Pearl Millet News

ICAR - All India Coordinated Research Project on Pearl Millet
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From Coordinator's Desk.....

Pearl millet [*Pennisetum glaucum* (L.) R. Br.] is more important among all other millets and is the fourth most widely cultivated food crop after rice, wheat and maize in India. It can grow rapidly and needs fewer inputs and has high photosynthetic efficiency, good and balanced nutritional profile, tolerant to adverse climatic conditions and biotic stresses. It is mainly grown under the most adverse agro-climatic conditions where other staple cereal crops like rice and wheat are not able to survive. It is a climate-resilient crop and can very well grow in the harshest conditions including low soil fertility, high soil pH, high soil Al^{3+} saturation, low soil moisture, high temperature, high soil salinity and scanty rainfall. Thus, it is very important in mitigating the adverse effects of climate change as well as facilitating income and food security among farming communities of arid regions. During 2024-25, pearl millet was grown in 6.83 million ha with productivity of 1488 kg/ha and production estimate of 9.49 million tones (2st advanced estimate of 2024-25, Department of Agriculture & Farmers Welfare (DA&FW, Ministry of Agriculture & Farmers Welfare, GoI, India). The major pearl millet growing states are Rajasthan, Maharashtra, Uttar Pradesh, Gujrat and Haryana contributing to 90% of total production in the country. Rajasthan contributes nearly 45% followed by Uttar Pradesh (19%), Haryana (10%), Gujarat (9%), Madhya Pradesh (7%), Maharashtra (6%), Karnataka (3%) and Tamil Nadu (2%). Most of pearl millet in India is grown in rainy (*kharif*) season (June/July-September/October). Pearl millet is also cultivated during summer season (February-May) in parts of Gujarat, Rajasthan and Uttar Pradesh; and during the post-rainy (*rabi*) season (November-February) at a small scale in Maharashtra and Gujarat. Globally, it is 6th major cereal crop followed by maize, rice, wheat, barley and sorghum and is being cultivated over 30 million ha worldwide, with the major crop area in Africa (>18 million ha) and Asia (>10 million ha). It is also used in industries such as - alcohol and fuel, starch and processed food sectors.

Pearl millet is highly nutritious than other staple crops such as wheat, rice, maize and sorghum. It is rich in carbohydrates, proteins, fats, fibres, resistant starch, vitamins, antioxidants, essential micronutrients such as iron and zinc and has a more balanced essential amino acid profile than maize or sorghum. It contains high amount of omega-3 and omega-6 fatty acids (polyunsaturated fatty acids) which is considered highly useful for heart and brain. 100 grams of bajra contains- energy 363 kcal, moisture 12%, protein 11.8 g, fat 4.8 g, mineral 2 g, fiber 2.3 g, carbohydrate 67 g, calcium 42 mg, phosphorus 242 mg and iron 11 mg (Kumar et al., 2020). It offers gluten-free grains with high and better protein in terms of quality and quantity making it

ideal for people with gluten allergy. It is the only cereal which retains alkaline nature even after cooking with a low glycemic index thus making it a diabetic friendly food. It acts as a probiotic food for microflora in our inner ecosystem and hydrates our colon to keep us from being constipated. Its consumption has been associated with protection against certain types of cancer and cardiovascular diseases. It has high proportions of slowly digestible starch (SDS) and resistant starch (RS) which contribute to low glycemic index (GI) and is much sought after in the recent times of transforming diets, food habits and the food industry. Hence, pearl millet is gaining lot of popularity among health conscious people all over the world. It can play a vital role in overcoming malnutrition to ensure food and nutritional security. Due to its excellent nutritional properties, pearl millet is designated as ***nutri-cereal*** (Gazette of India, No. 133 dtd 13th April, 2018) for production, consumption, trade and was included in Public Distribution System (PDS). India's hon'ble prime minister has elevated the status of pearl millet and given it the name of '***Shree Anna***' due to its nutritional superiority over all other grains and climate resilience and providing sustainability to the farmers and also declared IIMR, Hyderabad as **"*Global Centre of Excellence for Millets*".**

Apart from the conductance of mandated coordinated multi location trials and evaluation of test entries, ICAR- AICRP on Pearl millet is committed to pearl millet improvement through research, technology generation and transfer. Till date, a total of 212 hybrids and 67 varieties were identified and released for cultivation in different agro ecological zones of the country through AICRP on Pearl millet. A number of production and protection technologies specific to different agro-ecological regions which will prove useful in enhancing the productivity of improved cultivars to commercial farming scales and increase the profitability of pearl millet growers were developed through this system.

Along with yield improvement, focus on the nutritional improvement was also given in Pearl millet. *Pearl millet is the first crop in the world to introduce bench mark levels for Fe (42 ppm) and Zn (32 ppm) in cultivar promotion and release since 2018 ensuring nutritional security in the country falling in line with the vision of nutrionallly secure India.* Since then, 61 hybrids/varieties were developed as micronutrient rich pearl millet cultivars.

Development of high yielding, dual purpose disease resistant cultivars for low rainfall areas i.e. A_1 zone is also given priority for increasing pearl millet productivity at national level. Along with development of sound extension support for popularization of these technologies and products; spread of pearl millet cultivation in nontraditional areas and pearl millet hybrid seed production in North - Western part of the country is the need of the hour. Addressing these changes will certainly add to the national efforts of doubling the farmer's income.

59th Annual Group Meeting of ICAR-AICRP on Pearl Millet

As part of combined Annual Group Meeting, the centre-wise scientific work plan audit was organized on 28th May, 2024 while technical programme formulation meeting was conducted on 29th May, 2024 for pearl millet. The combined 59th Annual Group Meeting of ICAR-AICRP on Pearl millet was held along with AICRP on Sorghum and Small Millets. This meeting was held at RARS, Acharya NG Ranga Agricultural University, Tirupati in collaboration with ICAR-AICRP on Pearl millet and ICAR-AICRP on Sorghum and millets, ICAR-Indian Institute of Millets Research (IIMR), Hyderabad from 27-28th June, 2024. About 200 researchers from different pearl millet, sorghum and small millets centres, voluntary centres, private sector, NGOs, ICRISAT and other collaborating institutes participated in the group meeting.

The session was graced by Dr. T.R. Sharma, DDG (CS), ICAR, the chief guest, Dr. R. Sarada Jayalakshmi Devi, the distinguished guest, Dr. S.K. Pradhan, the guest of honour, Dr. C. Tara Satyavathi, Director-IIMR and PC- Pearl millet, Dr. R. Madhusudhana, PC-Sorghum and millets, Dr. P.V. Satyanarayana Director of Research-ANGRAU and Dr. V. Sumathi, Associate Director of Research. Dr. C. Tara Satyavathi presented the research highlights of pearl millet. She mentioned that the productivity in pearl millet has reached 1447 kg/ha. Ten hybrids and one variety have been notified at national as well as state level. Around 125 new and 35 released hybrids have been tested in the co-ordinated trials.

Dr. T.R. Sharma, DDG (CS), ICAR in his inaugural address urged for overall improvement and popularisation of millets. He mentioned that pearl millet is a major millet crop and well defined set of genes should be developed for exploitation in breeding programs. Apomixis should be used for producing true breeding hybrids. Benchmark levels of Fe and Zn for cultivar release are implemented in pearl millet and must be extended to other millets. Germplasm with low

rancidity must be identified and genome editing approaches should be followed for addressing rancidity using lipoxogenase genes in pearl millet. The 20 to 30% yield gap observed in FLDs must be filled by agronomic approaches. The virulence studies on races and biotypes, genetic variability in pathogens or insects must be studied apart from the breeding lines. Emphasis should be given to basic studies apart from applied aspects.

Dr. S.K. Pradhan in his remarks mentioned that though food grain sufficiency is attained, nutritional sufficiency is yet to be achieved for which millets are the most viable option. Productivity must be increased in millets to make their cultivation profitable. By 2047, 20 million tons of food grains are required for domestic market and 40 million tons are required for export markets. This must be targeted in the coming 15 years. Genetic mechanisms of nutritional traits must be studied and improved through advanced phenomics and genomics. Speed breeding protocols has to be standardized in crops.

Dr. Sarada Jayalakshmi Devi, VC, ANGRAU reiterated that introduction of millets in Public Distribution System would enhance millets production and consumption. Incentives need to be provided to millet farmers.

New Releases and Notification of Hybrids and Varieties of Pearl Millet During 2024-25

- Twelve hybrids and one variety were notified and released for cultivation in various agro-ecologies of the country during 2024-25:

S. No.	Hybrid/ Variety	Notification Number	Notification date	Area of adaptation
1	Pusa 1801 (MH 2417)	S.O. 4388 (E)	08.10.2024	Delhi
2	Proagro-9001 (MH 2440)	S.O. 4388 (E)	08.10.2024	Rajasthan & Haryana
3	Super 99 (MH 2164)	S.O. 4388 (E)	08.10.2024	Rajasthan
4	BRBH-1 (BRBH-16620)	S.O. 4388 (E)	08.10.2024	Karnataka
5	GHB 538 Imp (MH 2561) Maru Sona	S.O.1560 (E)	26.03.2024	Drier part of Rajasthan & Haryana
6	PBH-1625 (Palem Sajja-1625) (MH 2323)	S.O.1560 (E)	26.03.2024	Telangana
7	GHB 1351 Banas Nayan (MSH 370)	S.O.1560 (E)	26.03.2024	Haryana
8	PB 1879 (MSH 371) PA 9898	S.O.1560 (E)	26.03.2024	Summer growing areas of Gujarat
9	HBH 191294 (MH 2577) HT 4252	S.O.1560 (E)	26.03.2024	Summer growing areas of Gujarat, Rajasthan, UP Maharashtra and Tamil Nadu
10	86M22 (MSH 377)	S.O.1560 (E)	26.03.2024	Rajasthan, Gujarat, Haryana, Madhya Pradesh and Delhi
11	GHB 1294 (MH 2555) Maru Moti	S.O.1560 (E)	26.03.2024	Summer growing areas of Gujarat, Rajasthan, UP Maharashtra and Tamil Nadu
12	MPMH 42 (MH 2553) Shree Anna Bajri 42	S.O.1560 (E)	26.03.2024	Drier parts of Rajasthan, Gujarat and Haryana
13	PCB 167 (GBL 5)	S.O.4388 (E)	08.10.2024	Punjab

MoUs for Promotions of the Released Pearl Millet Hybrids

S. No.	Name of University	Name of Company	Date	Name of pearl millet hybrid / variety
1.	SKN Agriculture University, Jobner	Super Seeds Pvt. Ltd. Hisar, Haryana	29th October, 2024	RHB-234
2.	CCS HAU, Hisar	Nandi Seeds Pvt. Ltd. Gujarat	30th January, 2024	HHB 67 Improved 2
		M/s. Sampoorna Seeds Pvt. Ltd., Kurnool, Andhra Pradesh	28th October, 2024	
		Murlidhar Seeds Corporation, Hyderabad and Mahankaleshwar Agritech Pvt. Ltd., Hyderabad	21st January, 2025	

Trainings / Workshops / Seminars / Conferences Organized

- QRT cluster meeting was held at PC Unit, ICAR-AICRP on Pearl millet, Jodhpur on 28th August, 2024 where six centers of A_1 and A zones of pearl millet presented their progress report.

- PC Unit, ICAR-AICRP on Pearl millet, Jodhpur organized a training-cum-awareness programme on PPV & FR Act and DUS testing in pearl millet on 26th September, 2024. The programme was attended by the farmers of Barmer, Jodhpur and Jaisalmer district and scientific staff of Agriculture University, Jodhpur.

- ICAR-AICRP on Pearl Millet, ARS, ANGRAU, Ananthapuramu organized two training programs on "Millets production technology and marketing strategies" at ARS, Kadiri in association with DAATTC, Puttaparthi and "Pearl millet cultivation under SCSP" on 11th September, 2024 where 40 SC farmers of Ananthapuramu district were distributed inputs (sprayers and fertilizers)..

- Department of Plant Breeding and Genetics, PAU, Ludhiana in association with Department of Community Medicine and School of Public Health, PGIMER Chandigarh organized millet awareness session under the project 'MERA' for the promotion of millets in Punjab State on 7th November, 2024 and 'Millet Trivia-2024' on 21st August, 2024 and a training on "Field experimentation and basic molecular techniques in pearl millet breeding" for skill enhancement of B.Sc. Hons. (Ag.) final year students for six months during July, 2024 to December, 2024.

- ICAR- AICRP on Pearl millet, RVSKVV, Gwalior organized two training programmes under TSP during 4-5th March, 2025 at Janjatiya Adhyayan and Vikas Centre, KVK, Gwalior to enhance the life style of tribal farmers through murgipalan and poshan aahar through poshan vatika subject where 65 farmers were benefitted.

- ICAR-AICRP on Pearl millet, NARP, Aurangabad conducted 16 training programs during the year 2024-25 on various topics including trainings on "Package of practices, varietal improvement-based cropping system, pest and disease management of pearl millet and seed production in pearl millet".

Field Days/Kisan Melas

- PC Unit, ICAR-AICRP on Pearl millet, Jodhpur participated and demonstrated various pearl millet hybrids/varieties and technology to the farmers during Shree anna kisan mela-2025 organized by RRS Pearl millet, Gudamalani on 16th February, 2025 and kisan mela organized at Agriculture University, Jodhpur during 2nd -4th March, 2025.

- PC Unit, ICAR-AICRP on Pearl millet, Jodhpur demonstrated different pearl millet techniques & technologies to farmers of Chatarpur, Madhya Pradesh on 9th December, 2024 and farmers of Dhar, Madhya Pradesh on 13th February, 2025 during their visit under MP state millet mission scheme.

- PC Unit, ICAR-AICRP on Pearl millet, Jodhpur demonstrated latest released hybrids/varieties technologies related to Pearl millet to farmers of Barmer, Rajasthan under integrated rural livelihood scheme of AU, Jodhpur at experimental farm of PC Unit, ICAR-AICRP on Pearl millet, Jodhpur on 26th September, 2024.

- ICAR-AICRP on Pearl millet, Vijayapur, Karnataka organized a field day on "Recent varieties/hybrids in pearl millet, improved agronomic practices, control of pests and diseases" at Kalgurki Village, Tq. Vijayapur, Dist. Vijayapur under pearl millet scheme on 12th September, 2024.

- ICAR-AICRP on Pearl millet, Vijayapur participated in two kisan melas at University of Agricultural Sciences, Dharwad from 21st-24th September, 2024 and at Vijayapur from 11-13th January, 2025 and demonstrated recent pearl millet varieties and improved agronomic practices in the exhibition.

- ICAR-AICRP on Pearl millet, CCS HAU, Hisar participated in university level farm mela during during 17-18th March, 2024 and 16-17th September, 2024. More than 200,000 farmers participated in these events and thousands of farmers were apprised of varietal, production technologies and plant protection aspects of pearl millet crop.

- Pearl Millet Research Station, JAU, Jamnagar participated in 2 kisan melas at Department of Agriculture and Farmers Welfare, GoG, Gandhinagar during 6-7th December, 2024 and Umiyadham, Sidsar, Jam Jodhpur tahuka of Jamnagar district, Gujarat during 25-29th December, 2024. They delivered lecture on value addition in millet crops (shree anna) and arranged the technology exhibition stall in these events.

- ICAR-AICRP on Pearl millet, Bajra Research Scheme, Dhule organized a farmers rally on "Summer bajra cultivation and importance of bajra in daily diet" under ICAR-TSP program on 3rd January, 2025 at Sagali, Tal. NAVAPUR Dist, Nandurbar.

- ICAR-AICRP on Pearl millet, PAU, Ludhiana organized a field day at RRS, Abohar to popularize the millets on 21st March, 2024.

- ICAR-IARI, New Delhi organized visits of 40 farmers from Mirzapur, UP on 14th August, 2024 and 30 farmers from Gurugram on 5th September, 2024 and demonstrated them about latest hybirds and technologies of pearl millet.

- ICAR- AICRP on Pearl millet, RVSKVV Gwalior organized visit for tribal farmers of 5 villages- Ghatigaon, Banvarpura, Barkheda, Girwaipura and Nayapura at Krishi mela at Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya, Gwalior to provide exposure and knowledge about latest technologies and different agricultural activities being carried out at national level on 24th February, 2025.

- ICAR-AICRP on Pearl millet, ARS, ANGRAU, Ananthapuramu attended kisan mela at KVK, Bananvasi on 20th August, 2024 and demonstrated millets production technology to the farmers.

- ICAR-AICRP on Pearl millet, TNAU, Coimbatore exhibited improved varieties and technology on millets at Regional Agricultural Fair 2025 held at KVK and Regional Research Station, Virudhunagar, Tamil Nadu during 4- 6th January, 2025.

- ICAR-AICRP on Pearl millet, NARP, Aurangabad organized a field day on pearl millet at Sudamwadi Tq. Vaijapur Dist. Chh., Sambhajinagar on 4th September, 2024 and guided the farmers on package of practices of pearl millet.

- ICAR-AICRP on Pearl millet, NARP, Aurangabad participated and demonstrated farmers package of practices, crop management, varietal profile of pearl millet during 4 kisan melas at VNMKV, Parbhani on 18th May, 2024; at Pimpalgaon by Krishi Vigyan Kendra, MGM. Chh. Sambhainagar on 5th June, 2024; at State level agricultural technology exhibition during 22nd -24th August, 2024; Farmer Scientists Forum at Badnapur on 20th September, 2024.

Appointments/Retirements

- Dr. L. Madhavilatha, Principal Scientist (Plant Breeding) was appointed in the existing sanctioned scientist post of AICRP on Pearl Millet, ARS, ANGRAU, Ananthapuramu w.e.f. 16th March, 2024.

- Dr. P.S. Shekhawat, Professor (Agronomy), ICAR-AICRP on Pearl millet, SKRAU, Bikaner superannuated on 31st December, 2024 and Dr. A.S. Godara was given the charge of Agronomist, ICAR-AICRP on Pearl Millet, SKRAU, Bikaner w.e.f. 10th January, 2025.

- Dr. P.C. Gupta, Plant Breeder, ICAR-AICRP on Pearl millet, SKRAU, Bikaner was appointed as incharge of ICAR-AICRP on Pearl Millet at Bikaner w.e.f. 31.12.2024.

- Dr. R.S. Choudary, Associate Professor (Agronomy) was appointed at PC Unit, Jodhpur in place of Dr. Moolram Associate Professor (Agronomy) w.e.f. 7th August, 2024.

- Dr. Bhavya Mishra, Assistant Professor (Plant Pathology) was given charge of Plant Pathologist w.e.f. 31st July, 2024 and Dr. Birbal Bairwa, Assistant Professor (Entomology) was given charge of Entomologist w.e.f. 31st January, 2025 at ICAR-AICRP on Pearl millet, RARI, Durgapura.

Trainings/Workshops/Seminars/Conferences Attended

Trainings

S. No.	Name of Scientist	Title	Organized By	Duration
Trainings				
1.	Dr. B.K. Athoni (Vijayapur)	Application of proteomics in plant research	ICAR-DRMR, Bharatpur	20-29th January, 2025
2.	Dr. Sadhana R Babar (Vijayapur)	Advances in land and water resources management for climate resilient rainfed agriculture	ICAR-CRIDA, Hyderabad	1st -10th February, 2025
3.	Dr. L. Madhavilatha (ANGRAU, Ananthapuramu)	Millets, local crops cultivation, production and their innovative processing technologies to farmers	ICAR-IIMR Hyderabad, ANGRAU, AP, NABARD, Guntur, DOA, Bapatla Education Society, SEARCH and SARID at Ramanappapalem, Guntur	16th March, 2024
4.	Dr. I. Johnson (TNAU, Coimbatore)	Advanced certification in data science and artificial intelligence	IIT, Madras	16th September 2024-31st May, 2025
		Advances in mobile application development	NAARM, Hyderabad	5-9th August, 2024
5.	Dr. R.J. Chaudhari (JAU, Jamnagar)	Prakrutik krushi talim karyashala	Rajbhavan, Gandhinagar	7th August, 2024
6.	Dr. V. Vasuki (TNAU, Coimbatore)	Integrated weed management strategies under changing agricultural scenario	ISWS, Jabalpur	
7.	Dr. S.B. Pawar (NARP, Aurangabad)	Advances in production of bajra special concern to Marathwada region	VNMKV, Parbhani & RRA, Maharashtra	11th May, 2024
		Statistical training and exploring the role of agriculture in industry domain	ISA, New Delhi	22nd-31st August, 2024
8.	Dr. Supriya (PC Unit, Jodhpur)	Abiotic stress management in agriculture for enhancing the farmer's income with special reference to millets - fodder crops cultivation in arid and semi -arid regions of India	ICAR-IIMR, Hyderabad and MANAGE, Hyderabad	6-10th January, 2025
		Natural Farming	MANAGE, Hyderabad and Rajinder Agri Clinic, Punjab	13-17th January, 2025
9.	Dr. A.B. Bagade (NARP, Aurangabad)	Climate change scenario: impact in agriculture and allied sciences	Astha Foundation, Meerut, UP	16-30th September, 2024

Conferences

10.	Dr. I. Johnson (TNAU, Coimbatore)	Beneficial microbes as integrated approach for sustainable agriculture: opportunities & challenges	Asian PGPR Society and Bharathiar University, Coimbatore	29-30th July, 2024
		Unleashing the power of seed and crop health innovations for a food secure world (ICUCF - 2024)	Shastri Indo - Canadian institute, New Delhi, Seed Centre and CPPS, TNAU, Coimbatore	21st-22nd November, 2024
11.	Dr. Supriya (PC Unit, Jodhpur)	Good agricultural practices of selected medicinal plants	AMU, A ligarh & Society for Plant Research, UP	16-18th November, 2024
		Agriculture and allied sciences: recent advances and innovative approaches for climate smart agriculture	Banaras Hindu University, Varanasi	25-26th November, 2024
12.	Dr. Sadhana R. Babar (Vijayapur)	Rainfed agriculture: building pathways for resilience & sustainable livelihoods	ICAR-CRIDA, Hyderabad	29th-31st January, 2025
13.	Dr. V. Vasuki (TNAU, Coimbatore)	Agrovoltaics and sustainability in farming	AEC & RI, TNAU, Coimbatore	19th September, 2024
14.	Dr. K.K.Barhate (BRS, Dhule)	Breeders day conference	MPKV, Rahuri	7-8th September, 2024
15.	Dr. Vikas Khandelwal, Dr. R.S. Choudhary, Dr. Manoj Kumar, Dr. JP Bishnoi (PC Unit, Jodhpur)	Nutri-cereals and smart food for transforming resources, innovation and technology for optimal nutritional security	Agriculture University, Jodhpur	18-19th March, 2025

Seminars / Webinars

16.	Dr. Ruchika Bhardwaj (PAU, Ludhiana)	Millets-2022	JGND PSOU, Patiala	6th March, 2024
17.	Dr. S.K. Parmar, Dr. R.J. Chaudhari (JAU, Jamnagar)	Processing and value addition of agricultural produce in amrit kal	GAAS, Ahmedabad and Bansi Gaushala, Gau Tirth Vidyapeeth, Gujarat	31st August, 2024

Symposiums

18.	Dr. S.P. Singh (ICAR-IARI, New Delhi)	International nutri - cereal convention 6.0 (INCC-6.0)	IIMR, Hyderabad	17-18th October, 2024
		National symposium & alumni meet	NASC Complex, New Delhi	22nd June, 2024
		Integrating traditional and modern plant breeding techniques for food security: trends & challenges	GBPUA&T, Pantnagar	20th-22nd December, 2024
19.	Dr. Chandan Kapoor, Dr. S.P. Singh (ICAR-IARI, New Delhi) Dr. Vaibhav Sharma (RARI, Jaipur)	Genetics and genomics for a better future: microbes to man	ISGPB and ICAR - IARI, New Delhi	11-13th December, 2024
		Hybrid technology for enhancing crop productivity (NSHT)	TAAS, ICAR, ICRISAT, CIMMYT, IRRI & ISPGR, New Delhi	8-10th January, 2025
20.	Dr. R.J. Chaudhari (JAU, Jamnagar)	Plant Pathology: plant and soil health management for better tomorrow	SDAU, S.K. Nagar and ISMPP, MPUAT, Udaipur	7-10th February, 2024
21.	Dr. S.B. Pawar (NARP, Aurangabad)	Agricultural engineering education for aspiring youth in transforming agriculture	VNMKV, Parbhani	12-14th November, 2024
22.	Dr. S.K. Jain (RARI, Jaipur)	Strategy for accelerating growth in pulses	NITI Aayog, New Delhi	20th September, 2024
23.	Dr. Ruchika Bhardwaj (PAU, Ludhiana)	Food processing 4.0 - innovations and sustainability	PAU, Ludhiana	30th April, 2024

Workshops

24.	Dr. Ruchika Bhardwaj (PAU, Ludhiana)	Plant biodiversity: conservation and utilization	PAU, Ludhiana
25.	Dr. Chandra Nayaka (UAS, Mysore)	Fusarium laboratory workshop	Kansas State University Manhattan, Mansas
26.	Dr. V. Vasuki (TNAU, Coimbatore)	Consortium of Industrial Agroforestry (CIAF)	FC & RI, TNAU, Mettupalayam
27.	Dr. S.B. Pawar (NARP, Aurangabad)	CROPSAP workshop on Nutri Cereals and kharif crop cultivation	Sillod
		Importance of millets and bio fortied hybrids: a game changer to combat malnutrition	MDM and ICDS, Gokhale Institute, Pune
28.	Dr. A.B. Bagade, Dr. S.B. Kadam (NARP, Aurangabad)	International faculty development programme- cum- workshop	Cambridge International Agricultural Organization, Southern Federal University, Russia

Radio / TV Talks

29.	Dr. S.P. Singh (ICAR-IARI, New Delhi)	Importance of millets	AIR-(Post Box 111)	8th September, 2024
30.	Dr. K.K.Barhate (BRS, Dhule)	Summer bajra cultivation	Sahydri Doordarshan	7th January, 2025
31.	Dr. V. Vasuki, (TNAU, Coimbatore)	Diseases of pearl millet and their management (Tamil)		11th December, 2024
		Earum oorum farmers programme on pearl millet cultivation technologies	AIR-Coimbatore	18th January, 2025
		Disease management in pearl millet- an overview		21st January, 2025
		Earum oorum farmers programme on best weed management practices in crop production	AIR-Coimbatore	23rd January, 2025
32.	Dr. Vikas Khandelwal (PC Unit, Jodhpur)	Progress and development of pearl millet	NDTV, Jodhpur	8th September, 2024

Lectures

33.	Dr. S.P. Singh (ICAR-IARI, New Delhi)	Exploitation of heterosis: a key factor for productivity enhancement in pearl millet during national conference on "Quality seed production: backbone to the national food security"	GBPUA&T, Pantnagar	5th March, 2024
		Principles of seed production in pearl millet during a training on "Seed production, testing and storage in field and vegetable crop"	Division of Seed Science and Technology & ZTM and BPD Unit, IARI - New Delhi	11th September, 2024
		Bajra evam jwar utpadan ki vaigyanik takneekee	CATAT, IARI, Pusa New Delhi.	July 31st, 2024
34.	Dr. K.K.Barhate (BRS, Dhule)	Production technology for summer bajra	KVK, Department of Agriculture and BRS, Dhule	25th June, 2024
35.	Dr. Chandra Nayaka (UAS, Mysore)	Tropical *Fusarium* diseases during 23 rd *Fusarium* laboratory workshop	Kansas State University in Manhattan, Kansas, USA	
		Characterization of *Pyricularia* species diversity associated with blast disease in millets and rice in India	Indian Phytopathological Society, Nagpur	January 19th - 21st, 2025
36.	Dr. S.B. Pawar (NARP, Aurangabad)	Agronomy management of pearl millet	Harvest Plus, ICRISAT, Hyderabad	12th July, 2024
		Nutrient management in pearl millet	NARP, Chh. Sambhhajinagar	3rd-5th July, 2024
		Mid season management of pearl millet	KVK, Kharpudi	12th August, 2024
		Summer pearl millet cultivation	KVK, Chh. Sambhajinagar	1st January, 2025
		Millet cultivation and its importance in human diet	KVK, Khamgaon	3rd January, 2025
		Summer pearl millet cultivation	Shekta Tq. Paithan, Aurangabad	8th January, 2025
		Summer bajra & importance of nutrional value of millets in daily diet	Undirwadi, Tq. Vaijapur, Aurangabad	20th January, 2025
37.	Dr. Vikas Khandelwal (PC Unit, Jodhpur)	Production technique of nutri-cereal/millet crops	Additional Director Agriculture (Ext.), Jodhpur	21st March, 2025

Awards and Nominations

S. No.	Name of Scientist	Award/recognition	Awarded by	Duration
1.	Vikas Khandelwal (PC Unit, Jodhpur)	Best oral presentation award during national conference on nutri-cereals and smart food for transforming resources, innovation and technology for optimal nutritional security	Agriculture University, Jodhpur	18-19th March, 2025
		Research paper award for publishing as a lead author in high rated NAAS journal- Plants Basel		26th January, 2025
2.	Dr. P.C. Gupta (SKRAU, Bikaner)	Appreciation certificate for excellent work in the development of National Seed Project	SKRAU, Bikaner	15th August, 2024
		Best Scientist Award		26th January, 2025
3.	Dr. I. Johnson (TNAU, Coimbatore)	Excellence in research and extension award during 9th Asian PGPR national conference	Asian PGPR Society and Dept. of Botany, Bharathiar University, Coimbatore	29-30th July, 2024
		Sir C.V. Raman outstanding achievement award during national conference	ICAR-NRC Banana, Tiruchirapalli and NRDF, Pudukkottai	18th August, 2024
		Best presentation award during "International Scientific Tamil Conference-Agriculture"	CSC & RI, Madurai	16th October, 2024
		Dr. M.J. Narasimhan Academic Merit Award during 77 th Annual group meeting and national conference	Indian Phytopathological Society at ICAR-CCRI, Nagpur	19th - 21st January, 2025

4.	Ms. Naga Muli Surekha and Dr. V. Vasuki (TNAU, Coimbatore)	Best oral presentation award during 4th International web conference on "Natural resource management for global food security and environmental stewardship"	ANRCM, Lucknow, KSN University of Agricultural and Horticultural Sciences, Shivamogga and UAS, Bengaluru	15-16th October, 2024
5.	Dr. Supriya (PC Unit, Jodhpur)	Young Scientist Award - 2024 (Plant Biotechnology) during SPR-mini symposium on "Biotechnological & genomic tools to combat climate change"	Society for Plant Research (Vegetos), Noida, UP	16-18th November, 2024
6-	Dr. Vinod Kumar Malik (CCS HAU, Hisar)	Letter of appreciation for identification of new disease	Director Research, CCS HAU, Hisar	28th March, 2024
7.	Dr. Dev Vart (CCS HAU, Hisar)	VAJRA (Visiting Advanced Joint Research) project on "Integrating breeding of starch and other health benefiting characteristics into staple crops varieties for mitigating illnesses such as type-2 diabetes in India"	GOI-DST SERB (ANRF)	7th November, 2024
8.	Dr. S.B. Pawar, (NARP, Aurangabad)	Best oral presentation award at 2nd International conference on RAINBURS- 2025	Indian Society of Dryland Agriculture, CRIDA, Hyderabad	29th -31st January, 2025
9.	Dr. K.K. Barhate, Dr. C.S. Thakare, Dr. R.T. Suryawanshi (BRS, Dhule)	Digital Shetishala	Pani Foundation, Mumbai	29th February, 2024

Other Activities

- Tree plantation was done at field of PC Unit, Jodhpur by Hon'ble VC, AU Jodhpur under "Ek ped desh ke naam" drive on 2nd August, 2024 and plantation activity was done at PC Unit, Jodhpur under "Haryalo Rajasthan plantation event" on 7th August, 2024.


- NARP, Aurangabad actively participated in technology exhibition and guided the farmers with technical exhibits on the eve of Marathwada Mukti Sangram Day on 17th September, 2024 and in the program at Dhorkin, Tq. Paithan organized by ATMA Chh., Sambhajinagar on 31st August, 2024.
- Dr. L. Madhavilatha, Principal Scientist (Plant Breeding), AICRP on Pearl Millet, ARS, ANGRAU, Ananthapuramu attended Pearl millet scientists field day at ICRISAT on 3rd and 4th October, 2024.

Visits

- Sh. Narendra Modi Ji, Hon'ble Prime Minister of India visited pearl millet field at ICAR-IARI, New Delhi on 11th August, 2024 and interacted with farmers and scientists.

- Dr. Himanshu Pathak, Hon'ble Secretary DARE and DG, ICAR and Dr. DK Yadava ADG (Seeds) visited pearl millet demo field at ICAR-IARI, New Delhi on 7th August, 2024.
- Dr. C Tara Satyavathi, Director, IIMR, Hyderbad and Project Coordinator, Pearl millet visited pearl millet field at ICAR-IARI, New Delhi on 27th September, 2024.

- QRT visited field of PC Unit, ICAR-AICRP on Pearl millet, Jodhpur on 27th August, 2024 and scientists from India, UK, USA, Africa visited fields of PC Unit, ICAR-AICRP on Pearl millet, Jodhpur during Annual Group meeting of STOL on 31st August, 2024.

- Minister from Karnataka visited pearl millet field at ICAR-IARI, New Delhi on 12th August, 2024 and 40 farmers from Mirzapur, UP visited pearl millet field on 14th August, 2024.
- Mr. Dhananjay Mundhe, Agril. Minister of State visited the exhibition of NARP Aurangabad, appreciated pearl millet hybrid AHB1200 during State Agril. Exhibition, Parali during 22nd -24th August, 2024.

- Dr. V. P. Chovatiya, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh visited Pearl Millet Research Station, JAU, Jamnagar on 25th July, 2024.

- Dr. Indra Mani, Hon'ble Vice Chancellor, VNMKV, Parbhani visited the Agriculture Exhibition organized by AGROWON at Chh. Sambhajinagar during 10-13th January, 2025.

- Dr. R.B. Madariya, Director of Research, Junagadh Agricultural University, Junagadh visited Summer Nursery 2024 at Pearl Millet Research Station, Jamnagar on 05th April, 2024,

- Dr. Ashok Dalawai, President of Karnataka Agriculture Produce Price Fixation Committee visited pearl millet demonstration units during kisan mela at Vijayapur on 12th January, 2025 and interacted with pearl millet scientists.

- Dr. B.M. Iile, Associate Dean, College of Agriculture, Dhule visited the research station and monitored the different trials on 15th September, 2024.

- Dr. V.P. Chovatiya, Hon'ble Vice Chancellor, Dr. N. B. Jadav, Director of Extension Education, Dr. Y. H. Ghelani, Registrar, Junagadh Agricultural University, Junagadh visited Pearl Millet Research Station, JAU, Jamnagar on 28th January, 2025.

- Dr. V.L.Amolic, Head, Department of Botany, MPKV, Rahuri visited the pearl millet trials on 16th October, 2024.

- Lead breeder and other staff from Nuziveedu Seeds Pvt. Ltd. visited pearl millet field at ICAR-IARI, New Delhi on 19th September, 2024.

- Dr. M. Govindraj visited fields of NARP, Chh. Sambhajinagar on 22nd September, 2024.

- ICAR-AICRP on Pearl millet monitoring team visited the Pearl Millet Research Station, JAU, Jamnagar on 9th October, 2024.

- ICAR-AICRP on Pearl millet monitoring team visited ICAR-AICRP on Pearl millet field trials at Vijayapur on 15th October, 2024.

- ICAR-AICRP on Pearl millet monitoring team visited fields of ICAR-AICRP on Pearl millet, BRS, Dhule on 3rd October, 2024.

- ICAR-AICRP on Pearl millet monitoring team visited fields of ICAR-AICRP on Pearl millet, TNAU, Coimbatore and UoM, Mysuru from 6-8th October, 2024.

- ICAR-AICRP on Pearl millet monitoring team visited pearl millet fields of NARP, Chh. Sambhajinagar on 14th October, 2024.

- Sh. Diliprao Deshmukh, Member, Executive Coucil, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani visited NARP, Aurangabad on 19th April, 2024.

- Dr. D.P. Waskar, Director of Research, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani visited NARP, Aurangabad on 15th May, 2024.

- Dr. Raosaheb Bhadage, Director General, MCAER, Pune visited NARP, Aurangabad on 1st July, 2024.

- Dr. Parimal Singh, Project Director, POCRA, Chh. Sambhajinagr and Dr. Kolekar visited field as well as laboratories of NARP, Aurangabad on 13th July, 2024.

- Dr. S.M. Mishra, Principal Scientist, TERI, New Delhi visited Bio pesticide and Trichocard laboratories of NARP, Aurangabad on 15th August, 2024.

- Dr. P.R. Deshmukh, Joint Director Agriculture, Aurangabad visited NARP, Aurangabad on 15th October, 2024 and Dr. H.K. Kausadikar, Director Research, MCAER, Pune on 16th October, 2024.

Research Papers

1. Singh S, Prakash G, Nanjundappa S, Malipatil R, Kalita P, Satyavathi CT, Nepolean T (2024) Novel SNPs linked to blast resistance genes identified in pearl millet through genome-wide association models. *International Journal of Molecular Sciences* 25:12048 https://doi.org/10.3390/ ijms252212048 (NAAS rating- 10.90)

2. Daduwal HS, Bhardwaj R, Srivastava RK (2024) Pearl millet a promising fodder crop for changing climate: a review. *Theoretical and Applied Genetics* 137 https://doi.org/10.1007/s00122-024-04671-4 (NAAS rating- 10.40)

3. Ashajyothi M, Mahadevakumar S, Venkatesh YN, Sarma PVSRN, Danteswari C, Balamurugan A, Prakash G, Khandelwal V, Satyavathi CT, Podile AR, Mysore KS, Chandranayaka S (2024) Comprehensive genomic analysis of *Bacillus subtilis* and *Bacillus paralicheniformis* associated with the pearl millet panicle reveals their antimicrobial potential against important plant pathogens. *BMC Plant Biology* 24(1): 264 doi:10.1186/s12870-024-04975-z (NAAS rating- 10.30)

4. Singh S, Viswanath A, Chakraborty A, Narayanan N, Malipatil R, Jacob J, Mittal S, Satyavathi CT, Nepolean T (2024) Identification of key genes and molecular pathways regulating heat stress tolerance in pearl millet to sustain productivity in challenging ecologies. *Frontiers in Plant Science* 15:1443681 (NAAS rating-10.10)

5. Bhargavi HA, Goswami SP, Yadav S, Naveen S, Shashikumara AP, Singhal TS, Sankar SM, Danakumara T, Hemanth S, Kapoor C, Singh N (2024) Deciphering the genetic variability for biochemical parameters influencing rancidity of pearl millet (*Pennisetum glaucum* (L.) R. Br.) flour in a set of highly diverse lines and their categorization using rancidity matrix. *Journal of Food Composition and Analysis*128 :106035 doi:https://doi.org/10.1016/j.jfca.2024.106035 (NAAS Rating- 10.00)

6. Singh S, Yadav D, Beckmann M, Naveen A, Gangashetty PI, Mur LAJ and Yadav RS (2024) Variation in protein and amino acids in global collection of pearl millet (*Pennisetum glaucum)* germplasm. *Journal of Food Composition and Analysis* 134:106557 DOI:10.1016/j.jfca.2024.106557 (NAAS Rating- 10.00)

7. Goswami S, Vinutha T, Kumar RR, Ali TP , Kumar SS, Kumar TVA, Pramod A, Sahoo PK, Meena MC, Singh SP, Mandal SC, Satyavathi CT, Tyagi A, Praveen S (2024) Effect of different degrees of decortication on pearl millet flour shelf life, iron and zinc content. *Journal of Food Composition and Analysis* 127(9):105927 doi: https://doi.org/10.1016/j.jfca.2023.105927 (NAAS Rating -10.00)

8. Khandelwal V, Patel R, Choudhary KB, Pawar SB, Patel MS, Iyanar K, Mungra KD, Kumar S, Satyavathi CT (2024) Stability analysis and identification of superior hybrids in pearl millet [*Pennisetum glaucum* (L.) R. Br.] using the multi trait stability index. *Plants-Basel* 13 (8) 1101-1121. https://doi.org/10.3390/ plants13081101 (NAAS Rating- 10.00)

9. Kapoor C, Anamika, Sankar SM, Singh SP, Singh N, Kumar S (2024) Omics−driven utilization of wild relatives for empowering pre−breeding in pearl millet. *Planta* 259:155 https://doi.org/10.1007/s00425-024-04423-0 (NAAS Rating- 9.60)

10. Subbulakshmi K, Karthikeyan A, Murukarthick J, Dhasarathan M, Ranganathan N, Murughiah S Balasundaram L, Iyanar K, Sivakumar S, Ravikesavan R, Sumathi P, Senthil N (2024) Consensus genetic linkage map and QTL mapping allow to capture the genomic regions associated with agronomic traits in pearl millet. *Planta* 260 (3): 57 https://doi.org/10.1007/s00425-024-04487-y (NAAS Rating- 9.60)

11. Yuvashree B, Johnson I, Karthikeyan M, Shanmuga Priya D, Anandham R (2025) Identification, characterization and pathogenicity of Fusarium species associated

with sheath and stem blight- A new record on pearl millet (*Pennisetum glaucum* R. Br.). *Microbial Pathogenesis* 199: 107238 (NAAS Rating- 9.30)

12. Malik VK, Sangwan P, Singh M, Kumari P, Shoeran N, Ahalawat N, Kumar M, Harshdeep, Malik K, Verma P, Yadav P, Kumari S, Aakash, Sambandh Dhal (2024) Stem rot of pearl millet prevalence, symptomatology, disease cycle, disease rating scale and pathogen characterization in pearl millet-*Klebsiella* pathosystem. *Plant Pathology Journal* 40(1):48-54. doi: 10.5423/PPJ.OA.09.2023.0126 (NAAS Rating- 7.80)

13. Singhal T, Satayvathi CT, Singh SP, Sankar SM, Mallik M, Thribhuvan R, Yadav S, Bhardwaj C (2024) Elucidating genotype × environment interactions for grain iron and zinc content in a subset of pearl millet (*Pennisetum glaucum*) recombinant inbred lines. *Crop and Pasture Science* 75(3) Doi: 10.1071/CP23120 (NAAS Rating- 7.80)

14. Aavula N, Singh SP, Singhal T, Reddy S, Bhargavi HA, Yadav S, Hemanth S, Kapoor C, Patel S, Singh N, Satyavathi CT (2024) Delineation of selection efficiency and coincidence of multi-trait based models in a global germplasm collection of pearl millet for a comprehensive assessment of stability and high performing genotypes. *Genetic Resources and Crop Evolution* https://doi.org/ 10.1007/s10722-024-02245-3 (NAAS Rating- 7.60)

15. Kapoor C, Anamika, Singh SP, Kumar S, Sankar SM, Singh N, Singhal T (2024) Hydroponics mediated seedling dehydration stress revealed variable tolerance in pearl millet (*Pennisetum glaucum* L.) minicore collection. *Genetic Resources and Crop Evolution* https://doi.org/10.1007/s10722-024-02116-x (NAAS Rating- 7.60)

16. Kapoor C, Anamika, Singh SP, Sankar SM, Prakash G, Kumar S, Singh N, Bhargavi HA, Singhal T (2024) Foliar blast and seedling dehydration stress tolerance in wild *Pennisetum monodii* germplasm and trait variability in inter-specific crosses with *Pennisetum glaucum*. *Genetic Resources and Crop Evolution* https://doi.org/10.1007/s10722-024-02212-y (NAAS Rating- 7.60)

17. Naveen A, Singh SP, Singhal T, Reddy PS, Bhargavi HA, Yadav S, Hemanth S, Kapoor C, Supriya P, Singh N, Satyavathi CT (2024) Delineation of selection efficiency and coincidence of multi-trait-based models in a global germplasm collection of pearl millet for a comprehensive assessment of stability and high performing genotypes. *Genetic Resources and Crop Evolution* https://doi.org/10.1007/s10722-024-02245-3 (NAAS Rating- 7.60)

18. Kumar RR, Singh N, Goswami S, Vinutha T, Singh SP, Mishra GP, Kumar A, Jha GK, Satyavathi CT, Praveen S, Tyagi A (2024) Hydrothermal infra−red (HT−IR): the most effective technology for enhancing the shelf−life of pearl millet flour without compromising with the nutrient density and flour quality. *Journal of Plant Biochemistry and Biotechnology* https://doi.org/10.1007/s13562-024-00893-1 (NAAS Rating- 7.60)

19. Singhal T, Satyavathi CT, Singh SP, Sankar SM, Yadav S, Mallik M, Bharadwaj C (2024) Identification of high-performing and stable pearl millet genotypes using multi-trait stability index. *Agricultural Research* https://doi.org/10.1007/ s40003-024-00831-6 (NAAS Rating- 7.40)

20. Singhal T, Satyavathi CT, Singh SP, Sankar M, Yadav S, Mallik M, Bharadwaj C (2024) Identification of high-performing and stable pearl millet genotypes using multi-trait stability index. *Agricultural research* https://doi.org/10.1007/ s40003-024-00831-6 (NAAS Rating- 7.40)

21. Bhardwaj R, Sohu RS, Singh DP, Singh G (2024) Notification of crop varieties and registration of germplasm, Bajra Variety-PCB 166. *Indian Journal of Genetics and Plant Breeding* 84 (1): 138 (NAAS rating-7.00)

22. Khandelwal V, Reddy PS, Satyavathi CT, Gupta PC, Jain SK, Mungra KD, Tripathi MK, Yadav D, Solanki RK, Patroti P (2024) Identification of stable cultivars of pearl millet based on GGE

Biplot and MTSI index. *Indian journal of Genetics and Plant Breeding* 84(4): 668-678 (NAAS Rating- 7.00)

23. Surekha NM, Vasuki V, Kavitha S (2024) Effect of land configuration and methods of establishment on establishment, growth and yield of pearl millet. *Plant Science Today* 11 (4) DOI: https://doi.org/ 10.14719/pst.5405 (NAAS Rating- 6.70)

24. Shanivare YA, Pawar VY, Barhate KK, Suryawanshi RT (2024) Combining ability studies for grain yield and associated traits in pearl millet. *AATCC Review* 2(4):427-432 (NAAS Rating- 6.00)

25. Sujitha R, Iyanar K, Ravikesavan R, Chitdeshwari T, Boopathi NM (2024) Insights into yield stability: A comparative analysis of regression, AMMI indices and biplot methods in pearl millet. *Electronic Journal of Plant Breeding* 15 (1): 42-52. DOI: 10.37992/2024. 1501.004 (NAAS Rating- 5.60)

26. Poonia MK, Gupta PC, Sharma N, Kumar R (2024) Genetic diversity and association study in pearl millet hybrid parents for genetic improvement of hybrids. *Plant Archives* 23 (2): 104-109 (NAAS Rating- 5.59)

27. Ambawat S, Satyavathi CT, Khandelwal V, Meena R, Singh S, Kumar M, Bishnoi JP (2025) Genetic diversity analysis and molecular characterization of pearl millet [*Pennisetum glaucum* (L.) R. Br.] hybrids/varieties. *Journal of Advances in Biology and Biotechnology* 28 (2):824-840 https://doi.org/10.9734/ jabb/2025/ v28i22043 (NAAS Rating- 5.30)

28. Gupta PC, Shekhawat K, Sharma N, Shekhawat DS, Kumari R (2024) Performance evaluation of released genotypes of pearl millet (*Pennisetum glaucum*) in agro-climatic zone 1C of Rajasthan, India. *Journal of Advances in Biology and Biotechnology* 12074: (NAAS Rating- 5.30)

29. Ambawat S, Satyavathi CT, Khandelwal V, Meena R, Meena RC, Singh S, Kumar M, Bishnoi JP (2024) Characterization of iron and zinc rich pearl millet hybrids and varieties using molecular markers. *International Journal of Advanced Biochemistry Research* 8(2): 542-548.https://doi.org/10.33545/26174693.2024.v 8.i2g.612 (NAAS Rating- 5.29)

30. Ambawat S, Satyavathi CT, Meena RC, Meena R, Khandelwal V, Singh S, Kumar M, Bishnoi JP (2025) Molecular analysis of pearl millet genotypes suitable for drought tolerance in A_1 zone using SSR markers. *International Journal of Advanced Biochemistry Research 9*(2):593-597. DOI: https://doi.org/10.33545 /26174693.2025. v9.i2Sh.3847 (NAAS Rating- 5.29)

31. Sheoran N, Malik VK, Sangwan R (2024) Impact of temperature on the growth of *Klebsiella* aerogenes, which causes pearl millet stem rot. *International Journal of Advanced Biochemistry Research* 8 (7): 469-473 (NAAS Rating- 5.29)

32. Mungra KD, Parmar SK, Sorathiya JS, Galani SN, Chaudhari RJ (2024) Biofortified nutri cereal pearl millet hybrid GHB 1225 (Moti Shakti). *International Journal of Advanced Biochemistry Research* 8(6): 273-276.DOI: https://doi.org/ 10.33545/26174693. 2024.v8.i 6Sd.1291 (NAAS Rating- 5.29)

33. Choudhary S, Sharma S, Yadav S, Ghasil BP (2024) Effect of bio-organics and seed priming on crop productivity, post-harvest soil fertility profile, biological counts and economics of pearl millet under rain-fed condition of Rajasthan. *International Journal of Research in Agronomy* 7(10): 40-43 (NAAS Rating- 5.20)

34. Kumar V, Ganachari N, Hosamani J, Gurumurthy R, Naidu GK, Athoni BK (2024) Identification of suitable synchronization technique in pearl millet [*Pennisetum glaucum* (L.) R.]. *International Journal of Research in Agronomy* 7(9): 605-609 (NAAS Rating- 5.20)

35. Shewalkar SR, Patil CB, Pawar SB, Wankhede AD (2024) Response of pearl millet to split application of nitrogen under irrigated condition. *International Journal of Research in Agronomy* 7(11): 264-269 (NAAS Rating- 5.20)

36. Wankhede AD, Pawar SB, Patil CB, Shewalkar SR (2024) Studies on contribution of production factors to yield and economics of pearl millet. *International Journal of Research in Agronomy* 7(12): 275-278 (NAAS Rating- 5.20)

37. Singh N, Bhardwaj R, Sohu RS (2024) Studies on genetic variability and correlation in pearl millet inbred lines. *Agricultural Research Journal* 60 (6): 822-826 (NAAS rating: 5.16)

38. Surekha NM, Vasuki V, Kavitha S (2024) Effect of land configuration and rainfall on (*Pennisetum glaucum* (L.) R. Br) under saline irrigation. *International Journal of Environment and Climate Change* 14:11 P 466 (NAAS Rating- 5.16)

39. Rasitha R, Kalaiyarasi R, Iyanar K, Senthil N, Johnson I (2024) Exploring genetic diversity and trait associations with foliar blast disease among parental lines in pearl millet [*Pennisetum glaucum* (L.) R Br]. *Journal of Phytology* 16: 20-27 doi: 10.25081/jp.2024.v16.8797 (NAAS Rating- 5.11)

40. Shanthi PM, Madhavilatha L, Hemalatha TM, Kumar HM, Narasimhulu R (2024) Combining ability studies for yield and yield attributes in bajra. *Ecology Environment and Conservation* 30 (7): S189-S194 (NAAS Rating- 5.05)

41. Chaudhari RJ, Mungra KD, Juneja RP, Parmar SK, Sorathiya JS (2024) Management of pearl millet downy mildew disease by organic practices. *Biological Forum* 16(6): 53-57 (NAAS Rating- 4.96)

42. Moghariya AA, Parmar SK, Chaudhari RJ, Mungra KD, Patel JK (2024) Heterosis of pearl millet [*Pennisetumglaucum* (L.) R. Br.] hybrids involving diverse CGMS lines and restorers. *Asian Research Journal of Agriculture* 17(4): 1045-1052 DOI: https://doi.org/10.9734/arja/2024/v17i4618 (NAAS Rating -4.86)

43. Moghariya AA, Parmar SK, Chaudhari RJ, Patoliya BV, Mungra KD, Patel JK (2024) Screening of pearl millet hybrids, parents and their performance in hybrids against blast disease under field conditions. *Asian Research Journal of Agriculture* 17(4): 1100-1106.DOI: https://doi.org/10.9734/arja/2024/v17i4624 (NAAS Rating- 4.86)

44. Moghariya AA, Parmar SK, Chaudhari RJ, Mungra KD, Patel JK (2024) Combining ability of pearl millet [*Pennisetumglaucum* (l.) R. Br.] hybrids involving diverse CGMS lines and restorers. *Asian Research Journal of Agriculture* 17(4): 1107-1114.https://doi.org/ 10.9734/arja /2024/v17i4625 (NAAS Rating- 4.86)

45. Kavita, Yadav D, Kumar R, Chugh LK, Sheokand RN, Singla P (2024) Genetic divergence for grain quality and agro-morphological traits in pearl millet. *Annals of Arid Zone* 63(1): 87-98 (NAAS Rating- 4.86)

46. Rani R, Khandelwal V, Jhunjhadia S, Ambawat S, Bhanwariya S, Singh A, Kumar V (2024) Quantifying genetic diversity based on morphological and molecular analysis in pearl millet [*Pennisetum glaucum* (L.) R. Br.] inbred lines. *Annals of Arid Zone* 63(3): 105-110doi.org/10.56093/aaz.v63i3.151562 (NAAS Rating- 4.86)

47. Chaudhari RJ, Mungra KD, Parmar GM, Parmar SK, Sorathiya JS (2024) Mitigating pearl millet blast (*Pyricularia grisea*) effective fungicidal treatments. *Advances in Research* 25(5):223-235 DOI: https://doi.org/10.9734/air/2024/v25i51156 (NAAS Rating-4.76)

48. Chaudhari RJ, Mungra KD, Parmar SK, Sorathiya JS, Kandoriya DV, Mavani SV (2024) Effective management of pearl millet blast (*Pyricularia grisea*) through combined chemical and biological tactics. *Advances in Research*

25(6): 392-410.DOI: https://doi.org/10.9734/air/2024/v25i61212 (NAAS Rating- 4.76)

49. Priyanka, Kumar A, Rani S (2024) Influence of different tillage and nutrient management practices on growth parameters and stover yield of pearl millet (Pennisetum glaucum (L.) R. Br). Emend Stuntz) *Forage research* 50 (2): 197-202 (NAAS Rating- 4.76)

50. Rajotia MS, Dev Vart, Pahuja SK, Mor VS (2025) Genetic variation for rancidity and grain yield components in pearl millet seed parents. *Research Journal of Agricultural Sciences* 16(1): 23–28 (NAAS Rating- 4.56)

51. Kumar PI, Shanthi PM, Madhavilatha L, Latha P (2024) Assessment of genetic diversity of inbred lines in pearl millet (*Pennisetum glaucum* (L.) R. Br.). *Frontiers in Crop Improvement* 12 (1): 42-46 (NAAS Rating- 4.20)

52. Shinde AD, Bagade AB, Pawar SB, Akhare MB (2024) Estimation of heterosis in pearl millet (*Pennisetum glaucum L.*) for yield and its component traits. *Indian Journal of Agriculture and Allied Sciences* 10 (1) (NAAS Rating- 3.99)

53. Pateliya VR, Parmar GM, Chaudhri RJ, Mungra KD, Detroja AC (2024) Host plant resistance to insects in pearl millet hybrids and its role in integrated pest management. *Insect Environment* 27 (4):429-433 (NAAS Rating- 3.52)

54. Andhale GR, Bhavsar VV, Barhate KK, Shinde GC (2024) Study the parameters of variability and multivariate analysis in different genotypes of pearl millet. *International Journal of Multi Discipline* 136-140

55. Johnson I, Anitha MX, Winifred RP, Chalmers J, Karthikeyan M, Andrew J (2024) Deep-millet: a deep learning model for pearl millet disease identification to envisage precision agriculture. *Environmental Research Communication* 6: 105031

Books/Book Chapters

1. Bansal S, Balamurugan A, Mallikarjuna MG, Singh SP, Nayaka SC, Prakash G (2024) The major diseases of pearl millet in the indian sub-continent: current scenarios in resistance and management strategies. In: Pearl millet in the 21st century.Tonapi VA, Thirunavukkarasu N, Gupta S, Gangashetty PI, Yadav O. (eds) Springer, Singapore. https://doi.org/10.1007/978-981-99-5890-0_21.

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