ICRISAT's message for the 2016 INTERNATIONAL YEAR OF PULSES

Dryland pulses like **CHICKPEA** and **PIGEONPEA** contribute towards the new Sustainable Development Goals (SDGs) to reduce poverty and hunger, improve health and gender equity, promote responsible consumption and help adapt to climate change.

Pulses can contribute to the SDGs because they are

Smart Food

GOOD FOR YOU | GOOD FOR THE PLANET | GOOD FOR SMALLHOLDER FARMERS

Pulses are GOOD FOR YOU

High in protein, micronutrients and fiber

Pulses are high in protein. The high dietary fiber lowers risk of diabetes, heart ailments and gastrointestinal diseases. The high iron, manganese and zinc content helps counter iron deficiency anemia – a serious health issue worldwide in women and children.

Pulses are GOOD FOR THE PLANET

Smaller water and carbon footprint

Efficient use of water: Chickpea and pigeonpea need less irrigation and thrive on residual soil moisture.

Improve soil health: Pulse crops fix nitrogen, increase soil microbe diversity, provide green manure through leaf droppings and help conserve top soil. The less fertilizer needed as a result of the naturally added nitrogen, means the carbon footprint is low.

Pulses are GOOD FOR THE SMALLHOLDER FARMER

Resilience, diverse use brings in extra income

Survive weather fluctuations: Chickpea can thrive in desert-like regions; pigeonpea crops hit by unseasonal rain have potential for a second flush.

Diverse food basket and extra income: As an intercrop with cereals and other crops, pulses bring in extra income for farmers and also increase the yield of the main crop.

Diversified uses: Protein-rich pigeonpea leaves and forage are good fodder. Stalks are used for fencing, thatching, making baskets and as fuel. Calorific value of stalks is about half that of the same weight of coal.

ICRISAT Science with a human face
International Crops Research Institute for the Semi-Arid Tropics

Declaring 2016 as the International Year of Pulses

The UN General Assembly declared 2016 as the International Year of Pulses with the aim to heighten public awareness of the nutritional benefits of pulses as a part of sustainable food production aimed towards food security and nutrition.

Pulses are under-recognized for their value and their importance in diversification and complementing other foods. They are critical for both farmers and consumers.

Our work

Dryland pulses like **CHICKPEA** and **PIGEONPEA** have been ICRISAT's mandate crops for more than four decades.

ICRISAT works with partners along the whole value chain of pulses in an integrated and holistic manner to create a win-win situation for the farmer, consumer and the planet.

- ICRISAT is modernizing and leveraging tools to better utilize genetic diversity. The genome sequence of chickpea and pigeonpea was published in Nature Biotechnology in 2012 and 2013, respectively. Work on resequencing of 3,000 chickpea accessions is underway.
- Over a hundred varieties have been released with partners using traditional breeding tools.
- ICRISAT is working on forward breeding to accelerate the incorporation of traits that are important for farmers to manage climate change and improve nutritional security.
- Developed cultivars that are high-yielding, drought tolerant, disease resistant, short duration (as short as 75-80 days) lines and hybrids custom-made for farmers.
- Work is on for developing climate-smart cultivars suitable for mechanical harvesting, inter-cropping with cereals and improving soil health.
- On-farm practices like intercropping and crop rotation to improve soils and increase yields have been tested on farmers' fields with positive results. Techniques to better manage water and soil, including zero tillage are being tested.

ICRISAT works together with local governments in Asia and sub-Saharan Africa, national agricultural research systems, agricultural universities, international and national donor agencies, agribusiness entrepreneurs and private agribusiness companies to empower farmers through cutting-edge science and demand-driven innovation.

Percentage of daily recommended intake found in **100 g of cooked chickpea and pigeonpea**

Cooked chickpea

- 44.5% Folic acid (as folate)
- 24.5% Vitamin E
- 10.5% Thiamin
- 10.3% Vitamin B6
- 4.3% Vitamin K

Cooked pigeonpea

- 28.7% Folic acid (as folate)
- 13.3% Thiamin
- 5.4% Riboflavin
- 3.7% Vitamin B6

Pigeonpea adds

8-16 kg N/ha;

2.5-5 kg P/ha;

13.5-24 kg K/ha

(in entire crop cycle as leaf drop)

More information

Video blog of people from around the world talking on pulses, along with news and updates on pulses: www.icrisat.org/iyp/

Pigeonpea overview exploreit.icrisat.org/page/pigeonpea/687

Chickpea overview exploreit.icrisat.org/page/chickpea/685

ICRISAT
Science with a human face

ICRISAT is a member of the CGIAR Consortium