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:

**Phase I (December 2015)** featured responses from 16 Millennial influentials and 19 Gen X and Boomer influentials over a two-day period.

**Phase II (September 2016)** featured responses from 25 influential Americans across Millennial, Gen X and Boomer generations over a two-day period.

**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