direct seeded rice in rice-maize sequence	Billa Suresh Kumar, M. Martin Luther, K. Chandrasekhar, P. Venkata Subbaiah and K. Jayalalitha	294	Poster
88.	Variation of photosynthetically active radiation use efficiency of kharif rice influenced by different conservation agriculture practices	Dolgobinda Pal, S. Bera, S. Mondal, S. Banerjee and A. Saha	295	Poster
89.	Crop growth and yield of zero tilled mustard as influenced by integrated nutrient management under rice mustard sequence	Sramana Sen Sarma, S. B. Goswami and K. Murmu	296	Poster
90.	Improving profitability of farmers through integrated farming system in Jharkhand	Pallabi Patra and S. Kar	297	Poster
91.	Nutrient content and uptake of rice at different growth stages by different tillage and nutrient sources	Polagani Nagarjuna, B. Venkateswarlu, M. Sreerekha, P. R. K. Prasad and K. Jayalalitha	298	Poster
92.	Appraising the impacts of physical priming on morpho-physiological and yielding traits of wheat ( <i>Triticum aestivum</i> L.)	K. Bera, K. M. Chaudhury, B. Mutum and <b>Puspendu Dutta</b>	300	Poster
93.	Maize based intercropping system under deficit irrigation management for higher crop and water productivity	R. Poddar, S. Bose and P. K. Bandyopadbyay	301	Oral 6
94.	An economic assessment of conservation	Riya Chakraborty	302	Poster

	agriculture in West Bengal			
95.	Assessment of agricultural drought in red laterite zone of West Bengal using Palmer Drought Severity Index (PDSI)	Arpita Ghosal, A. Saha and M. K. Naskar	317	Poster
96.	Productivity and economics of rice under different weed management practices	Abhisek Banik, S. U. Kakade, H. Banerjee and S. Pal	345	Poster
97.	Response of Indian mustard ( <i>Brassica juncea</i> ) to sole and combined foliar application of zinc and boron	Aditi Pahari, S. K. Mukhopadhyay, H. Banerjee and S. Pal	346	Poster
98.	Effect of iron slime waste on availability of secondary nutrients in relation to yield of <i>kharif</i> onion in lateritic soil	Ankita Roy, S. K. Ghosh, P. K. Patra, S. Pal and M. Wahduzzaman	347	Poster
99.	Effect of zinc application on growth, tuber biofortification and productivity of potato (Solanum tuberosum L.) in inceptisols	Avimanyu Palit and S. K. Das	348	Poster
100.	Performance of lathyrus ( <i>Lathyrus sativus</i> L.) varieties under various sowing conditions in Vindhya Alluvial Soil of West Bengal	Ayan Bag, M. Ghosh, S. Bera, S. Banerjee and P. Biswas	349	Poster
101.	Amelioration of neurotoxin (N-Oxalyl -L-α, β-Diamino Propionic Acid) content through agronomic biofortification of Zn and Fe in Grass pea ( <i>Lathyrus sativus</i> L.)	Md. Hedayetullah, B. Rajbanshi, B. Barman, J. Akhtar and R. Sadhukhan	350	Poster
102.	Impact of seed priming with ultra violet radiation on growth and yield of Chakhao rice cultivars	Bigyananda Mutum, P. Dutta and B. Mitra	351	Poster
103.	Root characterization of rice genotypes in drought prone rainfed environment	Biswajit Karmakar, A. Henry, S. M. Haefele and M. U. Salam	352	Oral 7
104.	Evaluation of blackgram genotypes under late <i>kharif</i> situation in Red and Laterite Zone of West Bengal	Sudipta Sarker, S. Pati, S. Banerjee, M. Ghosh and R. Nath	353	Poster
105.	Effect of zinc and iron nutrition on growth, productivity and quality of field pea	<b>Debjyoti Ray</b> , S. Mondal, S. Maji, A. Banerjee and P. Bandopadhyay	354	Poster
106.	Influence of different levels of Boron and Sulphur on growth, yield and oil content of niger ( <i>Guizotia abyssinica</i> L.)	Elora Bag, C. K. Kundu, S. K. Gunri, M. Ghosh, A. Majumder and B. K. Das	355	Poster
107.	Weed management in dry direct seeded kharif rice in New Alluvial soils of West Bengal	Gurupada Saren, S. Kar, S. Chakraborty and A. Mahanty	356	Poster
108.	Superfood cultivation: A lucrative enterprise for farmers	Harshit Mishra, Supriya, A. B. Srivastava, S. Gautam, P. Kumar and A. K. Tiwari	357	Poster
109.	Factor affecting chemical pesticides use pattern and identification of buying behaviour of vegetable growers in Nadia district of West Bengal	S. S. Kumar, <b>Hiralal Jana</b> and D. Basu	358	Poster
110.	Effect of long-term fertilization on temperature sensitivity of soil nitrogen ineralization in rice-wheat system under middle <i>Gangetic</i> plain of India	Kaushik Saha, K. Batabyal and S. Dey	359	Poster
111.	Weed management practices for enhanced productivity of green gram [Vigno sinensis	Lokesh Kumar Jain	360	Poster

	(L.)] in western Rajasthan			
112.	Studies on dynamics of sulphur in rice soil under nutrient and water management	Md. Wahiduzzaman, S. Pal, D. Chakrabarty, H. Saha and P. K. Patra	361	Poster
113.	Identifying suitable crop geometry and nutrient dose for rainfed groundnut in Red and Laterite Zone of West Bengal	Rajib Kundu, R. Poddar, A. Sarkar and G. Moinuddin	362	Poster
114.	Effect of biostimulant (Ratchet) on growth and yield of transplanted <i>kharif</i> rice in Lower Gangetic Plains of West Bengal	Sibajee Banerjee, S. Pati and S. Bera	363	Poster
115.	Growth and yield of sisal ( <i>Agave sisalana</i> ) as affected by planting materials and fertilizer levels	Sitangshu Sarkar, M. S. Behera, B. Majumdar and R. K. Naik	364	Oral 8
116.	Effect of nano-dap on growth, yield and economics of rapeseed	Sophia Swain, D. Dutta and M. Mahato	365	Poster
117.	Assessing soil quality indices under different land situations in red and lateritic zone of West Bengal	Sourav Mandal, S. Saha and P. Debnath	366	Poster
118.	Growth and productivity of summer urdbean as influenced by bio-nano P and K	Megha Mondal and K. Sengupta	367	Poster
119.	Assessing the effect of irrigation and integrated nutrient management under bitter gourd production in New Alluvial Zone of West Bengal	Subam Khawas and R. Ray	368	Poster
120.	Mitigation of abiotic stress by millets	Suchismita Talapatra, M. Dey and P. Bandopadhyay	369	Poster
121.	Evaluating the effect of applied sulphur on nitrogen, phosphorus and potassium uptake of rice	Susmit Saha, S. Bera, D. Kalindi, E. Pailan, S. Das and S. Hensh	370	Poster
122.	Evaluation of growth, yield and water use efficiency of different maize based intercropping system under various irrigation regimes	Swapnadip Bose and R. Poddar	371	Poster
123.	Effect of different mulching and nutrient management practices on growth and yield of rabi maize ( <i>Zea mays</i> L.)	Susmita Moi, B. Mandal, B. B. Barick, S. Mandal, M. Dhangar and M. Pramanick	398	Poster
124.	Effect of different potassium levels on nutrient uptake, soil fertility status and yield of <i>kharif</i> maize ( <i>Zea mays</i> L.)	Bappa Mandal, S. Moi, S. Mandal, B. B. Barick and S. Biswas	399	Poster
125.	Impact of foliar nutrition on growth and productivity of relay cropped lentil ( <i>Lens culinaris</i> Medikus) in the lower <i>Gangetic</i> plains of West Bengal	Aditi Saha Roy and S. Maji	481	Poster
126.	Assessment of temporal trend of rainfall for analyzing rainfed crop potential in Alipurduar district of West Bengal	Anannya Roy, A. Saha and L. Das	482	Poster
127.	Different irrigation methods and mulch condition in sweet corn ( <i>Zea mays</i> L. var. <i>saccharata</i> ) for augmenting higher water productivity	Arif Mohammad, R. Poddar and S. K. Patra	483	Poster
128.	Integrated nutrient management in lady's finger ( <i>Abelmoschus esculentus</i> L.) under bael ( <i>Aegle marmelos</i> L.) based agri-horti	Biswapriya Mallik, J. S. Bohra, D. Roy, O. Ali and S. K. Gunri	484	Poster

	system			
129.	Effect of tebuconazole on soil enzymes and microbial activity of coastal saline and new alluvial soils of West Bengal	<b>Debajyoti Das</b> and T. Biswas	485	Poster
130.	Response of summer green gram ( <i>Vigna radiata</i> L.) varieties to different levels phosphorus and potassium fertilization under Nagaland condition	<b>D. Nongmaithem</b> and N. A. Baite	486	Poster
131.	Effect of integrated weed management on the growth and yield of Indian mustard ( <i>Brassica juncea</i> )	H. M. Chishi, M. Saklani, L. Yosung and T. Malemnganbi	487	Poster
132.	Improving sunflower production in alluvial Soils of West Bengal as influenced by sulphur, zinc and boron application	Lalatendu Nayak, C. K. Kundu, H. Banerjee, S. K. Pal, S. K. De, S. J. Das and N. M. Devi	488	Poster
133.	Strategies for improving phosphorus availability in agriculture	<b>Madhurima Dey</b> and P. Bandopadhyay	489	Poster
134.	Land shaping for improving yield and economics of low land rice-rice system of New Alluvial Zone of West Bengal	Manabendra Ray, A. Choudhury, S. K. Mukhopadhyay, S. Saha and S. Chatterjee	490	Oral 9
135.	Effect of natural farming components on yield, soil properties and uptake of nutrient in wheat + gram intercropping system	Raghuveer Choudhary, R. Kumar and M. Choudhary	492	Poster
136.	Effect of slag based gypsum on availability of primary nutrients in relation to growth and yield of kharif onion in lateritic soil	Rohit Kumar Das, P. K. Patra, S. K. Bhunia, S. Pal and M. Wahduzzaman	493	Poster
137.	Sorption of fluoride in soil under different level of phosphate in some Dooars tea plantation of West Bengal and Meghalaya	Swarbinay Mahanta, P. Ghatak, P. U. Acharjee and A. Debnath	494	Poster
138.	Evaluation of new molecules of herbicide on weed infestation, growth and yield of <i>kharif</i> rice	Salma Sahani, M. Pramanick and D. Dutta	495	Poster
139.	Effect of nutripriming of zinc and boron on growth and productivity of lentil with irrigation regimes in the lateritic belt of the of sub-humid tropical region	Sananda Mondal and K. Pramanik	496	Poster
140.	Effect of phosphorus (P) and zinc (Zn) interactions on dry matter, P and Zn concentration and uptake in green gram	Sk Md Asif, S. Pal and A. Sen	497	Poster
141.	Performance of lathyrus varieties under different establishment methods in Red and Lateriete Zone	V. V. S. Jaya Krishna, S. Banerjee, M. Ghosh and S. Pati	498	Poster
142.	Underutilized crops of south Odisha & their domestication by the tribal communities	Sourav Paramanik, K. K. Panda and M. S. Rao	499	Poster
143.	GIS -based evaluation of soil irrigability and land capability for agricultural sustainability affected by fly ash		500	Oral 10
144.	Performance of straw and green mulch as the	Suchandra Neogi, S. Das and	501	Poster

	tool for weed suppression and yield maximization in jute-rice crop sequence under conservation agriculture management system	K. Brahmachari		
145.	Understanding the effect of different planting methods and levels of herbicide on the growth and yield of lowland rice ( <i>Oryza sativa</i> L.)	T. Malemnganbi, J. Lhungdim, L. Yosung and H. M. Chishi	502	Poster
146.	Tillage and crop residue on weed dynamics and productivity of rice under rice-wheat cropping system	Piyush Kumar Bhargaw, S. Karmakar, C. S. Singh, A. K. Singh and S. Barla	513	Poster
147.	Long-term effect of organic sources of nutrients on yields and soil properties of the rice-wheat rotation	<b>Bipasha Das</b> , V. Pooniya, Y. S. Shivay and D. Kumar	517	Poster
148.	Evaluating the effect of phosphorus management through organic and microbial sources on growth and productivity of baby corn ( <i>Zea mays</i> L.)	Subrata Bag, Y. V. Singh, S. L. Jat, V. K. Sharma, P. Jaiswal and S. K. Sarkar	518	Poster
149.	Performance of scented rice (cv. Kalonunia) under varied seedling age and spacing in New Alluvial Zone of West Bengal	Poulami Bhowal, M. Ghosh, S. Banerjee, A. Mukherjee, C. K. Kundu, A. Bag and P. Biswas	519	Poster
150.	Evaluating the efficiency of the pigeonpea- wheat system across different production scenarios: natural, organic, conservation, and conventional system.	Priyanka Saha, T. K. Das, R. Raj, D. Mahanta, S. Sen, A. Roy, Alekhya G, T. Sharma and S. Roy	521	Poster
151.	Impact of climate smart technologies on carbon and water footprint for sustainable mustard production in semiarid ecology of India	Anamika Barman, V. K. Singh, S. S. Rathore, S.Babu and S. Roy	522	Poster
152.	Effect of nano-urea for enhancing the productivity of rainfed maize ( <i>Zea mays</i> L.)	Tanmay Das, T. Singh, S. Roy, S. Bag, B. Das and A. Saha	524	Poster
153.	Enhanced corm yield, water and energy productivity in elephant foot yam ( <i>Amorphophallus paeoniifolius</i> ) (Dennst.) Nicolson through water smart practices	Sunitha S. and Suresh K. J.	536	Oral 11
154.	Effect drip irrigation and biofortification of nano zinc oxide on maize during summer	Sk Naim Aktar and K. Pramanik	539	Poster
155.	Dhaincha coculture and mulching effect on dry direct seeded rice under different methods of crop establishment and deficit fertilizer application	Sagun Hembram and S. K. Maity	550	Poster
156.	Degree of phosphorus saturation for assessing environmental risk in acidic soils of West Bengal	Subhadip Saha and S. K. Pal	551	Poster
157.	Boron and molybdenum availability in soil under long term fertility experiments	Souvik Dey, K. Batabyal and K. Saha	552	Poster
158.	Depthwise distribution of different forms of potassium under three different rice based cropping system	Rupom Barua and S. Murmu	553	Poster

Theme-C: Horticulture as a growth engine in achieving sustainable developmental goals

SI	Title	Author	Abstract No.	MOP
No.				
1.	Underutilized vegetable crops vis-à-vis food and nutritional security of Tripura	T. K. Maity and T. Bhattacharjee	537	LL
2.	Growth and yield of potato ( <i>Solanum tuberosum</i> L.) as influenced by biostimulant under soilless culture system	A. Kundu, Umesh Thapa and S. Karak	179	IO
3.	Potential of commercial cultivation of tropical orchids and way forward	Dwijendra Barman	278	IO
4.	Off season onion production	Maya Ram, S. Maji, Razauddin and R. C. Meena	9	Poster
5.	Effect of organic supplements on production of onion	B. Roy, <b>Chandan Karak</b> and B. Chakraborty	24	Poster
6.	Studies on microbial growth pattern and quality during preparation of sauerkraut	P. K. Thakur, J. Saha, J. Kabir and R. S. Dhua	27	Poster
7.	Pollen biology and pollen-pistil interaction following pollination of tuberose cultivars	Rosalind Lallawmzuali, T. U. Bharathi and Kirthishree S. P.	35	Oral 1
8.	Cherry tomatoes: a high value crop for urban horticulture	Sanjana Kumari, V. Kumari, P. Kumari and W. Habeeb	38	Poster
9.	Marker assisted selection for orange tomato lines carrying resistance alleles for root knot and late blight diseases	Vijaya Lakshmi, A. Kumar, S. Sangam, S. Akhtar and T. Chattopadhyay	58	Poster
10.	Adventitious rooting from tomato cuttings: an opportunity for root trait analyses	Vishakha Kumari, A. Kumar, S. Sangam, S. Kumari, P. Kumari, S.Akhtar, R. B. Verma and T. Chattopadhyay	59	Poster
11.	Performance of different litchi cultivars ( <i>Litchi chinensis</i> Sonn.) under <i>terai</i> region of West Bengal condition	Saidiksha Subba and N. Bhowmick	61	Poster
12.	Evaluation of turmeric genotypes based on growth, yield traits	D. Gowthami, K. Giridhar, S. S. Kumari and D. R. Salomi Suneetha	62	Poster
13.	Response of new brinjal varieties to varied doses of nitrogenous and potassic fertilizers	Shirin Akhtar, N. Kumari, K. Kant, R. B. Verma and T. Chattopadhyay	63	Oral 2
14.	Inexpensive use of hydroponics for coriander growth	S. Mondol and Ankan Das	68	Poster
15.	Mulching in vegetable crops: A step towards natural farming	Waris Habeeb, P. Kumari, S. Kumari and V. Kumari	70	Poster
16.	Household health security through nutritional garden: a need of the hour	Swagata Ghoshal	92	Poster

17.	Production and problems in large cardamom cultivation in the sub-Himalayan region of West Bengal	Deparna Pradhan, G. Kumari and K. K. Das	99	Poster
18.	Physiological growth regulation of cherry tomato ( <i>Solanum lycopersicum</i> var. <i>cerasiforme</i> ) under soil-less culture as influenced by different nitrogen concentrations	Pravachan Chettri, S. Shil and Umesh Thapa	111	Poster
19.	Effect of pre-soaking treatments on asexual propagation of passion fruit	Sudip Kumar Layek, F. K. Bauri, K. Dey and A. Ghosh	125	Poster
20.	Nursery management in low-cost plastic tunnel for off-season cultivation of cucumber ( <i>Cucumis sativus</i> L.) in summer	Kiran Mary Kandir, J. K. Lal, J. Oraon and P. Hazra	129	Poster
21.	Optimization of enzyme assisted juice extraction from banana	Guddu Kumar, M. A. Aftab And P. K. Thakur	132	Poster
22.	Crop varieties suitable for organic farming in vegetables	Priyanka Kumari, S. Kumari, V. Kumari, W. Habeeb and R. B. Verma	139	Poster
23.	Evaluation of different levels of NPK and vermicompost on quality of mint ( <i>Mentha arvensis</i> L.)	A. Kabiraj, A. K. Banik and N. Chattopadhyay1	143	Poster
24.	Efficacy of packaging material, ventilation and storage condition on shelf life and quality of mint ( <i>Mentha arvensis</i> L.)	A. Kabiraj, A. K. Banik and N. Chattopadhyayl	144	Oral 3
25.	Studies on phenophase based nutrient scheduling on flower yield and quality in China aster	Shreya Mandal and T. K. Chowdhuri	148	Poster
26.	Diversity analysis of selected <i>Hibiscus</i> spp. based on morphological, micromorphological, and molecular markers	Tanushree Koley, M. Mahanta and J. Majumder	150	Poster
27.	Morpho-molecular diversity analysis among selected rose genotypes	Kalyan Chhettri, M. Mahanta and J. Majumder	151	Poster
28.	Effect of organic garden pea cultivation on the performance of succeeding Amaranth (sps.) growth and yield	Suprava Biswal and Ranjit Chatterjee	172	Poster
29.	Impact of humic acid bio-stimulant on growth, quality, yield and soil microbial population in chilli ( <i>Capsicum annuum</i> L.)	Sibsankar Das, S. Bera and M. Balagoni	191	Poster
30.	Effect of the seaweed on growth and flowering of dahlia	Mahasina Ahmed, A. Rahaman, A. K. Pal and J. Majumder (Sarkar)	196	Poster
31.	Studies on corm production from cormel in the <i>Gangetic</i> plains of West Bengal	Alauddin Rahaman, M. Ahmed , J. Majumder (Sarkar), T. Mandal and A. K. Pal	197	Poster

32.	<i>In-situ</i> performance of some wild edible	Subrata Mahato and F. K.	202	Poster
	fruits in red and laterite zone of West Bengal	Bauri		
33.	Variability of bael grown in New Alluvial Zone of West Bengal	S. Dutta, S. Kundu, Chinmoy Mandal, M. Alam and S. Chhetri	213	Poster
34.	Production technology of fruits	Vikash Kumar Sonkar, S. Kumar, S. Yadav and A. Singh	218	Poster
35.	Response of black turmeric to organic manures, bio-fertilizers and graded levels of fertilizers	Anasuya Sil and J. K. Hore	232	Poster
36.	Inventions in flower drying and preservation technology – a chronological study of related patents	Marina Narjinary	238	Poster
37.	Nutrient management of chrysanthemum (Chrysanthemum morifolium) cv. Katinka using eco-friendly inputs	Laishram Hemanta, P. Imchen, R. Keditsu, A. Sarkar, S. Jamir, G. Yepthomi and M. P. Devi	240	Poster
38.	Studies on the effects of different developmental stages on biochemical composition of the rhizome reserves in <i>Curcuma caesia</i> Roxb.	Jayoti Majumder	242	Oral 4
39.	Effect of bio-inoculants on growth, yield, quality and disease incidence in cabbage ( <i>Brassica oleracea</i> var. <i>capitata</i> )	Monami Sarkar and A. Chattopadhyay	248	Poster
40.	Phenological growth stages of wax apple (Syzygium samarangense) in New Alluvial Zone of West Bengal	Sanghamitra Layek, R. Chaudhury and D. Majhi	253	Poster
41.	Effect of biostimulants on fruit crops- an overview	Ritwika Sen and P. Datta	255	Poster
42.	Influence of seaweed extract on growth, yield and quality of onion cv. Sukhsagar	S. Samanta, N. Biswas, N. Chattopadhyay, A. Bandyopadhyay and D. K. Ghosh (LKN)	268	Poster
43.	Integrated nutrient management of ginger grown as inter crop with curry leaf	D. K. Ghosh and H. Saha	274	Oral 5
44.	Dominance of biostimulant on growth and yield dynamics of onion	N. Biswas, S. Samanta, N. Chattopadhyay, A. Bandyopadhyay and D. K. Ghosh (LKN)	282	Poster
45.	Effects of biostimulants in medicinal and aromatic plants - a review	S. Subba, N. Chattopadhyay, A. Bandyopadhyay and D. K. Ghosh (LKN)	303	Poster
46.	Effect of foliar application of biostimulants and pinching on growth, flowering and shelf life of African marigold ( <i>Tagetes erecta</i> L.)	Sushree Choudhury, D. Sarangi, K. Mishra, S. Mohanty and S. Mohanty	304	Poster
47.	Characterization and selection of superior genotypes in jackfruit	Tanmoy Mondal, F. K. Bauri, D. K. Mishra and P. Patil	305	Poster

48.	Induction of in vitro microrhizome formation of <i>Aloe vera</i> and its application in micropropagation	Ishita Khatua, P. Raha, G. Saha and T. K. Bandyopadhyay	333	Oral 6
49.	Effect of different growing media on early seedling growth of lettuce and pakchoi in hydroponics	Dinkar Gaikwad	400	Oral 7
50.	Micronutrients potentials of pointed gourd and its benefits in human health	Gayatri Sinha, A. Chattopadhyay, M. Shahid, S. Baskey, S. Sarkar, P. Pratyusha and B. Maruthi	401	Poster
51.	Effect of synthetic auxins 3, 5, 6-TPA, GA3, and KNO3on pre-harvest fruit drop, fruit growth, and yield prospective of litchi ( <i>Litchi chinensis</i> Sonn.)	K. Rathod, S. Nisar, M. Alam, S. Dey and B. Karmakar	402	Poster
52.	Integrated nutrient management of French bean ( <i>Phaseolus vulgaris</i> L.) in subtropical humid zone of Nagaland, India	M. Changkiri, N. K. Adhikary, A. Jha and S. P. Kanaujia	403	Poster
53.	Influence of micronutrients on sustainable production of pointedgourd ( <i>Trichosanthes dioica</i> ) under varied nutrient regime in New Alluvial Plains of West Bengal	Natasha Parvin, S. B. Chattopadhyay and P. Choudhuri	404	Poster
54.	Standardization of propagation techniques of Malay apple through cuttings	K. Singh, N. Chamling, Nilesh Bhowmick, A. Chakraborty, B. Chakraborty and M. P. Devi	405	Poster
55.	Post-harvest quality attributes of puree prepared from tomato and cherry tomato genotypes	Pinky Maity, S. Ghosh and I. Chakraborty	406	Poster
56.	Studies on the performance and economic feasibility of guava cultivation intercropped with leguminous vegetables in the red and lateritic zone of West Bengal	S. Chattopadhyay, Samarpita Roy, K. K. Mandal, M. A. Hasan and R. Mohanta	407	Poster
57.	Productivity trends of cucurbit vegetables in West Bengal as influenced by weather variables	Subhrajyoti Sengupta, M. K. Pandit, M. K. Nanda and R. Pandit	408	Poster
58.	Growth and yield of tomato (Solanum lycopersicum) under integrated nutrient management in red and laterite soils of India	Arindam Sarkar, G. Moinuddin and R. Kundu	409	Poster
59.	Potential and importance of underutilized cucurbitaceous crop spine gourd for food and nutritional security	Sushree Choudhury, D. Sarangi, K. Mishra, S. Mohanty and S. Mohanty	410	Poster
60.	Effect of organic mulching, vermicompost and organic manures on physico-chemical qualities of dragon fruit ( <i>Hylocereus costaricensis</i> L.) cv. Royal Moroccan Red grown under New Alluvial Zone of West Bengal	Susmita Dey, K. Rathod and P. Datta	411	Poster
61.	Influence of potassium on kharif onion (Allium cepa L.)	Swagata Mondal, Arnab Dasmodak, T. K. Maity, P. Hazra and M. K. Pandit	412	Poster

62.	Studies on the impact of nutrient management on growth and yield of lemon grass ( <i>Cymbopogon flexuosus</i> ) var. Krishna.	Dukchuk Tamang, A. Bandyopadhyay, N. Chattopadhyay and D. K. Ghosh (LKN)	413	Poster
63.	Correlation analysis for fruit yield and its related traits in okra [Abelmoschus esculentus (L.) Moench]	A. K. Zate, 1s. P. Pole, A. J. Salunke, A. R. Jadhav and J. Q. Pathan	414	Poster
64.	Ensete glaucum, affiliation of musaceae family: A threatened wild taxa on the soil of Nagaland	Animesh Sarkar, S. Kumari, C. Bihari and S. Debnath	415	Poster
65.	Studies on top working of old, senile, seedling originated mango trees with scions of commercial mango varieties	A. Saha and Sanjit Debnath	416	Poster
66.	Introducing organic/ natural farming in schools	Ekadashi Nandi	417	Oral 8
67.	Effect of cormel size on growth and corm yield of gladiolus	Malati Murmu and A. M. Khan	418	Poster
68.	Assessment of the influence of seed priming on germination and seedling growth of tuberose	Meikam Ichancha, S. S. Gantait and S. Rai	419	Poster
69.	Evaluation of some promising gladiolus cultivars in <i>terai</i> region of West Bengal	Oendrilla Chakraborty and A. M. Khan	420	Poster
70.	Assessing the production and evaluating the marketing channels of garden pea in different markets underneath assorted blocks of Hooghly region, West Bengal	Prasenjit Kundu, A. Ghosal, N. K.Adhikary AND A. Mukherjee	421	Poster
71.	Effect of different growth hormones on the hardwood cuttings of <i>Bougainvillea</i> var. Partha	Puja Maiti, T. Roy, T. K. Chowdhuri and T. Mandal	422	Poster
72.	Green chilli powder- A promising value addition to extend storability of green chilli	Rahul Sur, P. Maity, S. Chatterjee, A. Chattopadhyay and I. Chakraborty	423	Poster
73.	Study the performance of banana (AAB) under <i>Gangetic</i> plain of West Bengal	Rajdeep Mohanta, R. Paul, T. Mondal, S. Mahato, S. Roy and F. K. Bauri	424	Poster
74.	Performance and profitability study of ginger cultivars raised through single bud technique under arecanut based high density multi-spices cropping system	Samima Sultana and P. S. Medda	425	Poster
75.	Effect of gamma irradiation on multiplication of corm buds of plantain var. Nendran through macropropagation	Shivaji Chattopadhyay, R. M. Reja, S. Datta, S. Roy and S. Debnath	426	Poster
76.	Effect of integrated nutrient management on growth and yield of turmeric ( <i>Curcuma longa</i> L.) cv. Pragati under the New Alluvial area of West Bengal	Souvick Banik, A. Pariari, L. J. Singh and M. V. Bhaskar	427	Poster
77.	Effect of orthosilicic acid on early blight in tomato	Sudipta Ghosh, M. K. Pandit, S. Rizal and S. Oraon	428	Poster

Theme-D: Advances in crop improvement, biotechnological approaches and biotic & abiotic stress management

Sl No.	Title	Author	Abstract No.	MOP
1.	Enhanced selectivity of herbicides in tomato through the safening effects of melatonin and 2,4,6-trichlorophenoxyacetic acid	T. Oliveira, A. Putri, A. A. C. Tavares, V. Singh, J. Argenta, S. Broderick and Te Ming Tseng	465	PL
2.	Advances and challenges in the use of RNAi as a tool for weed management	Luis Avila	466	PL
3.	Futuristic weed management in natural farming	Prof. Samunder Singh	526	PL
4.	Weed biology and ecology: The important science to understand behaviour of weeds in agro-ecosystems	Pijush Kanti Mukherjee	448	LL
5.	Weeds are not enemies always – their role in ecosystem services for ecological restoration	Sanjoy Saha and G. Kar	464	LL
6.	Potential rice genotypes for drought-affected areas of West Bengal	Indrani Dana, U. S. Ray, S. Debnath, M. K. Bhowmick, A. K. Srivastava, V. Kumar and S. Singh	529	LL
7.	Herbicide tolerant crops as an option of biotechnological approaches for weed management in Indian agriculture	C. Chinnusamy	540	LL
8.	Intellectual property rights for rice in West Bengal: Scope and achievements	Mrityunjay Ghosh, J. Karforma, I. Dana, B. Adhikary, M. Hom Choudhury, M. Ghosh and B. Roy	542	LL
9.	Environmental concern of herbicides and role of phytochemicals as source of bio-herbicides in natural farming	Shobha Sondhia	543	LL
10.	Search for fungal pathogensas mycoherbicides against the invasive aquatic plant waterhyacinth	Puja Ray, D. Misra and W. Dutta	286	Ю
11.	Chemical and non-chemical weed management options for transplanted finger millet in coastal deltaic ecosystem of Puducherry UT	P. Saravanane, A. Karthickraja and D. Sivasakthi	456	10
12.	Baseline sensitivity of <i>Ustilaginoidea virens</i> , a pathogen causing rice false smut disease, to EBI and QoI fungicides in India	Manas Kumar Bag, T. Adak, A. Banerjee, U. Giri and P. Masurkar	520	IO
13.	Development of a modified QuEChERS method coupled with LC-MS/MS for determination of spinetoram residue in chilli ( <i>Capsicum annuum</i> ) and safety risk assessment	Pritam Ganguly and K. Divya Jyoti	10	Poster
14.	Biochemical studies in lentil ( <i>Lens culinaris</i> Medik.) genotypes under <i>Stemphylium</i> blight stress	S. Pavithra, A. Sarkar and P. M. Bhattacharya	11	Poster
15.	Rice root-knot nematode, <i>Meloidogyne</i> graminicola management through bioagents	Shanowly Mondal (Ghosh), A. Gope and G. Chakraborty	12	Poster
16.	Performance of direct seeded rice in Old Alluvial Zone of West Bengal under weed	Shyamashree Roy, T. K. Pandit and P.	13	Poster

	management through different herbicide application	Barailly		
17.	Study on diversity and community structure of mite fauna associated with vegetable in West Bengal, India	S. C. Bala	14	Poster
18.	Studies on population dynamics and infestation of fruit flies in ash gourd	Ipsita Ghosh, S. Pramanik, A. K. Gupta and P. Debnath	18	Poster
19.	Evaluation of infrared thermometry based stress indices for monitoring water stress of potato ( <i>Solanum tuberosum</i> L.) under irrigation and graded dose of potassium in New Alluvial Zone of West Bengal	Trisha Manna, M. K. Nanda, A. Mukherjee, A. Saha and M. Roy	20	Oral 1
20.	Species richness and emerging insect pests of jackfruit <i>Artocarpus heterophyllus</i> (Moraceae) in <i>Gangetic</i> basin of West Bengal	Anamika Kar, F. K. Bauri, D. K. Misra and P. Patil	21	Poster
21.	Assessment of management practices against major insect pests in bittergourd (Momordica charantia L.)	Rituparna Mandal, A. Sasmal, D. Khulbe, G. Biswal, J. Padhi and C. M. Khanda	34	Poster
22.	Weed flora and growth of aromatic black rice (Oryza sativa) influenced by transplanting date and integrated weed management under SRI	Sibino Dolie and D. Nongmaithem	41	Poster
23.	Effect of Ag-Nanoparticle in biochemical and physiological changes during progress of seed development and maturation in green gram	Aninda Chakraborty, S. K. Bordolui and D. Nandi	42	Poster
24.	Evaluation of different modules for management of maydis leaf blight disease of maize	Srabani Debnath and Sonali Biswas	46	Poster
25.	Integrated weed management in taro at different agro-climatic conditions of India	J. Suresh Kumar, S. Sunitha, J. Sreekumar, M. et al.	48	Oral 2
26.	Efficacy of fungicides on incidence of maydis leaf blight of maize	<b>Srabani Debnath</b> , S. Biswas and N. Islam	50	Poster
27.	Exploring natural resistance alleles and fruit colour mutants in tomato through marker assisted breeding	T. Chattopadhyay, D. Maurya, A. Mukherjee, A. Kumar, S. Sangam and S. Akhtar	51	Oral 3
28.	Development of suitable IRM modules to manage the insect pests of chilli	L. Mandal, P. Mondal and S. Chatterjee	53	Poster
29.	If 'time' is the concern, it's time to adopt VPCR	T. Chattopadhyay, S. Sangam and S. Akhtar	56	Poster
30.	Multiplex PCR mediated identification of tomato segregants carrying ty2, ty3 and ph3 resistant alleles	V. Lakshmi, A. Kumar, s. Sangam, S. Akhtar and T. Chattopadhyay	57	Poster
31.	Marker assisted identification of anthocyanin and lycopene rich tomato lines carrying resistance allele for root knot disease	Arnab Mukherjee, D. Maurya, S. Akhtar and T. Chattopadhyay	60	Poster

32.	Early generation selection of <i>Phomopsis</i> fruit rot resistant brinjal	Mrinal Kumar, K. Kant, S. Akhtar, C. Kushwaha, T. Chattopadhyay, R. Rani and R. B. Verma	64	Poster
33.	Stimulatory effect of Ag nano- priming as pre- treatment factors on germination and vigour of carrot ( <i>Daucas carota</i> L.)	Eshita Kundu and S. K. Bordolui	65	Poster
34.	Evaluation of the effects of seed invigoration treatments with precursor PEG-6000 on quality performance of chickpea ( <i>Cicer arietinum</i> L.)	Anish Choudhury and S. K. Bordolui	66	Poster
35.	Mapping yield-enhancing leaf area expansion ability of rice under low light	Nimitha K, S. Das and S. Bhattacharyya	67	Poster
36.	Exploration of different diseases of lentil in West Bengal	Md Imtiazzaman and S. Murmu	69	Poster
37.	Performance of lentil genotypes and their screening for <i>Stemphylium</i> blight resistance in New Alluvial Zone of West Bengal	Shishir Rizal and P. Saha	73	Poster
38.	Identification of brinjal genotypes resistant to bacterial wilt	Rupam Rani, A. B. Singh, S. Akhtar, M. Kumar, T. Chattopadhyay and R. B. Verma	77	Poster
39.	Performance of biointensive module against banana pseudostem weevil ( <i>Odoiporus longicollis</i> Oliver)	Jayita Hore and K. Roy	81	Poster
40.	Appraisal of native isolates of fluorescent pseudomonads against wilt diseases of brinjal	R. Sahoo, J. N. Srivastava and Srinivasaraghavan A.	82	Poster
41.	Genetic diversity, association and principal component analysis of some khesari ( <i>Lathyrus sativus</i> ) genotypes in North Bengal	Puja Sarkar, S. Chakraborty, S. K. Roy, M. Chakraborty et al.	83	Poster
42.	Standardization of seed germinability of Solanum torvum using different concentration of GA3	Susmita Oraon, I. Jamir, U. Bauri, A. K. Mandal and A. Chattopadhyay	89	Poster
43.	Effect of different pre and post emergence herbicides in <i>rabi</i> maize	U. Bhattacharya and S. Sarkar	90	Poster
44.	Biochemical characterization of rice genotypes against leaf folder <i>Cnaphalocrocis medinalis</i> Guenee	A. K. Nayak, A. Sasmal, P. Golive, G. Kumar, S. S. Dash et al.	93	Poster
45.	Field efficacy of novel formulated emulsifiable concentrate of essential oil and azadirachtin against insect-pests on <i>kharif</i> rice	Sitesh Chatterjee, A. K. Hazra, C. Gangopadhyay and T. Dasgupta	96	Oral 4
46.	Assessment of different weed management practices for increasing the yield of groundnut in farmer's field of Howrah district of West Bengal	K. Barui, S. Banerjee, B. Sarkar, K. Nag, A. Samanta and J. Mandal	97	Oral 5
47.	Population dynamics of pests infesting stored garlic emphasizing garlic mite, <i>Aceria tulipae</i> (Acari: Eriophyoidea)	Amit Gope, P. Debnath, S. Mondal (Ghosh) and N. Mandi	101	Poster

48.	Isolation, in-silico study, expression analysis and promoter characterization of calmodulinlysine n-methyltransferase gene (OsCAM KMT) from Indica rice cultivar	Debarati Nandi and J. Banerjee	105	Poster
49.	Impact of salt stress in black and white rice genotypes at physiological and biochemical level	Shivani and J. Banerjee	106	Poster
50.	The role of quick photo-protection recovery genes in yield loss alleviation of rice	K. Bhattacharya, N. S. Mahapatra, S. Saha, R. Kundu and S. Bhattacharyya	115	Poster
51.	Fusarium wilt of isabgol (Plantago ovata Forsk.) and its management studies: A review	Shaik Munnysha, R. N. Bunker, S. Akodiya, M. Beniwal, K. Kumawat and P. Sharma	117	Poster
52.	Development of salt tolerant rice through genetic engineering approach to bring food security in Bangladesh	Shamsul H. Prodhan, H. Hoque, A. Rahman Sunny and Md. N. Hasan	120	Poster
53.	Nutritional and anti-oxidant study of sprouts and microgreens in selected lentil germplasms	Partha Mondal, S. A. Mondal and J. Datta	123	Poster
54.	Effect of herbicides on mixed weed flora and productivity of transplanted winter paddy ( <i>Oryza sativa</i> L.)	Debarati Seal, J. Rakesh, K. Mishra, M. Koley and B. C. Patra	127	Poster
55.	Chemical weed management in chickpea (Cicer arietinum L.) by imazethapyr under lateritic belt of West Bengal	M. Kumar, <b>Pritam Ghosh</b> , G. Manisankar and A. K. Dolai	135	Poster
56.	Present status of wheat diseases prevalent in <i>Indo-Gangetic</i> plains of West Bengal	Anubhab Hooi and S. Mahapatra	142	Poster
57.	Development of autotetraploids via <i>in vitro</i> colchicine treatment in gerbera for improved floral traits	Manisha Mahanta, S. Gantait, S. Sarkar, R. Sadhukhan and S. Bhattacharyya	146	Poster
58.	Meta-topolin induced accelerated in vitro mass propagation of stevia (Stevia rebaudiana Bert.) and its fidelity assessment	T. Subrahmanyeswari, S. Gantait, S. N. Kamble, S. Singh and S. Bhattacharyya	147	Poster
59.	Genome wide association studies for mapping and identification of novel cold tolerance qtls in rice	Rimpa Kundu, K. Bhattacharyya, N. Sinha Mahapatra and S. Bhattacharyya	149	Poster
60.	Characterization of CAMTA gene family members from rice ( <i>Oryza sativa</i> L.)	Hena Gain and Joydeep Banerjee	157	Oral 6
61.	Biofortification of mungbean ( <i>Vigna radiata</i> [L.] R. Wilczek) for grain iron and zinc enrichment	M. Murmu, S. Roy, S. Bhattacharya and A. Das	159	Poster
62.	Elucidating genotype by environment interaction for detection of stable micronutrient rich genotypes in lentil ( <i>Lens culinaris</i> Medik.)	S. Bhattacharya, Soumyayan Roy and A. Das	160	Poster

63.	Effect of subculture frequncy on enzymatic and non enzymatic responses of ROS in Withania somnifera	Adrija Banerjee and K. Kumar	167	Poster
64.	Species and race composition of root knot nematode ( <i>Meloidogyne</i> ) infecting betelvine in <i>terai</i> region of West Bengal	M. Modak, P. Sarkar, A. Samajder and A. Mallick	173	Poster
65.	Genetic variability, correlation and diversity studies in Tossa Jute ( <i>Corchorus olitorius</i> L.)	S. S. Subramanyam Dash, S. Hazari, A. Kumari and A. Roy	175	Poster
66.	Utility of cordyceps as an entomopathogenic fungi to control insectpests	G. Nikhitha and S. Bhattacharya	181	Poster
67.	Biology of <i>Henosepilachna</i> vigintioctopunctata (Coccinellidae: Coleoptera) on brinjal	L. Prasanthi, S. Pal and Swarnali Bhattacharya	192	Poster
68.	Off-field sucker production of post-harvest banana corms under different hormonal and nutritional regime	Dawan Arkini Challam and S. Mondal	193	Poster
69.	Bio-intensive insect-pest management on rice	Chirasree Gangopadhyay and S. Chatterjee	194	Poster
70.	Nanoparticles in plant tissue culture: its beneficial and adverse aspects	Lopamudra Jena and T. Mandal	195	Poster
71.	Genetic bio-fortification for improving protein content in rice ( <i>Oryza sativa</i> L.)	Amrita Kumari, S. Bhattacharya, S. S. Subramanyam, A. Roy Aich and A. Das	209	Poster
72.	AMMI and GGE biplot analysis of wheat genotypes for spot blotch disease and yield under Indo Gangetic Zone of West Bengal	Sudhir Kumar, S. Mukherjee, A. Maji, S. Mahapatra and S. Gorai	220	Poster
73.	Easy phenotyping methodology for the quick photoprotection recovery trait in rice and their validation by mapping	Shoumik Saha, N. Sinhamahapatra, K. Bhattacharya, S. Ganguly and S. Bhattacharyya	223	Poster
74.	Incidence of arthropod natural enemy complex in pulse crops ecosystem during winter season in lower Gangetic plains of West Bengal	Soumita Bera, S. Ray and A. Banerjee	231	Poster
75.	Haploid embryogenesis from in vitro cultured anther of limonium misty blue	Priyanka Raha, J. Karmakar, G. Saha, I. Khatua and T. K. Bandyopadhyay	234	Oral 7
76.	Insect pest problem in stored pulses with special reference to Callosobruchus maculatus	Bipadtaran Sutradhar and N. Chaudhury	237	Poster
77.	Compatibility of entomopathogenic nematode (Steinernema sp.) and coccinellid (Cheilomenes sexmaculata) with some insecticides used against fall army worm (Spodoptera frugiperda)	Md I. Zaman and L. C. Patel	246	Poster
78.	Evaluation of a set of newly bred lines of cowpea and their response to foliar application of ethylene at pre-harvesting crop stage	Bibekananda Maiti and S. Mondal	254	Poster

79.	Abundance and diversity of insects associated with tomato in the Lower <i>Gangetic</i> Alluvial Plains of West Bengal	Aivi Mallick, A. Samajder, M. Modak and K. Roy	256	Poster
80.	Field screening of faba bean ( <i>Vicia faba</i> L.) genotypes against leaf miner and pod borer	A. Samajder, A. Mallick, M. Modak, R. Nath and K. Roy	257	Poster
81.	Identification of aphids and their distribution in the Lower <i>Gangetic</i> Plain Region of West Bengal, India	Kriti Singh and K. Roy	258	Poster
82.	Occurrence of chilli gall midge, <i>Asphondylia</i> sp. (Diptera: Cecidomyiidae) in Gangetic Alluvial Zone of West Bengal	L. S. Balguri and A. Pramanik	259	Poster
83.	Enhancing plant growth by restricting chromium translocation through organic manure application	D. Ghosh, M. Das, P. Debroy, A. Maity and K. Laxminarayana	263	Oral 8
84.	Evaluation of toxicity of some newer insecticides against Bihar hairy caterpillar ( <i>Spilosoma obliqua</i> Walker) infesting black gram under laboratory condition	Sabyasachi Ray, S. Bera and A. Banerjee	264	Poster
85.	Validation of drought responsive microRNA in a drought tolerant rice cultivar	Oindrila Debsarma	266	Poster
86.	The quality assessment of starch in different genotypes of greater yam (Dioscorea alata)	Nilima Karmakar, H. Patel and K. D. Desai	272	Poster
87.	Comparative studies of phenotypic yield attributes in okra [Abelmoschus esculentus (L.) Moench]	Prabir Chakraborti and M. Kumar	275	Poster
88.	Genotypic variability in yield attributing seed traits in okra [Abelmoschus esculentus (L) Moench]	Mukesh Kumar and P. Chakraborti	279	Poster
89.	Weed management in summer sesame sown before and after irrigation	Antara Pramanik and B. Duary	283	Poster
90.	Identification of resistant sources against anthracnose disease of chilli under both field and artificial conditions	Uttam Bouri, A. K. Mandal, I. Jamir, S. Oraon and A. Chattopadhyay	284	Poster
91.	Residue kinetics of the insecticide pymetrozine in soil	Subhrautpal Karmakar, S. Pan, G. Sarkar and R. K. Kole	285	Poster
92.	Screening salinity tolerance lentil and expression analysis of <i>NHX1</i> gene	Debarati Roy, A. Roy, S. K. Murmu and S. Bhattacharyya	306	Poster
93.	Multiple stress gene pyramiding for abiotic and biotic stress in rice through marker-assisted backcross breeding	H. Swain, M. Valarmathi, N. M. Boopathi and M. Raveendran	307	Oral 9
94.	Genotypic and seasonal variation for hard seededness and related physiological parameters in mungbean [Vigna radiata (L.) Wilczek]	Ishita Samai, M. S. Ali Mondal, M. H. Islam, A. K. Pal and A. Das	308	Poster
95.	Evaluation of ginger ( <i>Zingiber officinale</i> Rosc.) germplasms for its growth, yield and quality in New Alluvial Zone of West Bengal	L. James Singh, A. Pariari, S. Banik and U. Singha	309	Poster
96.	Physiological approach for studying the variation in mungbean genotypes for toleranceto pre-harvest sprouting	M. S. Ali Mondal, I. Samai, M. H. Islam,	310	Poster

		A. K. Pal and A. Das		
97.	Biochemical and bioinformatical characterization ftwo enzymes involved in lignin biosynthesisin <i>tossa</i> jute	S. Bandyopadhyay, P. Saha, A. Roy, S. Datta and M. N. Ali	312	Poster
98.	Infection and transmission of seed-borne pathogen	Shusrita Debnath, R. Mukherjee and M. K. Paira	313	Poster
99.	Integrated weed management strategies in jute crop	Shyamali Das, S. Mitra and A. Aich	314	Poster
100.	Applied mutagenesis to develop YVMV resistance in okra (Abelmoschus esculentus L. Moench)	S. Hazra, S. Gorai, A. Chattopadhyay, M. N. Ali, S. Jambhulkar and A. Maji	315	Poster
101.	Effect of Teflubenzuron 75 g/L + Alphacypermethrin 75 g/L 150 SC against fall army worm ( <i>Spodoptera frugiperda</i> ) in maize	Sourav Sen, L. C. Patel and H. Rahaman	316	Poster
102.	Control of post-harvest anthracnose and stem end rot disease of mango fruits ( <i>Mangifera indica</i> L.) by some yeast based bioformulations along with hot water treatments	Ankita Roy, M. Panda, D. Majhi, I. Chakrabarty, B. Panja and J. Saha	373	Poster
103.	Genetic evaluation and selection of sunflower hybrids ( <i>Helianthus annuus</i> L.) based on economic heterosis	Afridi Mondal, S. S. Lakshman, J. Datta and S. Mukherjee	374	Poster
104.	Physico-biochemical properties of a few aromatic rice landraces of the eastern India	T. Sarkar, T. Susmitha, D. D. Kadam, S. Banerjee, J. Datta, M. Ghosh and A. Bhattacharya	375	Poster
105.	In vitro evaluation of Antioxidants and Nutritional components of wild medicinal mushroom <i>Ganoderma</i> spp./ isolates from West Bengal	Amitava Mondal, G. Kiran and R. Sharma	376	Poster
106.	Occurrence and distribution of entomopathogenic nematodes from West Bengal and their pathogenicity against insect pest	Arka Samanta, K. Roy and A. Pramanik	377	Poster
107.	Study of genetic diversity of some wheat ( <i>Triticum aestivum</i> L.) genotypes by multivariate analysis	Balla Lohitha, A. Dutta and A. Maji	378	Poster
108.	Acaricidal resistance and activity of detoxifying enzymes in <i>Oligonychus coffeae</i> (Nietner) (Acari: Tetranychidae) on tea	Biswajit Patra, T. K. Hath and S. F. Alam	379	Poster
109.	Exploring the potential of phytochemicals by in silico method for controlling Xanthomonas campestris pv. campestris in Brassicaceae	Debjyoti Das, M. Bhattacharjee, A. S. Panja and N. Mandal	380	Poster
110.	Molecular identification of aphid species affecting cowpea (Vigna unguiculata)	Ibtesam Anjum, K. Singh, K. Roy and M. N Ali	381	Poster
111.	Performance of weed management practices on growth, yield and economics of green gram (Vigna radiata (L.) Wilczek)	K. Mishra, S. Mohanty, S. Choudhury and R. Begum	382	Poster
112.	Effect of crop establishment methods and weed management practices on growth and yield of transplanted rice ( <i>Oryza sativa</i> L.) under coastal and saline belt of West Bengal	M. Bauri and A. Mukherjee	383	Poster

113.	Biopriming and integrated management of major diseases of sesame ( <i>Sesamum indicum</i> L.) in Coastal Saline Zone of West Bengal, India	N. K. Adhikary, K. Ray, J. Tarafdar, A. Iqbal and R. Mallick	384	Poster
114.	Screening of mungbean [Vigna radiata (L.) Wilczek] genotypes against mungbean yellow mosaic virus (MYMV) under field condition	G. Parimala, S. Gorai, M. N. Ali, K. Roy and A. Maji	385	Poster
115.	Evaluation of genotypes and variation in grain filling characters under terminal heat stress in wheat [ <i>Triticum aestivum</i> L.]	Oksana Mandal, A. K. Pal and A. Maji	386	Poster
116.	Glucosinolates in mustard: A signalling component to biotic stress	P. S. Kishore, S. Dewanjee and N. Karmakar	387	Poster
117.	Identification of superior allele and development of gene based marker for DEP1 gene for rice yield improvement	Poulomi Sen and S. Bhattachryya	388	Poster
118.	Morpho-molecular evaluation of segregating lines of <i>Lathyrus</i> for low ODAP and resistance to downy mildew	Pratik Saha, S. Bandyopadhyay and M. N. Ali	389	Poster
119.	Impact of etoxazole on two-spotted red spider mite ( <i>Tetranychus urticae</i> Koch) and its natural enemies in brinjal ecosystem	Pritha Ray and K. Karmakar	390	Poster
120.	Chemical management of sheath rot disease complex in rice	Rini Pal and D. Mandal	391	Poster
121.	Cultivar-specific mono-phasic protocol development for micropropagation of indigenous potato and their genetic fidelity assessment	S. Bandyopadhyay, T. Subrahmanyeswari, S. Bhattacharyya and S. Gantait	392	Poster
122.	Combining ability study for yield traits in cucumber ( <i>Cucumis sativus</i> L.)	Shibashis Das, A. Chattopadhyay and M. K. Pandit	393	Poster
123.	Eco- friendly management of collar rot of chilli (Sclerotium rolfsii)	Soma Giri, U. Giri, U. Roy, B. Tudu and T. K. Maity	394	Poster
124.	Comparative efficacy of post-emergence herbicide mixes in weed management, yield intensification and economics in summer black gram ( <i>Vigna mungo</i> L. Hepper)	Srijani Maji, S. Mondal, P. Bandopadhyay, A. Banerjee and A. Das	395	Poster
125.	Elytral polymorphism of Cheilomenes sexmaculata (Fabricius), Harmonia octomaculata (Fabricius) and Coccinella septempunctata (Linnaeus) (Coccinellidae: Coleoptera)	T. Majumder and K. Roy	397	Oral 10
126.	Combining ability analysis for yield and its contributing traits in Bottle Gourd [Lagenaria siceraria (Molina) Standl.]	Abdulrazak A. M., M. K. Pandit, S. Kumar, P. B. Panigrahi, Bhagavati and S. Das	429	Poster
127.	Evaluation of some bio-rationals to mitigate the pest problems in grasspea ( <i>Lathyrus sativus</i> L.)	A. Banerjee, S. Maji and A. Das	430	Poster
128.	Enhancing food security and doubling farmers' income through adaptation of conservation agriculture in rice-based cropping systems in <i>Gangetic</i> inceptisol	A. Ghosh, D. Mondal, P. Bandyopadhyay and R. K. Ghosh	431	Poster

129.	Screening of some wheat ( <i>Triticum aestivum</i> L.) lines for yield and yield attributing traits grown under late sown condition in <i>Gangetic</i> plain of West Bengal	Anindita Mandal, A. Mandal, G. Parimala, S. Mukherjee and A.	432	Poster
130.	Crop parameters of groundnut ( <i>Arachis hypogaea</i> L.) as influenced by foliar application of boron and zinc	Maji  Ankam Shashank and S. Mondal	433	Poster
131.	Diversity assessment through microsatellite markers in cultivated finger millet [Eleusine coracana (L.) Gaertn.] genotypes	K. Patel, Arna Das, U.Patel and D. A. Patel	434	Poster
132.	Hybrid vigour and inbreeding depression for yield and yield attributing traits in bottle gourd (Lagenaria siceraria (Mol.) Standl.)	B. Chandramouli, R.V. S. K. Reddy, M. P. Rao, <b>Balakrishna</b> <b>B.</b> and K. Umakrishna	435	Poster
133.	Evaluation of pre and post emergence herbicides for chemical weed management in sesame	Bickram Panja, A. K. Dolai, S. Das, S. Pal and A. Laha	436	Poster
134.	Analysis of yield stability of brinjal landraces under normal and biotic stress environments	D. K. Murmu, T. Yarin, <b>Bimal Das</b> and A. Ali	437	Poster
135.	Degradation and persistence of rice herbicides and its impact on enzymatic activity in clay loam soil	C. Bharathi, P. M. Arthanari, S. Radhamani and P. Parasuraman	438	Poster
136.	Correlation and path analysis in rice genotypes for yield contributing traits	B. R. Chattar, T. J. Bhor, C. S. Shinde and A. A. Bhagat	439	Poster
137.	Character association studies among yield contributing traits for improving grain yield in sorghum (Sorghum bicolor L.)	P. R. Khandebharad, S. P. Pole, S. G. Dhawale, A. J. Salunke and A. P. Ghadage	440	Poster
138.	Weed dynamics and management studies under conservation tilled potato in <i>Gangetic</i> alluvium: A path to enhance food security and double farmers' income in India	Dibyendu Mondal, A. Ghosh, P. Bandyopadhyay and R. K. Ghosh	441	Poster
139.	Prevalence of rice yellow stem borer, Scirpophaga incertulas Walker population and extent of crop damage in relation to agro- ecological conditions at Hooghly, West Bengal during boro crop season	Eureka Mondal and K. Chakraborty	442	Poster
140.	Incidence and abundance of mustard aphid,  Lipaphis erisimi (Kalt.) in relation to agro- climatic conditions at Uttar Dinajpur, West Bengal	Goutam Basak and K. Chakraborty	443	Poster
141.	An evolutionary 'footprint' developed at vascular sap in million years' of plant-aphid interaction biology	A. M. Devi and H. A. Mondal	444	Oral 11
142.	Determination of antagonistic effect of bioagents on seed mycoflora of okra (Abelmoschus esculenta) and effect on seed health	M. I. Devi, N. Pongener and P. S. Nath	445	Poster
143.	Studies on gamma rays induced mutation in mandarin orange	Jyoti and E. P. Ningot	446	Poster
144.	Morphological and <i>in vitro</i> efficacy studies on plant extracts and fungicides against	Ujjwal Sarkar and R. Sharma	447	Poster

	Alternaria spp. causing early blight disease of potato, tomato and purple blotch disease in onion			
145.	Genetic variability studies in yard long bean (Vigna ungiculata (L.) Walp. ssp. sesquipedalis Verdc.)	Pratyusha Bhagavati P., S. Das and G. Sinha	449	Poster
146.	Genetic evaluation and screening of diverse wheat ( <i>Triticumaestivum</i> L.) genotypes for spot blotch resistance	Pritam Roy, S. Gorai, W. Ul-Hasan, N. Ali, S. Mukherjee and A. Maji	451	Poster
147.	Heterosis and combining ability study for fibre yield in tossa jute ( <i>Corchorus olitorius</i> L.)	Ritesh Chanda, S. Hazari, S. Bhattacharya, A. Roy (Aich), A. Das and G. S. Mandal	452	Poster
148.	Effect of tillage and weed management practices on direct seeded rice ( <i>Oryza sativa</i> L.) under coastal and saline belt of West Bengal, India	Saikat Dey and A. Mukherjee	453	Poster
149.	Stability analysis for pod yield and its contributing component traits in groundnut (Arachis hypogaea L.)	J. Q. Pathan, M.V. Dhuppe, A. J. Salunke, C. S. Shinde and K. B. Gaiwal	454	Poster
150.	Identifications of brinjal genotypes for mosaic disease tolerance in the <i>Gangetic</i> plains of West Bengal	Sanjay Bairagi, P. Choudhuri, A. K. Mandal and A. Chattopadhyay	455	Oral 12
151.	Morphological and molecular characterization of spotblotch disease resistance in diverse genotypes of wheat ( <i>Triticum aestivum</i> L.)	Shouvik Gorai, W. U. Hasan, G. Parimala, P. Roy and A. Maji	457	Poster
152.	Effectiveness of plant growth promoting rhizobacteria on growth and reduction of root-knot nematode infestation in brinjal	Sudeshna Sarkar, J. K. Mahalik, R. Bhol and B. K. Dash	458	Poster
153.	Silicon amendment in rice for enhanced plant defense against yellow stem borer, Scirpophaga incertulas (Walker) and increased grain yield	Surabhika Panda and J. J. Pastagia	459	Oral 13
154.	Persistence, dissipation dynamics and end- point residue estimation of fomesafen + quizalofop-ethyl in soybean agro-ecosystem	Sushovan Das, D. Singha, A. Kundu, S. Mondal, A. Kundu, A. Bhattacharyya and S. Roy	460	Poster
155.	Studies on the comparative biology of Spodoptera frugiperda (J. E. Smith) and Spodoptera litura (Fab.) on different hosts	T. K. Hembram, N. Chaudhuri, S. K. Senapati, P. M. Bhattacharya, A. Ghosh and T. Dhar	461	Poster
156.	Influence of integrated nutrient management along with foliar spray of zinc in nano form on soil fertility, nutrients uptake and productivity of winter rice	Poulomi Nandy and S. K. Das	462	Poster
157.	Weed management studies in white jute (Corchorus capsularis)	Sarika Jena	463	Poster
158.	Estimation of heterosis and combining ability in bitter gourd (Momordica charantia L.)	Triveni D., Dorajee Rao A.V.D and	514	Poster

	using line x tester analysis	Balakrishna B.		
159.	Weed management in sweet corn under conservation agriculture	Anusmita Saha, H. K. Sahoo, R. Dash and T. Das	523	Poster
160.	'Tembotrione' – a new generation herbicide for integrated weed management in conservation agriculture based maize ( <i>Zea mays</i> L.) inmaize -wheat -mungbean cropping System	Sougata Roy, K. Shekhawat, S. Bag, T. Das, B. Das, A. Barman and P. Saha	525	Poster
161.	Biology and distribution of <i>Bemisia tabaci</i> (Genn.) (Aleyrodidae: Hemiptera) on brinjal	Samanwita Ghosh and B. K. Das	528	Poster
162.	Comparative efficacy of some insecticides against thrips and mites of chilli ( <i>Capsicum annum</i> L.) in <i>Gangetic</i> plains of West Bengal	Anirban Sarkar, N. Maiti, S. Kairy and P. Nandi	531	Poster
163.	Evaluation of yield of okra [Abelmoschus esculentus (L.) Moench] with associated traits using correlation analysis	A. K. Zate, S. P. Pole, A. J. Salunke, V. A. Kulkarni and J. Q. Pathan	532	Poster
164.	Genetic diversity assessment and synthetic seed development in potato	Santanu Nandi, A. Mukherjee, A. Das, S. Sarkar, S. Gantait and S. Bhattacharyya	546	Poster
165.	Evaluation of seed inoculation, post- emergence herbicide mixes and foliar nutrition on black gram ( <i>Vigna mungo</i> L.) in the <i>Gangetic</i> plains of West Bengal	Preetam Biswas, S. Maji, A. Gupta, S. Mondal and P. Bandopadhyay	547	Poster

Theme-E: Role of farm mechanization, IT, bioinformatics, postharvest technology, big data management in agriculture, livestock farming, fisheries, sericulture, apiculture etc.

Sl No.	Title	Author	Abstract No.	MOP
1.	Potentialities for natural farming	Kapila G Prematilake	471	PL
2.	Effects of pesticide and heavy metal toxicants on fish and human health	Binay Kumar Chakraborty	472	PL
3.	Livestock production and productivity in Indian context	Nilotpal Ghosh	527	PL
4.	Transforming sustainable rice-based agri-food systems: Recent innovations and interventions	Sudhanshu Singh	533	PL
5.	Implementing of ecological restoration and achieving ecosystem services in traditional way: A case study	Hilloljyoti Singha	468	LL
6.	Hunger-poverty-silence: The lethal combination that keeps adding entropy to agrarian ecosystem		534	LL
7.	Technology assessment of pulses and oilseeds in eastern India over last decade	Adrita Dam and Soumitra Chatterjee	15	Oral 1
8.	Forecasting onion price volatility in the presence of long memory using the FIGARCH model	Chiranjit Mazumder, B. Ghose, P. Pandit and P. K. Sahu	25	Oral 2
9.	A study on impact of climate change on wheat production in Kurukshetra district of Haryana	Chetna, M. Devi, K. Karakaya, C. Fatih and	28	Poster

	and development of forecast models	P. Mishra		
10.	Time series analysis and forecasting for major wheat producing states in India using ARIMA and Holt's linear trend method	Suman, P. Godara, S. Hussain, P. Mishra and S. Ray	29	Poster
11.	Factors influencing female participation in agriculture in west Bengal	Prity Maji, B. Bhattacharyya and M. Saha	32	Poster
12.	Role of artificial intelligence in agriculture: current status and future prospects	Rupam Rani, A. Bahadur Singh, S. Akhtar, M. Kumar and R. B. Verma	36	Poster
13.	Estimation of raindrop size distribution and kinetic energy of orographic rainfall using one minute resolution spectrum data, Western Himalayas, India: a predictive modeling approach for soil erosion study	Sadikul Islam, U. Mandal, G. Kumar, A. Dheeraj, M. Madhu and M. Muruganandam	37	Poster
14.	Forecasting cash crop production with statistical and neural network model	Al Khatib, B. Kumari, T. Biswas, A. C. Nuta and P. Mishra	44	Poster
15.	Developing survey methodology to generate primary level data on female agricultural population in selected districts of West Bengal	Sudeshna Roy and B. Bhattacharyya	47	Poster
16.	Microwave - convective hot air drying of carrot slices	Vaidehi Verma and A. Karmakar	49	Poster
17.	Predictive analysis of agriculture commodity price using ARIMA and LSTM	Gowthaman T, B. Bhattacharrya and Sathees Kumar K	52	Poster
18.	Market cointegration and price transmission in major small cardamom markets of India	Adarsh V S and P. K. Sahu	75	Poster
19.	A review on insect meal as alternative feed ingredient in aquaculture	H. Dhara, P. Bera, S. K. Sau, T. K. Ghosh, S. Barman and A. Pradhan	76	Poster
20.	Shelf life of pengba (Osteobrama belangeri) under iced and frozen storage	R. Rubysana, K. C. Dora, S. Chowdhury, P. Murmu, S. Nath and Sayani Roy	79	Poster
21.	Preparation of tea from dry hibiscus powder: A unique source of antioxidants and subsequent storage study	Lalita Mandi and S. Chakrabarty (Das)	84	Poster
22.	Diffusion pathway of mechanical rice transplanter through social network analysis in selected villages of West Bengal	Shehanaz Alam, S. Mondal and D. Basu	88	Poster
23.	Measuring instability in production of major pulses in India	Sh. Herojit Singh, P. K. Sahu, K. Sinha, S. Dey and L. Narsimhaia	98	Oral 3
24.	Development of a mechatronics-based hill-drop seed metering mechanism for the precise sowing of pre-germinated paddy seeds	Sujit Hensh and H. Raheman	104	Poster
25.	An approach towards exotic carp (Cyprinus carpio, Hypophthalmichthys molitrix and Ctenopharyngodon idella) identifation using deep learning techniques	Roopsia Chakraborty, S. Behera and N. Das	124	Poster
26.	Flood vulnerability mapping of Dakshin Dinajpur using remote sensing and GIS	Shramana Talapatra and M. K. Nanda	126	Poster

27.	Studies on leaf foraging sources of leaf-cutter bees (Megachilidae; Hymenoptera) in West Bengal, India: implications for conservation	Kaushik Pramanik and S. Jha	130	Poster
28.	Nest architecture of the stingless bee  Tetragonula bengalensis (Cameron) (Hymenoptera: Apidae: Meliponini)	Amit Layek, S. Jha and P. Debnath	134	Poster
29.	Block-wise potato crop acreage estimation of Purba Barddhaman, West Bengal using Sentinel-2 satellite data	Debolina Sarkar, D. Mondal, M. Mondal and M. K. Nanda	182	Oral 4
30.	Accuracy assessment among different machine learning algorithms for estimating <i>boro</i> rice growing areas of Haringhata CD Block of Nadia district	Aloy Adak, D. Sarkar, M. K. Nanda and A. Ghosh	183	Oral 5
31.	Analysis of the use of video-conferencing platforms in the learning process by the research scholars	Sampriti Guha, H. Jana, D. Basu, S. Priyadarsinee and A. Kundu	185	Poster
32.	A review on smart farming: the transformation of agriculture from a labour-intensive to a technology-native sector	Anjan Patra, R. Mallick, A. Mahanty, K. Sardar, S. Mondal, R. Ghosh, S. Kar and S. Chakraborty	186	Poster
33.	Agricultural waste management: a comprehensive review	Krishnapada Sardar, R. Mallick, S. Mondal, R. Ghosh, A. Patra, A. Mahanty, S. Kar and S. Chakraborty	189	Poster
34.	Understanding agricultural insurance service system through stakeholders' perspective	Swadhin Priyadarsinee, D. Basu, A. Ghosh and S. Guha	200	Poster
35.	Soil nutrient mapping and spatial variability of soil nutrients in Dhamtari district of Chhattisgarh with machine learning technique	Shayonika Bagchi	201	Poster
36.	A comparison of ARIMA, SVR, TDNN and Hybrid Models for predicting sugarcane production and yield in Tamil Nadu	Nevashini N. and B. Bhattacharyya	205	Poster
37.	Application of Sentinel-1 SAR data for inundation analysis of Indian Sundarbans	Momsona Mondal, D. Sarkar, M. K. Nanda and A. Ghosh	206	Poster
38.	CNN_FunBAR: deep learning technique for fungi taxonomic classification based on DNA barcode sequences	Ritwika Das, A. Rai and D. C. Mishra	245	Oral 6
39.	Integration of indigenous traditional knowledge with modern knowledge system for hill stream fisheries and agriculture	Ritika Karjee, S. Sau, S. S. Dana and M. Ray Sarkar	250	Poster
40.	A study on socio-economic profile and knowledge level of farmers towards Kisan Call Center in Manachanallur block of Tiruchirappalli district in Tamil Nadu	Manobharathi K, Gowthaman T and Periyar Ramasamy D	267	Poster
41.	Bioinformatic analysis of tomato calmodulin proteins	Gopika Jawahar and J. Banerjee	280	Poster
42.	A statistical account of potato production in India: its growth and trend	Mrittika Das, B. Sarkar, B. Ghosh, P. Pandit, M. Roy and P. K. Sahu	318	Poster
43.	Forecasting of <i>boro</i> rice yield using multiple linear regression and artificial neural network	Aishi Mukherjee, A. Mukherjee, S. Banerjee	319	Poster

	technique for New Alluvial Zone of West Bengal	and M. K. Naskar		
44.	Extraction of bio-pigment from three blue flowering landscape ornamentals	Dipayan Sarkar, A. Mandal Khan, I. Sarkar, S. Maitra and P. K. Paul	321	Poster
45.	Assessing the climate-yield relationship of <i>boro</i> and <i>kharif</i> rice using CMIP5 GCM simulation over different districts of <i>Gangetic</i> West Bengal	Nasrin Parveen and L. Das	322	Poster
46.	Imaging and AI-ML based screening of lentil genotypes	Ankita Chakraborty, J. Banerjee and A. Das	323	Poster
47.	Changing trend of evapotranspirative fraction of net energy gain over Rengali command areas of Dhenkanal district, Odisha	S. S. Priyadarsini, M. Mondal, D. Sarkar and M. K. Nanda	328	Poster
48.	Assessing irrigation water requirement of jute grown in New Alluvial Zone of West Bengal under future climate scenario	Abhilashaa Das and S. Banerjee	329	Poster
49.	Fitting probability distributions and statistical trend analysis of rainfall over Lower <i>Gangetic</i> Alluvial Agro-climatic Zone of West Bengal	Bhawishya Pradhan, Gowthaman T and B. Bhattacharyya	331	Poster
50.	Applications of artificial intelligence for identifying and mitigating agricultural hazards (floods and droughts)	Soumik Banerjee and G. Banerjee	332	Poster
51.	Prediction map of soil organic carbon created by an advanced geostatistical technique using remote sensing and terrain data	Santanu Mallik and N. Paul	334	Oral 7
52.	Geographically weighted regression based model - calibration approach under two stage sampling design	B. Saha, <b>Ankur Biswas</b> , T. Ahmad, P. M. Sahoo, K. Aditya and N. C. Paul	335	Oral 8
53.	Post-harvest assessment of physiochemical properties and storage behaviour of arrowroot ( <i>Maranta arundinaceae</i> ) grown in the alluvial soil of West Bengal	Subhadip Chowdhury, S. Mitra, S. Mondal and S. Subba	340	Poster
54.	Mechanization of groundnut cultivation for small holder farming community	Sunil Kumar and S. Karmakar	341	Poster
55.	Comparison of EMD based modelling techniques for improved agricultural price forecasting	Bikramjeet Ghose, P. Pandit, C. Mazumder, K. Sinha and P. K. Sahu	342	Poster
56.	A discussion on the present status of Krishak Bazaars in Cooch Behar district of West Bengal, India	Anmol Giri, S. C. Sarker and A. Sarkar	467	Poster
57.	Waste valorization: catalyst and traditional soda from post harvested agricultural waste	Biswajit Nath, S. Basumatary, B. Basumatary and S. Brahma	469	Oral 9
58.	Agriculture waste-based nanostructure for sustainable development	Manasi Buzar Baruah	470	Oral 10
59.	Modeling of a solar thermal network attached to a vapor absorption refrigeration system for on- farm cooling of fresh produce	Boris Huirem and P. K. Sahoo	473	Poster
60.	Incidence of drought in relation to rainfed rice production in Nadia, West Bengal	Gourabanwita Banerjee, A. Ghosh, S. Roy, S. Banerjee and A. Majumder	474	Poster

61.	Socio-economic conditions and food security among beedi workers in rural Murshidabad, West Bengal: A comprehensive analysis	Imran Sk and Md. H. Ali	475	Poster
62.	Study artificial ripening treatment on chilling tolerance of mango 'cat chu' at postharvest	Nguyen Thanh Tung, B. Karmakar, <sup>1</sup> k. Rathod and S. Mitra	477	Poster
63.	The impact of cyclone 'Yaas' on the Sundarban forest ecosystem: A multi-temporal sentinel imagery analysis	Piyali Sarkar, S. Banerjee, S. Saha and D. Paul	478	Poster
64.	Selection of best performing climate models from 37-CMIP6 GCMs over Indian Sundarban for projecting bias corrected future rainfall scenarios	Ratul Roy Choudhury, L. Das and J. Akhter	479	Oral 11
65.	Possibilities of commercial utilization of waste flowers	Sushmita Rana and S. Chakrabarty (Das)	480	Poster
66.	Remote sensing and gis application for assessing root-knotnematode infestation in vegetable crops- a brief review	Ritoban Pandit, S. Sarkar and M. K. Pandit	530	Poster
67.	Climate smart agriculture (CSA) in India: A possible solution to answer climate change	Tarakeshwar Senapati	538	Poster
68.	Assessing bottlenecks in the rice-straw value chains and markets in Punjab region	Suryakanta Khandai, M. K. Narang, D. S. Parihar, V. Kumar, M. K. Bhowmick and S. Singh	548	Oral 12