

Daily Current Affairs

24 August 2026

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Daily Current Affairs Quiz 24 August 2026

Q1. The IRRI South Asia Regional Centre of the International Rice Research Institute is situated in which city of India?

- (a) Hyderabad
- (b) New Delhi
- (c) Varanasi
- (d) Lucknow

Ans.(c)

Sol. The correct answer is (C) Varanasi

Explanation:

- The IRRI South Asia Regional Centre (ISARC) was established in Varanasi, Uttar Pradesh, inside the campus of the National Seed Research and Training Centre (NSRTC).
- ISARC serves as a regional hub for research, education, and development to enhance rice productivity, grain quality, and climate-resilient farming techniques across South Asia.
- The center was established under an agreement signed between the Department of Agriculture, Cooperation and Farmers Welfare (MoA&FW) and IRRI.
- It plays a crucial role in delivering biofortified, drought-tolerant, and flood-tolerant rice varieties suited to the agro-climatic conditions of South Asian nations.

Information Booster:

- The International Rice Research Institute (IRRI) headquarters is located in Los Baños, Laguna, Philippines, founded in 1960.
- ISARC Varanasi features advance laboratories like the Centre of Excellence in Rice Value Addition (CERVA) for grain quality evaluation.
- High-yielding flood-tolerant varieties like Swarna-Sub1 were developed through collaborative frameworks involving IRRI and Indian scientists.

Additional Knowledge:

- Hyderabad (Option A): Hosts ICAR-IIRR and ICRISAT (International Crops Research Institute for the Semi-Arid Tropics).
- New Delhi (Option B): Houses ICAR headquarters, IARI, and Indian Council of Medical Research (ICMR).
- Lucknow (Option D): Home to ICAR-Indian Institute of Sugarcane Research (IISR) and CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP).

Q2. Which institution in Hyderabad is associated with the development and testing of the genome-edited rice varieties?

- (a) ICAR-IARI
- (b) ICAR-IIRR
- (c) ICAR-CIAE
- (d) ICAR-NDRI

Ans.(b)

Sol. The correct answer is (B) ICAR-IIRR

Explanation:

- The Indian Council of Agricultural Research - Indian Institute of Rice Research (ICAR-IIRR) is situated in Rajendranagar, Hyderabad.
- ICAR-IIRR was instrumental in developing and field-testing innovative genome-edited rice varieties, including DRR Dhan 100 (Kamala), using modern gene-editing tools like CRISPR-Cas9.
- These genome-edited crop developments focus on essential traits such as enhanced nitrogen-use efficiency, water saving, disease resistance, and high yield under climate stress.
- The institute conducts multi-location evaluation trials to validate agronomic improvements and safety parameters prescribed by bio-safety frameworks.

Information Booster:

- ICAR-IIRR was originally established as the All India Coordinated Rice Improvement Project (AICRIP) in 1965 and upgraded to a full institute to coordinate rice research nationwide.
- The Ministry of Environment, Forest and Climate Change (MoEFCC) exempted Site-Directed Nuclease (SDN-1 and SDN-2) genome-edited plants from strict GMO regulations, accelerating agricultural innovations.
- CRISPR-Cas9 allows precise modifications in targeted genes without introducing foreign DNA from other organisms, making it distinct from traditional Transgenic/GMO technologies.

Additional Knowledge:

- ICAR-IARI (Option A): Indian Agricultural Research Institute located in New Delhi, premier institute for agricultural research and education (famous for Pusa varieties).
- ICAR-CIAE (Option C): Central Institute of Agricultural Engineering located in Bhopal, MP, dedicated to farm mechanization and post-harvest technology.
- ICAR-NDRI (Option D): National Dairy Research Institute located in Karnal, Haryana, focusing on dairy technology and cattle breeding research.

Q3. Consider the following statements regarding the “Minus 5 and Plus 10” formula for rice production:

1. It aims to reduce the area under rice cultivation by 5 million hectares.
2. It aims to increase rice output by 10 million tonnes.
3. It focuses on increasing productivity per hectare on the remaining land.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans.(d)

Sol. The correct answer is (D) 1, 2 and 3

Explanation:

- Statement 1 is correct: The 'Minus 5 and Plus 10' vision strategy proposes reducing water-intensive rice cultivation area by approximately 5 million hectares.
- Statement 2 is correct: Despite reducing land area, the policy targets increasing total national rice production by 10 million tonnes.
- Statement 3 is correct: This goal is achieved by significantly augmenting per-hectare yield through genome-edited, high-yielding, climate-resilient, and disease-resistant seeds.
- This formula promotes agricultural diversification and water conservation in regions experiencing severe groundwater depletion, like Punjab and Haryana, without compromising national food security.

Information Booster:

- Paddy/Rice cultivation requires around 3,000 to 5,000 liters of water to produce just 1 kilogram of grain via traditional flooding techniques.
- Diversifying the diverted 5 million hectares into pulses, oilseeds, and millets addresses critical nutritional security and reduces vegetable oil imports.
- Direct Seeded Rice (DSR) and System of Rice Intensification (SRI) are key agronomic technologies supporting this sustainable transition.

Additional Knowledge:

- India is the world's second-largest producer of rice after China and the leading exporter of rice globally.
- High dependence on traditional paddy farming has severely depleted the Indo-Gangetic plain aquifer system, necessitating strategic crop reallocation.

Q4. DRR Dhan 100 (Kamala) and Pusa DST Rice 1 were developed from which respective parent rice varieties?

- (a) Samba Mahsuri and Cotton Dora Sannalu (MTU1010)
- (b) Cotton Dora Sannalu and Samba Mahsuri
- (c) Basmati 370 and IR8
- (d) IR8 and Cotton Dora Sannalu (MTU1010)

Ans.(a)

Sol. The correct answer is (A) Samba Mahsuri and Cotton Dora Sannalu (MTU1010)

Explanation:

- DRR Dhan 100 (Kamala) was genetic modification/edited from the popular parent rice variety Samba Mahsuri (BPT 5204) to enhance nitrogen use efficiency.
- Pusa DST Rice 1 was engineered from the high-yielding parent variety Cotton Dora Sannalu (MTU1010) to introduce drought and salt stress tolerance.
- Editing elite background varieties ensures that desirable agronomic traits (like fine grain quality, consumer preference, and baseline yield) are completely retained while targeted weaknesses are resolved.
- Using CRISPR-Cas9 site-directed mutagenesis avoids backcrossing cycles required in conventional breeding, cutting variety development timelines drastically.

Information Booster:

- Samba Mahsuri (BPT 5204) is famous across South India for its fine grain texture and cooking quality, but requires significant fertilizer inputs.
- MTU1010 (Cotton Dora Sannalu) is a widely grown short-duration mega-variety in India known for high yields.
- The Indian Council of Agricultural Research (ICAR) leads national crop improvement programs using speed breeding and biotechnology.

Additional Knowledge:

- Basmati 370 (Option C): A classic aromatic basmati rice variety traditional to Northern India.
- IR8 (Option D): Historical semi-dwarf high-yielding rice variety developed by IRRI that triggered the Green Revolution in Asia during the 1960s.

Q5. Which genome-editing technology is associated with the development of DRR Dhan 100 and Pusa DST Rice 1?

- (a) PCR
- (b) ELISA
- (c) CRISPR-Cas9
- (d) DNA fingerprinting

Ans.(c)

Sol. The correct answer is (C) CRISPR-Cas9

Explanation:

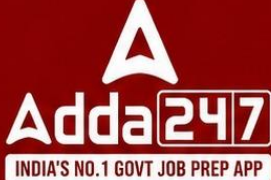
- DRR Dhan 100 (Kamala) and Pusa DST Rice 1 are pioneering genome-edited rice varieties developed using CRISPR-Cas9 site-directed mutagenesis tools.
- CRISPR-Cas9 allows molecular biologists to make precise edit cuts in target sequences of the plant genome to enhance nutrient use efficiency, drought tolerance, and yield without introducing foreign genes.
- DRR Dhan 100 demonstrates high nitrogen-use efficiency (NUE), allowing farmers to reduce chemical fertilizer inputs while keeping yields high.
- Pusa DST Rice 1 features improved salt and drought tolerance mechanism targeted at degraded and moisture-stressed soils.

Information Booster:

- CRISPR stands for Clustered Regularly Interspaced Short Palindromic Repeats, paired with Cas9 (a DNA-cutting enzyme).
- Emmanuelle Charpentier and Jennifer A. Doudna were awarded the Nobel Prize in Chemistry in 2020 for discovering the CRISPR-Cas9 genetic scissors.
- India categorizes gene-edited crops under SDN-1, SDN-2, and SDN-3; SDN-1 and SDN-2 avoid foreign gene insertions and undergo streamlined regulatory approval.

Additional Knowledge:

- PCR (Option A): Polymerase Chain Reaction is a technique used to amplify specific DNA fragments exponentially for analysis.
- ELISA (Option B): Enzyme-Linked Immunosorbent Assay is an immunological assay used to detect antibodies, antigens, or proteins.
- DNA Fingerprinting (Option D): A analytical technique used to determine genetic identity and relationships between organisms based on unique DNA patterns.

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