GENE EDITING FACTS

To achieve our vision of "a world where the best quality seed is accessible to all, supporting sustainable agriculture and food security", ISF believes that science and innovation must continue to flourish. The latest plant breeding methods can accelerate the improvement of seed varieties

Plant breeding is safe by design[1]

Plant breeders and farmers strive to produce safe and sustainable food while protecting, or even enhancing, the environment. With these shared values, plant breeders ensure that new varieties, including those that were developed with the use of gene editing, meet safety, quality, and environmental standards. The history of plant breeding is built on the foundation of the long-established quality management practices, which include multiple field trials, screening for unwanted plant characteristics, and selecting only those plants with the desired attributes.

SHARING OUR VALUES

Just as we value safety as consumers, all partners in the agricultural food chain have a shared responsibility to produce safe food that has minimal impact on the environment. This chain starts with plant breeders, developing the seeds farmers will use to grow crops for food, feed, fiber, and fuel, and to develop new, better-tasting, and more nutritious plant varieties for consumers.

Plant breeders use recent advancements such as gene editing to develop improved crops that are important to the agriculture food chain and the consumer, all while using well-documented and thorough quality management processes. As much as plant breeding is a process of selecting beneficial plant characteristics, it's also a process of eliminating undesired characteristics.

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A SERIES OF CHECKS AND BALANCES

In the same way researchers develop other complex products like vehicles or medicine, plant breeders spend time understanding how a gene edited crop will be used, taking into account any safety and risk considerations.[2]

Before any new plant variety, including those developed using gene-editing, is made commercially available, it undergoes a series of tests. This includes geographic adaptation trials—ensuring the gene edited plant can grow in different areas and climates without adversely affecting the crop's performance. Plant breeders also evaluate how the gene edited crop needs to be safely processed and stored, addressing any negative consequences during processing.

If at any point during these tests, a new plant variety fails to meet expectations, those plants are discarded until the plant breeding process produces a safe and more adapted variety. This same process is applied when gene editing is one of the breeding methods used and therefore these products are as safe as any other products on the market.

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THE BOTTOM LINE

Plant breeding is built upon a long history of safety

Plant breeders work to produce crops, including those developed with the use of gene editing, that are safe for humans, animals, and the environment—while demonstrating the positive characteristics farmers and consumers want. Using the proven tools of the breeding and selection, this process enables a more diverse, resilient, and efficient food system that will continue to benefit generations to come.

International Seed Federation
Seed is Life

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2. Wolt, J.D. (2019). Current risk assessment approaches for environmental and food and feed safety assessment. *Transgenic Res,* 28, 111–117). https://doi.org/10.1007/s11248-019-00140-7