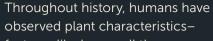
GENE EDITING

Learning Lessons from Nature

www.

Modern society is built on a system of agriculture made possible by the cultivation of plants. Those plants have physical characteristics determined by their genetic structure. In other words, their insides determine their outsides.



Close Observation

features like how well they withstood weather and pests, appearance of leaves and flowers, quality of fruit-to decide which we preferred to plant again.

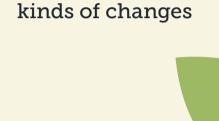
AN INTRODUCTION

As our understanding of genetics has evolved, so has our ability to make improvements to plants. We are now able to

base those decisions on what we see inside the plant, as well

to Gene Editing

as what we see on the outside. One of the tools that enables this is gene editing, which allows plant scientists to make precise improvements within a plant's DNA. Gene editing can be



used to make three



Break genetic linkages between genes conferring positive traits (like

desirable combinations of traits.

disease resistance) and those conferring less desirable traits (like drought sensitivity), generating plant varieties with the most

Enable a beneficial characteristic (such as drought tolerance or improved nutrition)

Following Nature's

Similar to natural selection, mankind has made decisions about which plants to cultivate, seeking crops that will best adapt to their environment. Studying and assisting nature's process has also helped us reduce our environmental impact over time.

Example

Why It Matters

Consumers

greater

Capable of enabling improvements not

previous methods

WHO COULD BENEFIT?

Uses genetic

within the plant's

Highly accessible tool

public and private

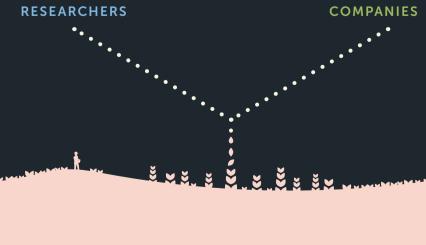
The Planet

Farmers

Our research partners are focused on one end goal: agricultural products that help ensure access to food with a minimal impact on the environment.

AGRICULTURE

HINKING LONG TERM



ACADEMIC

Though agriculture products enabled by gene editing are still early in

safe and responsible use. Monsanto's research is always focused on delivering products that

Looking Toward

THE FUTURE

development, academics, industry researchers and regulatory agencies are already discussing how these tools will be reviewed to ensure their

solve real problems for farmers, ultimately helping to meet the needs of a growing society while protecting the environment. We're committed to helping farmers, regulators and consumers feel confident in the sound science that supports the safety of our products.

To learn more about our research, visit Monsanto.com/Innovations.

