

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 for the benefit of agriculture and consumers globally.

Gene editing research is diverse and global

Gene editing is revolutionizing plant sciences and its applications in agriculture. In the last decade alone, crop-focused gene editing research projects have grown exponentially. As the field of gene editing expands, so is access to the gene editing methods and the ability for a wide variety of public and private organizations across the globe to develop their own crops using gene editing techniques.

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EFFORTS TO EXPAND ACCESS

Organizations of all sizes have the opportunity to create innovative solutions using gene editing and to benefit from the results. While the discovery and development of the CRISPR Cas-9 gene editing method is most well-known and notable due to its efficiency, there are additional gene editing tools available.

Academic institutions generally do not need a license to use CRISPR Cas-9 if used to conduct basic research. Production of a commercial product by either public or private developers would be subject to license requirements. In recent years, many academic researchers have leveraged shared gene editing tools to conduct safety and environmental studies, which have further demonstrated the benefits of gene editing.¹

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DIVERSE AND GLOBAL RESEARCH

Gene edited products are developed by companies of all different sizes. In fact, the first commercialized gene edited plants, high oleic soybeans in the United States and high GABA tomatoes in Japan, were developed by two smaller companies.

In addition to commercial development, gene editing research across the globe has expanded to cover a wide array of crops, including many smaller crops. Since the mid-1990s, plant breeders have published thousands of peer-reviewed research publications, conducted primarily by public institutions.¹ Likewise, studies focused specifically on bringing gene edited products into the marketplace have well surpassed 200 peer-reviewed publications. That number continues to grow—largely due to research at public institutions, representing 25 different countries.^{2,3,4}

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THE BOTTOM LINE

Gene editing promotes expanded involvement and more choices

One of the key benefits of gene editing tools like CRISPR is its ease of implementation. This means that up-front investment costs are not a barrier to small entities to develop innovative products. This enables public sector institutions, smaller companies, and start-ups to leverage these tools to conduct research and develop improved crops. There's no question that gene editing methods are widely accessible, evident by the number and diversity of gene edited crops under development. These efforts are accelerating global research and crop development which benefits farmers, consumers, and the world.