



# The Future of Plant Breeding: Industry Perspective

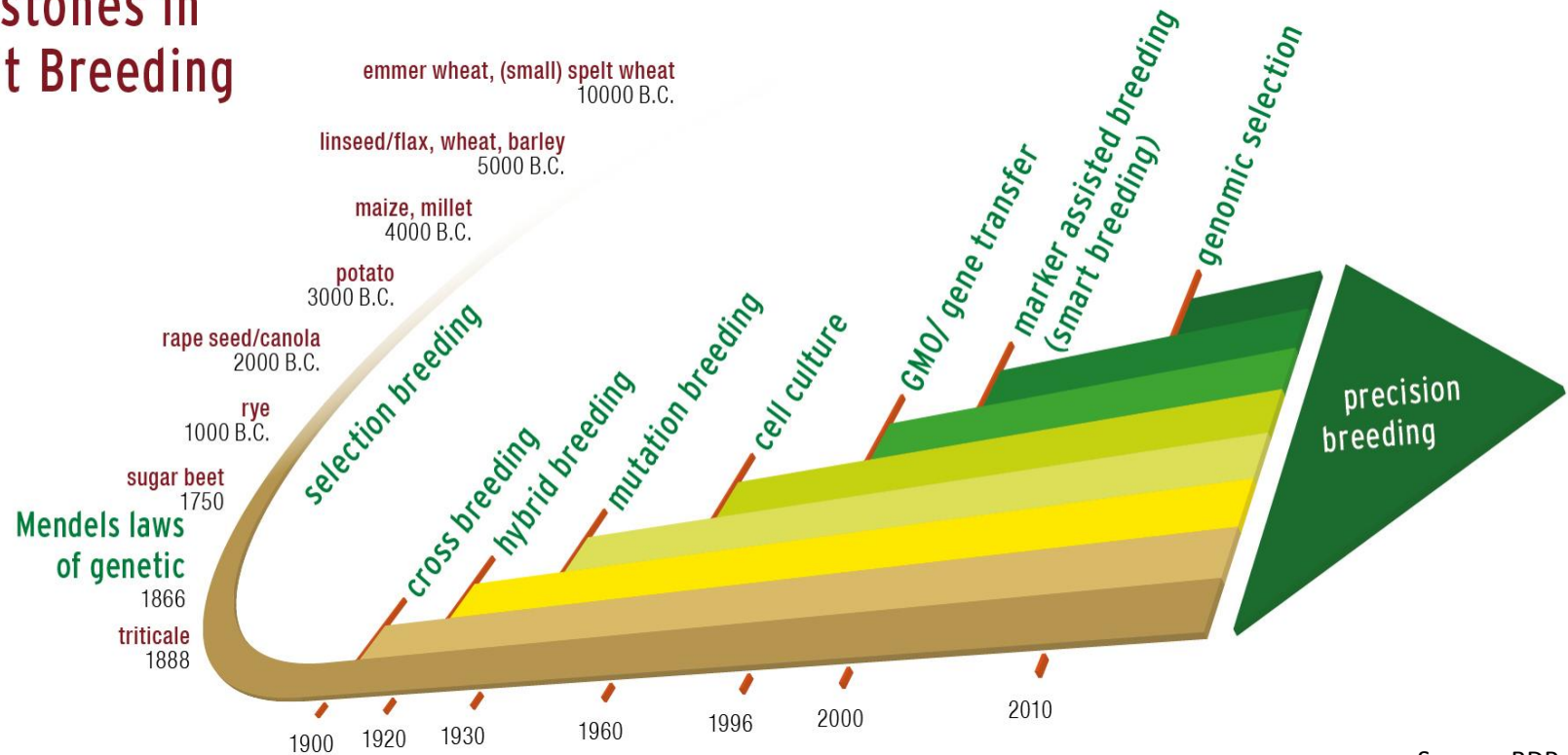
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The Goals of Plant Breeders Remain the Same

# Milestones in Plant Breeding



Source: BDP



Plant breeders today have access to an incredible array of genetic information from both commercial and wild plant varieties.



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# Genetic Variability: Fundamental to Plant Breeding

- Newer breeding methods also use genetic variability as source material
  - Very specific changes in existing plant genes
  - Ability to transfer defined pieces of plant's genetic material
- ***The plant varieties developed using these new tools could, in most cases, be developed through classical breeding***

# Importance to Plant Breeders

- Gene editing methods can be used across all agriculturally important crops
- Efficient and precise
  - Can reduce R&D and breeding time
  - Important for plants with long generation times
  - Important for crops with rapidly evolving diseases and pests
- Relatively inexpensive
  - Widely available to companies of all sizes and public breeders

# Impact of Public Policy

- Regulatory policy will determine utilization of methods across companies and across crops
- Overly high regulatory burden
  - Limit utilization to largest companies
  - Limit utilization to highest value crops (e.g., corn, soybeans) and to limited number of traits (e.g., herbicide tolerance)

# Impact of Public Policy

- Inconsistent policies
  - Make research collaborations difficult
  - Negative impact on commercial seed trade
  - Negative impact on trade in agricultural products
  - Competitive disadvantages on breeding innovation across countries
- Determine range of new varieties for farmers and new products for consumers
- Impact on overall innovation and agricultural development



# Policy Goal

- Legal certainty in government policies
- Regulation grounded in science
- Government policies that facilitate innovation—unnecessary regulation will impede innovation
- Consistent policies for research, collaboration and trade

# Policy Endpoints

- Question is not whether a new plant variety is adequately regulated
  - FDA **already** has oversight for all foods derived from plants
  - APHIS has ample authority to address risks posed by plant pests and noxious weeds
- Question is whether a special pre-market review and clearance process is warranted

# International Goal: Consistent Policy End Points

- Role of International Seed Federation
- Other countries
  - EU legal interpretation
  - Japan
  - Argentina
  - Australia
- Building Alliances

# Communication is Key

- Policy Makers
- Value Chain
- Public/consumers
- Domestic and International

# Goal: To Have Entire Toolbox Available

