



# Pulses for a sustainable future

## World Pulses Day 2023

Building on the success of the International Year of Pulses (IYP) in 2016 implemented by FAO and recognising the potential of pulses to further achieve the 2030 Agenda for Sustainable Development, the United Nations General Assembly (UNGA) designated **10 February** as **World Pulses Day (WPD)**. This celebration provides a unique opportunity to raise public awareness about pulses and the fundamental role they play in the transformation of current agriculture into a more efficient, inclusive, resilient and sustainable agrifood systems for better production, better nutrition, a better environment, and a better life, leaving no one behind.

## A Sustainable future with pulses

The world is currently facing serious problems with food and nutrition security: recurrent transboundary diseases and pest and geopolitical instability that affect agricultural production and food value-chains. Pulses can help address these problems and make our future more sustainable by providing an affordable nutrient-dense food that can be stored for a long time; enhancing nutrient cycling and providing critical environmental services and creating economic opportunities for smallholder farmers. Pulses cover all dimensions of sustainability. Thus, including pulses into agrifood systems is key to achieving the Sustainable Development Goals (SDGs).

## Climate change mitigation and adaptation

Pulses can help mitigate climate change and reduce the impact of climate shocks, such as droughts or heavy rainfall. Their integration into cropping cycles optimises the use of synthetic fertilisers, thereby reducing greenhouse gas emissions from agricultural production. Compared with other crops, such as cereals, pulses can increase the carbon sequestration potential of the soil helping to mitigate climate change.

## Soil health and restoration

Pulses are key to resilient farming systems. Not only do they contribute to soil fertility through atmospheric nitrogen fixation, including them in crop rotations can also help to restore poor and degraded soils. Cereals grown in rotation after pulses yield on average 1.5 tonnes more per hectare than those grown without pulses. This is equivalent to the effect of 100 kilograms of nitrogen fertiliser.

## Food security and healthy nutrition

Pulses are a valuable and affordable source of plant protein as well as essential minerals and vitamins. Including pulses in agrifood systems therefore contributes to healthier, more nutritious and diverse diets and can help combat micronutrient deficiencies (Hidden Hunger).

## Ecosystem services

Including pulses in agricultural systems can help to suppress pests, diseases and weeds. Agricultural systems that include pulses ensure a more efficient nutrient use as they require less synthetic fertiliser input and thus, can help reduce the risk of water body contamination through nutrient pollution (eutrophication). In addition, intercropping (growing two or more crops on the same field at the same time) with pulses or including pulses in crop rotations increases agrobiodiversity and provides habitat for insects and other small animals.



## Andean Lupin in Latin America

Andean lupin (*Lupinus mutabilis* Sweet) also known as, among others, tarwi or chocho originated in Andean countries – Peru, Ecuador and Bolivia. It is an ancestral crop that has been cultivated by smallholder farmers in the Andean region for thousands of years. Andean lupin has outstanding nutritional properties including a high protein and oil content. This makes it an excellent source for plant protein, essential amino acids as well as healthy fats, vitamins and minerals. The Andean lupin also contains alkaloids, an anti-nutritional component, that can be reduced through a debittering process. A popular dish made with debittered Andean lupin is called ceviche serrano or ceviche de chocho. Other products derived from the Andean lupin include flour, protein powders, and snacks. In addition to its nutritional benefits, Andean lupin contributes to soil fertility through its ability to fix atmospheric nitrogen. It also grows on poor and marginal soils and is an excellent green manure, helping to restore eroded soils. It forms part of traditional Andean crop rotations such as quinoa-Andean lupin-potato. Due to its high alkaloid content, the Andean lupin also acts as a natural pest repellent in agricultural systems.

## Bambara bean in sub-Saharan Africa

Bambara bean (*Vigna subterranea* (L.) Verdc.), also known as Bambara groundnut, jugo bean and earth pea, to name but a few, is a drought-tolerant pulse grown mainly by subsistence farmers, often women, throughout Africa. Bambara bean is one of the most important legumes in semi-arid regions of Africa and is adapted to adverse agro-climatic conditions. The seeds ripen

underground, similar to peanuts, and are a valuable addition to both human and animal consumption. It is a complete food, meaning that it contains adequate amounts of carbohydrates, proteins and lipids essential for survival. Bambara beans are often intercropped with sorghum, tubers and maize making them an excellent addition to agrobiodiversity. There are a number of ways to prepare and consume Bambara beans. For example, the beans can be dried and cooked, roasted, ground into flour and used to prepare infant feed as well as porridges. Further, the beans have potential health benefits and are used in traditional medicine. Despite being a resilient and versatile crop with excellent nutritional properties, Bambara bean is still under-utilised and under-researched.

## World Pulses Day and International Year of Millets

The amino acids found in pulses complement those found in cereals; for this reason, it is important to consume pulses with cereals. The year 2023 has been designated the **International Year of Millets (IYM 2023)**. There are many links and synergies between pulses and millets. Both crop groups contribute to food security and to diversified, nutritious and healthy diets. They are also adapted to adverse climatic conditions and can grow on poor and marginal soils with low inputs. Combining millets and pulses through intercropping or crop rotation can boost sustainability and increase production and agrobiodiversity. Pulses and millets can also be combined in a number of tasty and healthy dishes such as millet congee served with cooked pulses like green lentils.



**#LovePulses**  
for a healthy  
diet and planet.

### Acknowledgement:

FAO's Plant Production and Protection Division is grateful to the contribution provided by Pauline Höhnelt and Teodoro Calles and the review provided by Ronnie Brathwaite. Special thanks are due to Ginevra Virgili for design support. For more information please contact [World-Pulses-Day@fao.org](mailto:World-Pulses-Day@fao.org).

[fao.org/world-pulses-day](https://fao.org/world-pulses-day)

**#WorldPulsesDay**  
**#LovePulses**



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence