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# PARC NEWSLETTER

Pakistan Agricultural Research Council

Oct - Dec. 2023

Vol. 35 - No. 04

## 46th Board of Governors meeting held at NARC

ISLAMABAD: The Federal Minister for National Food Security & Research (MNFSR), Dr. Kauser Abdulla Malik, chaired the 46th Meeting of the Board at the National Agricultural Research Centre on Nov. 29. Dr. Kauser welcomed all the members of the PARC Board and lauded the efforts of PARC Scientists in revolutionizing country's agriculture sector. He highlighted PARC's significant contributions in advancing the agriculture sector. Emphasizing fair benefits distribution, he stressed upon the importance of the nationwide impact of PARC research.

In his briefing, Dr. Ghulam Muhammad Ali, Chairman PARC, apprised the board regarding new high tech research initiatives to boost agriculture sector. The Pakistan Agricultural Research Council budget for the fiscal year 2023-24 was presented to the Board and received approval. Dr. Ali highlighted PARC's significant contributions in research, acknowledging its pivotal role in tackling challenges to the agricultural sector of country.

## Farm research is a key to boost economy: Dr. Kauser

ISLAMABAD: The Federal Minister for National Food Security and Research, Dr. Kauser Abdulla Malik, visited NARC to preside over a one-day workshop on Climate Resilient High Yielding and Quality Rice Development. During his address, Dr. Kauser Abdulla emphasized the significance of research and development in the agricultural sector, stating that it is the country's only hope for overcoming the economic crisis.

Dr. Kauser urged young scientists and researchers to make use of technology, particularly in the field of genomics and biotechnology. He emphasized the importance of adapting crops that are resilient to the changing climate and resistant to extreme temperatures.

In the welcome remarks, Dr. Ghulam Muhammad Ali, Chairman PARC, expressed gratitude to the distinguished guests, government and private sector representatives, media personnel, and all workshop participants for their participation to make the event successful. The chairman reiterated the

focus on farmers benefit through maximizing their profits by increased crop yields. He emphasized that NIGAB newly developed climate resilient rice varieties will reduce not only farmers' reliance on expensive imported hybrid seeds but will also ensure sustainable production. While explaining the attributes of these newly developed varieties, Dr. Ali explained that these varieties possess yield potential twice the yield potential of existing varieties, which is only 40 to 50 mounds per acre. He further narrated that not only these varieties result in 50% higher yield than other fine varieties but also generate 85 - 120 % more in head rice recovery and 15 - 20 % more in total milled rice recovery. More importantly.

Dr. Ali illustrated that beside high yield these new varieties are insect/pest and disease resistant and no/less use of pesticide might lower farmers' cost of production. Also, in the backdrop of water shortage and scarcity these varieties will revolutionize the rice economy under less acreage with more or same level of production.



Federal Minister MNFS&R, Dr. Kauser Abdulla Malik chairing 46th meeting of PARC Board of Governors (BoG) on 29th November, 2023 at National Agricultural Research Centre Islamabad. Chairman PARC, Dr. Ghulam Muhammad Ali and other esteemed members of BoG are also present at the occasion.



Dr. Kauser Abdulla Malik, Caretaker Federal Minister for NFS&R, Dr. Ghulam Muhammad Ali, Chairman, PARC, Dr. Iqrar Ahmad Khan, VC, University of Agriculture Faisalabad, Mr. Noor Muhammad Baloch, DG, Agriculture Research Sindh sitting at the stage during a one day workshop on Climate-Resilient high yielding and quality rice development at NARC

## New developed rice varieties to ensure growers, exporters prosperity

National Institute for Genomics and Advanced Biotechnology has developed next level four rice varieties to enhance per-acre crop output and farm income, particularly the income of medium and small farmers. The yield potential of these new developed varieties is about 90-110 mounds per-acre against the conventional varieties, which have potential of only 40 to 50 mounds per-acre.

New developed rice varieties can ensure prosperity to both growers and exporters and can achieve food security and poverty reduction in Pakistan. New developed varieties are of fine quality with extra-long/ long grain, climate resilient and is expected to boost the production and foreign exchange earning of Pakistan. Pakistan already

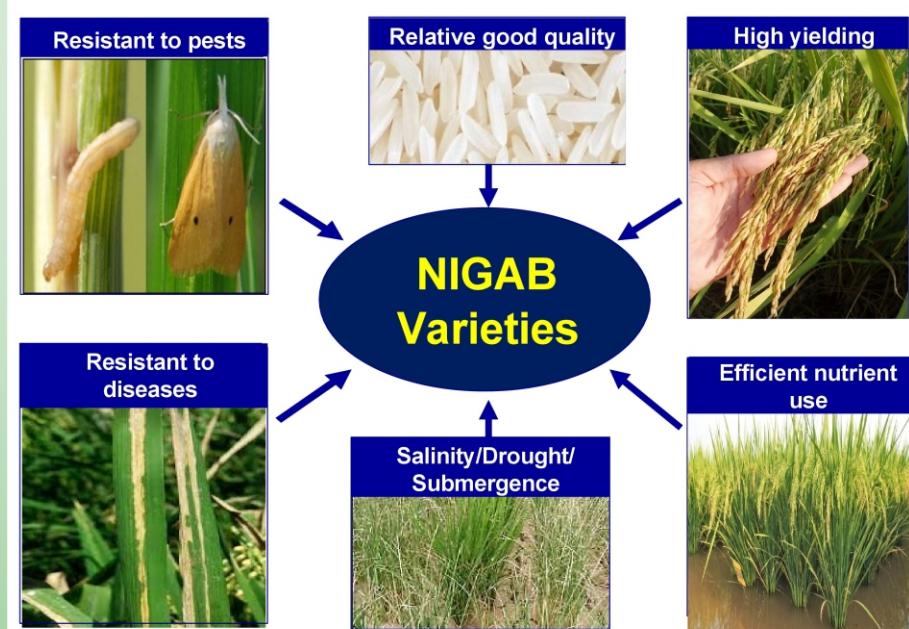
fetching significant amount of export earning of rice and it is expected to be increased due to introduction of these new developed varieties. Variety Evaluation Committee (VEC) already recommended these four rice varieties which are now in process of approval from provincial seed councils. These next level rice varieties were developed by NIGAB, NARC under the dynamic and vibrant leadership and scientific guidance of Chairman PARC, Dr. Ghulam Muhammad Ali by applying the concept of Breeding by Design (BbD) and High throughput Phenotyping and Sequencing methodologies.

These rice varieties have been developed with favourable allelic combinations for resistance against different diseases and pests.

Furthermore, by combining advantageous genes for salinity, heat and flood tolerance, these varieties have gained greater climate resilient. These extra-long/long grain rice varieties have excellent potential to efficiently utilize nutrients and maintain its grain and milling quality to produce higher paddy yield in comparison to already cultivated rice varieties. These newly developed rice varieties of NIGAB with exceptional unique qualities will increase farm income and Pakistan's earnings in foreign exchange.



Dr. Ghulam Muhammad Ali, Chairman, PARC highlighting the research achievements on Sep.28



Dr. Ghulam Muhammad Ali, Chairman, PARC, Dr. Iqrar Ahmad Khan, VC, University of Agriculture Faisalabad and others scientists during their visit to NIGAB stall at NARC on Sep.28



## GM ALI-5



### Characteristics

Days to Maturity	100-105
Plant Height (cm)	125
Tillers/Plant	35-40
Spikelets/Panicle	210-250
1000 Grain Weight (g)	31.63
Grain Length (mm)	8.3
Bacterial Blight	Moderately Resistant
Leaf Folder, Stem Borer and BPH	Resistant
Drought, Salinity, Submergence Cold and Heat	Tolerant
Yield Potential (Maunds/acre)	115

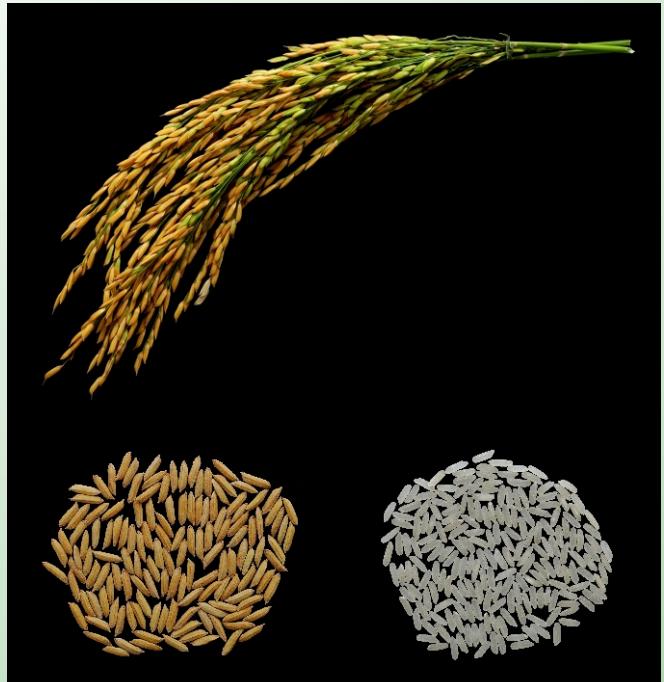
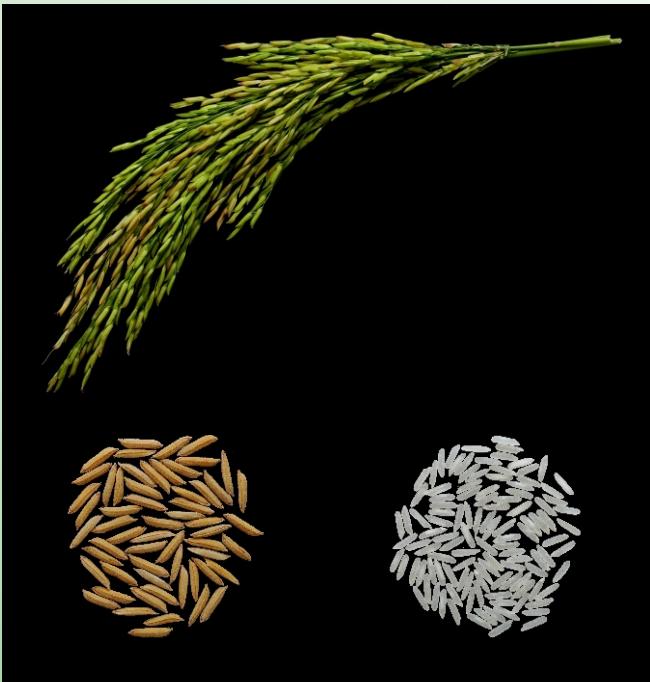


## KM-52



### Characteristics

Days to Maturity	85-90
Plant Height (cm)	102
Tillers/Plant	35-40
Spikelets/Panicle	202-240
1000 Grain Weight (g)	21.18
Grain Length (mm)	6.6
Bacterial Blight	Moderately Resistant
Leaf Folder, Stem Borer and BPH	Resistant
Drought, Salinity, Submergence Cold and Heat	Tolerant
Yield Potential (Maunds/acre)	125





## GM ALI-76



### Characteristics

Days to Maturity	85-90
Plant Height (cm)	100
Tillers/Plant	28
Spikelets/Panicle	207-223
1000 Grain Weight (g)	20.74
Grain Length (mm)	7.40
Bacterial Blight	Moderately Resistant
Leaf Folder, Stem Borer and BPH	Resistant
Drought, Salinity, Submergence Cold and Heat	Tolerant
Yield Potential (Maunds/acre)	115

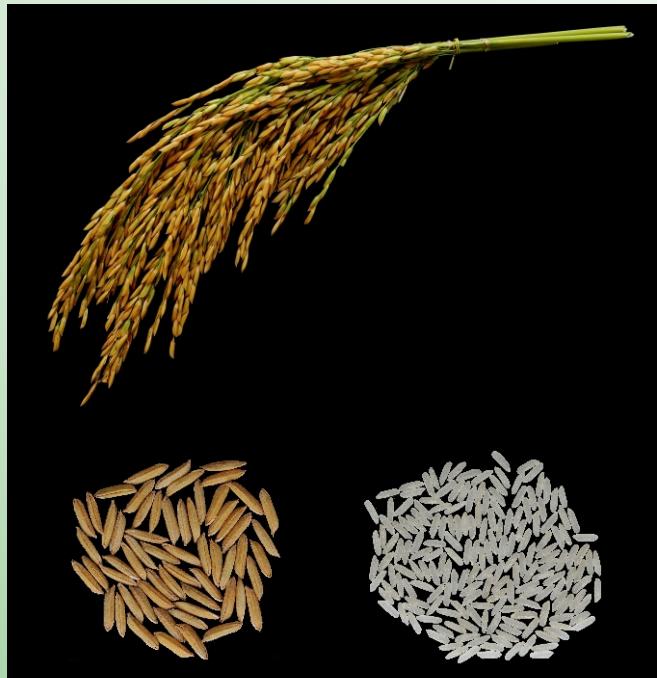


## GM ALI-48



### Characteristics

Days to Maturity	85-90
Plant Height (cm)	100
Tillers/Plant	35-45
Spikelets/Panicle	175-216
1000 Grain Weight (g)	23.29
Grain Length (mm)	7.5
Bacterial Blight	Moderately Resistant
Leaf Folder, Stem Borer and BPH	Resistant
Drought, Salinity, Submergence Cold and Heat	Tolerant
Yield Potential (Maunds/acre)	125





Govt committed to ensure self-sufficiency in Soybean: Dr. Kauser

## National Workshop Soybean Production in Pakistan

December 18, 2023

Islamabad



ISLAMABAD: PARC organized "National Workshop on Soybean Production in Pakistan" on Dec. 18. Dr. Kauser Abdulla Malik, Federal Minister for MNFS&R, graced the event as the Chief Guest. Captain (Rtd) Muhammad Mehmood, Federal Secretary of MNFS&R, Ms. Florence Rolle, Country Representative of FAO and Dr. Iqrar Ahmed Khan, Vice Chancellor (UAF) were also in attendance.

During his address to the workshop, Federal Minister for NFS&R emphasized the need to integrate soybean cultivation into the agricultural landscape of the country while ensuring its ecological compatibility. Additionally, he emphasized the significance of ensuring soybean production economically feasible for farmers. Federal Minister also

underscored the importance linkages between soybean production and its stakeholder like poultry and solvent industry, which heavily relies on soybean as a crucial ingredient. He praised PARC for its dedication in emphasizing the importance of soybean production and thanked FAO for their consistent support to Pakistan's agricultural sector. Federal Secretary for MNFS&R, Captain (Rtd.) Muhammad Mehmood in his address said that Soybean is one of the major contributor in the import bill and we have to indigenize the production of Soybean, along with other commodities, to reduce the import bill. He said that we need to devise a soybean-2030 plan to achieve self-sufficiency in Soybean production. In his keynote address, Dr. Ali

extended a warm welcome to the esteemed guests and stressed on the plan for self-sufficiency in soybean production.

He was of the view that all the resources are there to materialize the plan and there is a need to fully harness the available resources. This initiative holds immense importance as it has the potential to save nation billions of dollars spent on importing soybeans. Chairman PARC also highlighted the possibilities and action plan of soybean cultivation in Balochistan.

Ms. Florence Rolle reiterated the organization's commitment to ensuring food and nutritional security and emphasized the significance of integrating farmers in the process to achieve self-sufficiency in agriculture sector.

### The Honorable Chairman, PARC vows to improve Oilseed and Sugar Crops

ISLAMABAD: The Variety Evaluation Committee (VEC) recommended 04 new sunflower hybrids, 03 Mustard varieties/hybrids and 1 variety of each soybean, rapeseed, groundnut while 2 varieties of sugarcane for commercial cultivation in the potential ecologies.

The VEC meeting on Oilseed and Sugar Crops was held at PARC on Oct. 02. The meeting was presided over by Dr. Imtiaz Hussain, Member (PSD)/Chairman (VEC) and attended by the committee members belonging to various public and private sector organizations and policy makers.

In the meeting, 21 proposals for Soybean, Canola, Rapeseed, Mustard, Sunflower, Groundnut, and Sesame

candidate varieties/hybrids as well as 04 proposals of sugarcane were assessed. After thorough evaluation and discussion, the committee recommended 4 new sunflower hybrids, 3 Mustard varieties/hybrids, 1 variety each of soybean, rapeseed and groundnut while 2 varieties of sugarcane for potential ecologies. During the opening remarks, before the formal VEC meeting. Dr. Ghulam Muhammad Ali, Chairman PARC, appreciated the efforts of all stakeholders being undertaken for uplifting the crops' productivity in general and oilseeds in particular. He also highlighted the importance of public-private partnership.



Dr. Ghulam Muhammad Ali chairing Oilseed Variety Evaluation Committee meeting at PARC



## PICTURES' GALLERY



Dr. Ghulam Muhammad Ali, Chairman PARC during an interview with the ABN news, discussion the notable accomplishments of PARC in the realms of agricultural research and innovation



Dr. Ghulam Muhammad Ali, Chairman, PARC chairing the Annual Wheat Planning and Review meeting at NARC on Oct.09.



Dr. Ghulam Muhammad Ali, Chairman, PARC exchanging letter of intention with Mr. Li Zhaohu president Huazhong Agricultural University P.R. China at NARC



Dr. Kauser Abdullah Malik, Federal Minister (MNFS&R) in a meeting with Dr. Ghulam Muhammad Ali, Chairman, PARC during his visit to PARC on Oct.19



A group photo of Dr. Ghulam Muhammad Ali, Chairman PARC and significant faculty members attended Public Defence of PhD student of PGB, Sania Begum, at PIASA, NARC on Dec. 29



Training on climate smart agriculture technology & policies at NARC on Oct. 10-11



A group photo of Dr. Ghulam Muhammad Ali, Chairman PARC and significant faculty members attended Viva Voce Examination of PhD student of PGB, Safeena Inam, at PIASA, NARC on Dec. 29



Joint PARC-ZTBL Webinar on Climate Resilient Agricultural Practices for Food Security at PARC on Oct.10



## Aeroponic potato projects to pave ways for self-sufficiency in seed: Dr. Ali



Dr. Ghulam Muhammad Ali, Chairman PARC and Dr. Cho Gyoung Rae, Project Director KOPIA Pakistan Centre signing TCPs for the construction of Green/Screen houses for Pakistan-Korea joint program on Certified Seed Potato Production System at NARC

ISLAMABAD: Pakistan and Republic of Korea are working jointly on agriculture technology transfer projects for seed potato production through aeroponics, fodder production, chili drying and improvement in artificial insemination in cattle. These projects are being implemented jointly by Korea Program on International Agriculture (KOPIA) and Pakistan Agricultural Research Council (PARC). Technical Cooperation Projects (TCPs) were signed for the construction of aeroponic green houses, oat and rye grass seed production and artificial insemination using Korean Holstein Sexed Semen in Cattle.

During the signing ceremony of the Technical Cooperation Projects (TCPs), Dr. Ghulam Muhammad Ali, Chairman, PARC explained that conventional

potato plants typically yield only five tuber seeds, whereas aeroponic plants have the potential to produce 50 to 60 seeds each. Pakistan currently cultivates potatoes on approximately 300,000 hectares of land, yet due to the substandard quality of domestic seeds, the country imports 15,000 to 20,000 tons of potato seeds annually.. On the other hands, by implementing the aeroponic potato seed project, Pakistan could potentially save Rs 2-3 billion each year and attain self-sufficiency in potato seed production. Dr. Ali expressed that through the implementation of fodder seed production and cattle artificial insemination technology, the livestock sector in the country will experience significant growth. He expressed gratitude to the government of the

Republic of Korea for their financial and technical support in the potato sector.

Dr. Cho Gyoungrae, Director of KOPIA-Pakistan Center, presented the outcome of already on-going projects and future work plan of the center. He told that 1574 m<sup>2</sup> aeroponics green houses and 21600 m<sup>2</sup> screen houses will be constructed under the project "Pakistan-Korea Joint Program on Certified Seed Potato Production System" to produce 160,000 tons of certified seed potato annually. He also briefed about seed production of oat and rye grass and Breed Improvement through Efficient Artificial Insemination Services by Using Korean Holstein Sexed Semen in Cattle projects which will be funded by Rural Development (RDA) Korea for three years.



A group photo of Dr. Ghulam Muhammad Ali Chairman, PARC with the participants during the inaugural session of Traveling Rice Seminar/National Uniform Yield Trials Evaluation, 2023 at NIGAB, NARC on Oct. 10.



## Jane Marriott British High Commissioner to Pakistan visited NARC



ISLAMABAD: On the occasion of King Charles III birthday, H.E. Jane Marriott, British High Commissioner to Pakistan visited National Herbarium and Botanical Conservatory at NARC on 3rd Nov. She was briefed about the history and significance of National Herbarium of Pakistan and conservation activities at the Botanical Conservatory. She applauded the contribution of the National Herbarium and Botanical Conservatory in the documentation and conservation of botanical resources in the context of climate change.

She also visited the NIGAB. Dr. Ghulam Muhammad Ali, Chairman PARC, presented a comprehensive exposition of the research endeavors underway at NIGAB. Dr. Ali underscored the pioneering nature of the research conducted at NIGAB, highlighted its substantial contributions to the domains of genomics and advanced biotechnology. While discussing

PARC's recent initiatives, Chairman PARC, shared the institution's most recent findings pertaining four rice varieties, recently approved, which are insect/pest resistance, drought tolerant and high yielding. Chairman PARC also apprised Her Excellency about the ongoing research endeavors aimed at

combating the challenges posed by climate to the flora and fauna of Pakistan. Her Excellency also mentioned British Government's support for Water Governance in Pakistan, emphasizing the importance of utilizing water-saving technologies to efficiently manage irrigation water.

