

# The secret life of pulses

If you've ever had the fun of planting a bean in a jar and watching it grow, you'll know that everything seems easy and straightforward. But there is much more to a plant than meets the eye.

## 1 The seed: A baby and its lunch box

Seeds contain a tiny baby plant, called an embryo. This embryo is packed away inside the seed by the mother plant. It already has some tiny leaves, a bit of stem, and a miniature root. When a baby plant starts growing, it isn't ready to make food for itself yet. That is why the mother plant packs a "lunchbox" for it in the rest of the seed, with all the nutrients it needs to survive and grow until it can take care of itself.

## 2 Birth of a new life: check that it's safe before you come out

The embryo has to know that conditions are right for it to grow and survive once it wakes up. It will only start growing (germinate) once there is:

- enough water (you'll see beans swell lots from absorbing water –before they germinate),
- oxygen (to unlock energy from the food in the cotyledons),
- the right light and temperature.

### Fun fact:

Why do bean plants come out of the ground bent over double? The shoot's tip is very sensitive and can be hurt by the soil. By bending instead of coming up straight, the tip is protected by being pulled up through the soil, instead of being pushed out.

Beans have "sleep movements." They move their leaves horizontally during the day to catch as much sun as possible, and fold them downwards at night when they "sleep."

## 2016 International Year of Pulses

The United Nations declared 2016 the International Year of Pulses so that they can tell everyone about the high nutritional content of pulses. Because pulses can do so much good for the world, they will motivate people to eat pulses as a source of protein and help solve farmers' pulse-growing problems.

## 3 Growing leaves to make yummy food

Pulses start off with two leaves, and once they are aboveground, the plant can make its own food from sunlight (photosynthesis). The leaves act like a solar panel, trapping the energy from sunlight and storing the energy in a chemical called glucose. Glucose is the building block of sugar and the other types of food that plants make.

## 4 Flowering: building the next generation

Seeds are built inside the female part of a flower. Pulses are dried seeds and they are built into pods with 1-12 seeds per pod. In pulses, the seeds are packed with lots of vitamins, protein, oils, energy, calcium and iron for the baby plant to use, but this also makes them really healthy for us to eat! This food store is found in the two thick halves of pulse seeds (cotyledons), which you can see when you split a bean down the middle.

PULSES



THE FUTURE OF FOOD.

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