

**From Cautiously Optimistic to Acceptance:  
CRISPR-Cas Qualitative Message Testing**

## Objective:

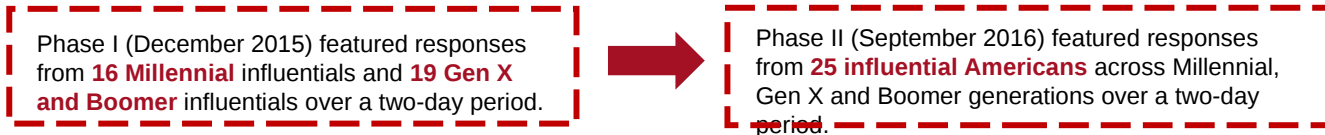
Use learnings from Phase 1 Testing to:

- Confirm the right consumer-friendly language to use when talking about CRISPR-Cas with the non-scientific community.
- Uncover key terms, context and areas of use that appeal to the public and could earn permission and social license for CRISPR-Cas.



# Methodology

- Conducted two phases of Bulletin Board Focus Groups:



## Influential Americans Audience Definition

- Consumers ages 18 and older who participated in **three or more** influential activities over the past 12 months\*:
  - Shared your opinion at a public meeting on a town or community issue
  - Served on a committee for any civic or non-profit organization
  - Served as an officer for a civic, non-profit or community organization
  - Wrote a letter or email to a newspaper/magazine or called a live radio or TV show
  - Made a speech to more than 10 people
  - Been a member of a group for better government
  - Written an article for a publication
  - Worked for a political party
  - Been a member of a non-profit or non-governmental organization
  - Expressed your views publicly about an issue online, using a “blog” or similar online chat forum

\*Note this segment makes up 10%-15% of the U.S. population

# Phase I: Findings Still Apply

1. Respondents are **cautiously optimistic** and appreciate the potential benefits but **question the long-term effects**.
2. Respondents are eager to **learn more before endorsing or denouncing** this technology.
3. **Scientific explanations do not appeal** to respondents. Messaging with straightforward layman's terms resonates most.
4. Respondents want **products created naturally**. Although the term 'natural' is perceived differently by different people, many respondents say food should not be altered and modifications could have unforeseen ramifications.
5. Respondents have **little-to-no understanding of plant breeding**. Some did not know plants are bred at all. Scientific knowledge is completely lacking.
6. Respondents express a need to **'keep chemicals out of food'** and question **CRISPR-Cas's role in the use of chemicals** in agriculture.
7. Some respondents have **heard of CRISPR-Cas**, but were unable to articulate its purpose.

# Phase II Findings: Key Areas

More positive to Phase II messages than Phase I:

## 1. Sustainability / Feeding the World / More with Less

- Favor **sustainability messaging** that addresses environmental and agricultural challenges.
- **Feeding a growing population is seen as an unfulfilled claim** by GMO supporters.
- Recognize the immediate benefit of using CRISPR-Cas to help **grow more food using fewer resources or less pesticides**.

## 2. Gene Editing / Playing God

- “Editing” and “altering” food, people and animals met **backlash and fear** that CRISPR-Cas technology will **change nature** or “play God.”

## 3. No Foreign DNA

- Respondents react positively to the fact that CRISPR-Cas “**doesn’t introduce foreign genetic material/DNA.**”
- Generally, they make **no distinction between “genetic material” or “DNA.”**

## 4. Analogies

- **Turned off by the use of “nature’s scissors,” “scalpel” or any cutting analogy**, citing that it is an oversimplification of a complicated process.

## 5. Dislike and Disbelief of Plant Breeding

- **No relevance of historical context** such as “for 10,000 years” or “for thousands of years”; some don’t even believe it’s true.

## 6. Beyond Agriculture / Animal Agriculture

- Strong reaction to CRISPR-Cas used in animal agriculture, including creating hornless cattle that can reduce the suffering of human handlers and the animal, thus resulting in an industrially beneficial scenario; the majority of respondents disagree with the practice.

## 7. DuPont’s Commitment

- Respondents are generally **comfortable** with DuPont’s use of CRISPR-Cas to benefit society, but there is **skepticism around profitability**.

# Words to Use and Words to Lose (or Use Sparingly)

## Favorable

- Help farmers manage environmental challenges
- Protect plants
- Help plants cope
- Includes no foreign DNA
- Based on a natural process
- Next iteration
- Improve plants
- Drought tolerance
- Grow more food with less water, fewer resources
- Relying on biology rather than chemicals
- Reduce pesticide use

## Negative

- Advanced plant breeding technology
- Plant breeding
- For thousands of years
- Feed a growing population
- Edit genes, alter genes
- Animal agriculture examples e.g., hornless cattle

## Mixed Reaction:

- Recode (some liked recoding or “hacking” approach implying making it better, e.g., life hack)



# Insights to Recommendations

## Scientific and industry jargon alienates

- Use consumer-friendly terms like “improve” rather than “gene editing.”

## Limited understanding of science

- Lead with context consumers believe, not the science.

## Feeding the world isn't a challenge people believe

- Highlight believable challenges: farmers producing more food using limited resources given changing climates, drought.

## Dislike or disbelief of plant breeding

- Do not lead with plant breeding and limit use.
- Consumers don't believe the 10,000 year history, instead focus on “what's always been done” without specifics.

## Natural process is favored

- Emphasize words such as “no foreign DNA” and “based on a natural system.”

## Chemicals are a significant concerns

- Highlight role in reducing pesticide use.

## DuPont's commitment is a good start

- Respondents like the commitment but want to acknowledge for-profit nature, address smaller farmers and offer concrete examples.

# Listening to Full Range of Stakeholders

- Recognize that all new technologies require a “social license”
- Asking traditional and non-traditional stakeholders about their optimism and concern for CRISPR-Cas and how to balance the two
- Using insights as we develop our plans and as we work with others in agriculture and with those applying CRISPR-Cas across industries
- On-going discussion

