

More than 3,000 plants — including some organic crops — developed by mutating seeds using radiation or chemicals. Here's an explainer

[Plant mutation breeding](#), also called variation breeding, is a method that uses physical [radiation](#) or chemical means to induce spontaneous genetic variation in plants to develop new crop varieties. “Mutation” is the source of most genetic variation and the motor of evolution.

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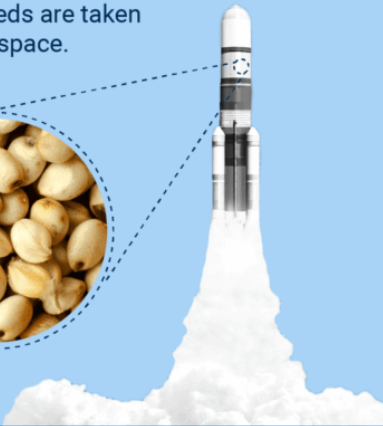
Plant varieties bred using radiation are equally safe as the varieties developed through conventional or [marker assisted breeding](#), since radiation does not pass on to further generations of the bred variety. Thus, plants can be bred for many generations to achieve the best result without suffering damage or becoming radioactive. Many crop varieties developed through mutation breeding have been grown all over the world in the last 100 years. Check out a few examples from [Bulgaria](#), [China](#), [Cuba](#), [Uganda](#) and [other countries](#).

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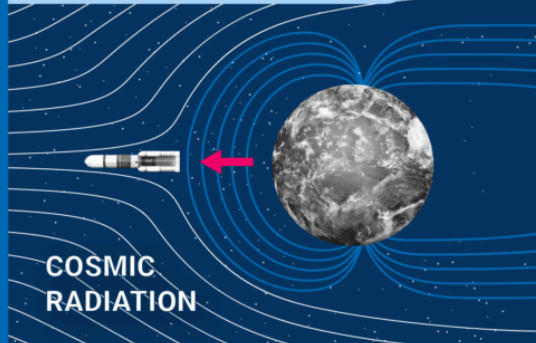
Space mutagenesis, is a method that involves the use of [cosmic rays](#) in outer space to induce spontaneous mutations. Scientists typically send plant seeds into space, and then grow, screen and breed them once they return to Earth. As in conventional mutation breeding, scientists try to identify the plants with the most useful traits, and those which may provide an advantage over more traditional crop varieties. Wheat, rice and cotton have already visited space.

Space Mutagenesis

1 Plant seeds are taken to outer space.



2 Radiation from cosmic rays is used to induce mutation.



3 Once returned to Earth, the seeds are germinated in laboratories and observed to see whether useful mutations have been induced.



4 Scientists analyse whether mutations induced in the harsh conditions of space can help to breed plants, more enduring to the harsh conditions on Earth, such as those caused by climate change.



NuclearExplained

Credit: Adriana Vargas via

IAEA

[This is an excerpt. Read the original post here](#)