

12. Pulses for People and the Planet

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Introduction

World Pulses Day is celebrated annually on February 10th to raise awareness about the nutritional and environmental benefits of pulses, also known as legumes. The United Nations General Assembly proclaimed February 10th as World Pulses Day, following the success of the International Year of Pulses (IYP) in 2016. The IYP highlighted the significant role of pulses in addressing global issues, including hunger, malnutrition, and environmental sustainability. World Pulses Day serves as a platform to continue promoting the benefits of pulses and their integration into global food systems. Pulses are a vital component of sustainable agriculture, playing a crucial role in achieving global food security, enhancing human health, and mitigating climate change. This international event underscores the significance of pulses as a sustainable crop that benefits both people and the planet.

What Are Pulses?

Pulses are edible seeds from leguminous plants that grow in pods. They include a wide variety of crops such as lentils,

chickpeas, dry beans and dry peas. Unlike other crops, pulses are distinct because they are:

- High in protein, dietary fibre and essential nutrients.
- Low in fat and cholesterol-free.
- Naturally gluten-free, making them a vital dietary component for people with gluten intolerance.
- Nitrogen-fixing crops that enrich soil fertility.

Pulses for People

1. Nutritional Benefits

Pulses are often referred to as "superfoods" due to their exceptional nutritional profile:

High Protein Content: Pulses provide a rich source of plant-based protein, making them indispensable in vegetarian and vegan diets

Rich in Micronutrients: They are excellent sources of iron, potassium, folate and magnesium

Dietary Fibre: Pulses promote digestive health and help prevent chronic diseases, including diabetes and cardiovascular disorders.

- **Low Glycemic Index:** Pulses help manage blood sugar levels, benefiting people with diabetes.



2. Cultural and Culinary Importance

Pulses are a staple food in many cultures worldwide. From dal in India to hummus in the Middle East and refried beans in Mexico, pulses play a significant role in traditional cuisines. Their versatility allows them to be incorporated into a variety of dishes, including soups, salads, stews, and desserts.

3. Economic Empowerment

Pulses are a crucial source of income for smallholder farmers, particularly in developing countries. Their production supports rural livelihoods, promotes gender equality (as many women are engaged in

pulse farming) and enhances food security in vulnerable regions.

Pulses for the Planet

1. Sustainable Agriculture

Pulses contribute significantly to sustainable farming practices:

- **Nitrogen Fixation:** Pulses fix atmospheric nitrogen into the soil, reducing the need for synthetic fertilisers.
- **Crop Diversification:** Rotating pulses with other crops helps improve soil health and prevent pests and diseases.
- **Water Efficiency:** Pulses require significantly less water than other protein-rich crops, making them ideal for water-scarce regions.

2. Mitigating Climate Change

Pulses play a vital role in reducing greenhouse gas emissions:

- **Low Carbon Footprint:** The production of pulses generates fewer greenhouse gases compared to animal-based protein sources.
- **Carbon Sequestration:** Pulse crops enhance carbon storage in soils, contributing to climate change mitigation.

3. Biodiversity Conservation

Growing pulses promotes biodiversity by supporting a variety of beneficial microorganisms, insects and wildlife. This

fosters resilient ecosystems capable of adapting to environmental changes.

World Pulse Research Institutes

Several global research institutes are dedicated to pulse research, development and promotion. These institutions work on improving pulse crop yields, combating pests and diseases and enhancing the nutritional quality of pulses.

1. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

- **Country:** India
(Headquarters in Hyderabad)
- **Focus:** Development of dryland crops, including chickpeas, pigeon peas and lentils.

2. Centro Internacional de Agricultura Tropical (CIAT)

- **Country:** Colombia
- **Focus:** Research on common beans and sustainable agricultural practices.

3. International Centre for Agricultural Research in the Dry Areas (ICARDA)

- **Country:** Lebanon
- **Focus:** Breeding and agronomy of pulses such as

lentils and faba beans for dryland regions.

4. Australian Centre for International Agricultural Research (ACIAR)

- **Country:** Australia
- **Focus:** Pulse breeding programs and collaborations in developing countries.

5. North Dakota State University Pulse Research Program

- **Country:** USA
- **Focus:** Research on dry peas, lentils and chickpeas.

6. Pulse Canada

- **Country:** Canada
- **Focus:** Promotion of Canadian pulses and innovation in pulse-based products.

7. Indian Institute of Pulses Research (IIPR)

- **Country:** India
- **Focus:** Development of high-yielding pulse varieties and disease management.

8. Centre for Legumes in Mediterranean Agriculture (CLIMA)

- **Country:** Australia
- **Focus:** Research on pulses adapted to Mediterranean climates.

9. Ethiopian Institute of Agricultural Research (EIAR)

- **Country:** Ethiopia
- **Focus:** Development of improved pulse varieties to enhance food security.

10. International Institute of Tropical Agriculture (IITA)

- **Country:** Nigeria
- **Focus:** Research on cowpeas and other tropical pulses.

Primary Pulse Research Institutes of India

1. Indian Institute of Pulses Research (IIPR)

- **State:** Uttar Pradesh
- **Location:** Kanpur
- **Focus:** Development of high-yielding, disease-resistant pulse varieties and advanced agronomic practices.

2. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

- **State:** Telangana
- **Location:** Hyderabad
- **Focus:** Research on pulses such as chickpeas and pigeon peas, along with other dryland crops and sustainable farming practices.

3. National Research Centre on Plant Biotechnology (NRCPB)

- **State:** Delhi
- **Location:** New Delhi
- **Focus:** Biotechnological research for improving pulse crop yields and resilience.

4. Indian Agricultural Research Institute (IARI)

- **State:** Delhi
- **Location:** New Delhi
- **Focus:** Pulse breeding programs and agronomic research as part of broader agricultural advancements.

5. Central Research Institute for Dryland Agriculture (CRIDA)

- **State:** Telangana
- **Location:** Hyderabad
- **Focus:** Developing drought-resistant pulse varieties and dryland agricultural practices.

6. Regional Agricultural Research Station (RARS)

- **State:** Andhra Pradesh
- **Location:** Lam, Guntur
- **Focus:** Research on pulses such as red gram and black gram, with emphasis on regional adaptability.

7. Acharya N.G. Ranga Agricultural University (ANGRAU)

- **State:** Andhra Pradesh
- **Location:** Guntur

- **Focus:** Pulse research and promotion of improved agricultural practices for legumes.

8. **Tamil Nadu Agricultural University (TNAU)**

- **State:** Tamil Nadu
- **Location:** Coimbatore
- **Focus:** Pulse crop improvement, especially black gram, green gram and pigeon pea.

9. **University of Agricultural Sciences (UAS)**

- **State:** Karnataka
- **Location:** Bengaluru and Dharwad
- **Focus:** Pulse research, including chickpeas and pigeon peas, with an emphasis on sustainable practices.

10. **Punjab Agricultural University (PAU)**

- **State:** Punjab
- **Location:** Ludhiana
- **Focus:** Research on pulses such as chickpeas and lentils to improve yields in northern India.

11. **Orissa University of Agriculture and Technology (OUAT)**

- **State:** Odisha
- **Location:** Bhubaneswar
- **Focus:** Regional research on pulses like black gram and green gram.

12. **Mahatma Phule Krishi Vidyapeeth (MPKV)**

- **State:** Maharashtra

- **Location:** Rahuri

- **Focus:** Research on pigeon peas and other pulses suited to semi-arid conditions.

Strategies for Promoting Pulses

1. Policy Interventions

- Governments must implement policies supporting pulse production, research and marketing.
- Subsidies and incentives for pulse farmers can boost cultivation.

2. Technological Advancements

- Investing in improved pulse varieties that are disease-resistant, drought-tolerant and high-yielding.
- Leveraging precision agriculture and digital tools to enhance pulse farming practices.

3. Awareness Campaigns

- Conducting educational programs to promote the nutritional and environmental benefits of pulses.
- Encouraging pulse consumption through school feeding programs and community initiatives.

4. International Collaboration

- Strengthening partnerships among countries, research institutions and international organisations.
- Sharing knowledge and resources to advance pulse research and development globally.

Conclusion

World Pulses Day, observed on February 10 each year, highlights the importance of pulses, including lentils, beans, chickpeas, and peas, in ensuring food security, promoting health, and supporting sustainable agricultural practices. Pulses are rich in protein, fibre and essential nutrients, making them vital for human nutrition while being affordable and accessible. They also benefit the environment by improving soil fertility and requiring less water compared to other crops. This day emphasises the role of pulses in reducing hunger, supporting smallholder farmers and combating climate change. As we celebrate this day, let us reaffirm our commitment to promote the production and consumption of pulses for the benefit of people and the planet. Together, through awareness, innovation and collective action, we can ensure a sustainable and nutritious future for all.