

How is the kernel of a seed fertilized within? Pollination

The kernel of a seed is fertilized through a unique biological process called **double fertilization**, which occurs inside the ovary of a flowering plant (angiosperm).

The Step-by-Step Fertilisation Process

1. **Pollination and Germination:** A pollen grain lands on the female part of the flower (the stigma). It germinates and grows a long tube, called a **pollen tube**, down through the style to reach the ovary.
2. **Entering the Ovule:** The pollen tube enters the ovule (the structure that becomes the seed) through a tiny opening called the **micropyle**.
3. **The Double Fertilisation Event:** The pollen tube releases **two male sperm cells** into the embryo sac of the ovule. This triggers two separate fusions:
 - **First Fusion (The Embryo):** One sperm cell fuses with the female egg cell to form a diploid zygote. This zygote develops into the **embryo** (the core "kernel" or baby plant).
 - **Second Fusion (The Food Source):** The second sperm cell fuses with two central maternal nuclei (polar nuclei) to form a triploid cell. This cell develops into the **endosperm**, which acts as the nutrient-rich food supply surrounding the embryo.

Together, the fertilized embryo and its supporting endosperm mature into the complete kernel inside a protective seed coat.

Would you like to explore **how this process differs in non-flowering plants** (like pine trees), or look closer at the **anatomy of a specific seed** like corn or a bean?

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