



**What will the dairy cow need to look like in the future?**

# ChatGPT: *What will the dairy cow need to look like in the future?*

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- **Efficiency:** Dairy farmers will likely continue to select for cows that are efficient at converting feed into milk production. This may include cows that are able to produce more milk with less feed, or cows that are able to utilize lower-quality feed sources more efficiently.
- **Health:** Cows that are healthy and have good resistance to diseases will likely be favored in the future. This may include cows that are less susceptible to mastitis, lameness, or other common health issues.
- **Environmental sustainability:** As concerns about the environmental impact of agriculture continue to grow, dairy farmers may prioritize cows that have a lower carbon footprint. This may include cows that produce less methane, or cows that are able to graze on pasture more efficiently.
- **Technology:** Advances in technology, such as gene editing or precision breeding, may allow farmers to select for specific traits more easily. For example, it may become possible to breed cows that are more resistant to specific diseases or that have a more efficient metabolism.

# If we can measure it, we can improve it



## Efficiency

- More manageable (smaller, temperament, teat size, etc.)
- Better production (greater milk volumes, more butter, cheese, etc.)

## Health

- Official health traits more easily measured/improved today

## Environment

- Grazing techniques, confinement systems, greenhouse gas emissions

## Technology

- Fences, barns, milking machine, AI, ET, robots, activity monitors, etc.

# Genetic Progress! do more with less!



- **Genomics** – big increase in accuracy of PTAs for young animals
- **Reproductive solutions** – allows for more efficient repro systems
- **Gender-sorted semen** – fewer parents required for next generation
- **Data** –
  - Number of genetic traits available at an all-time high!
  - Activity monitors, parlor management systems, robotics, etc
  - Opportunity to improve what can be accurately measured

# Welcome to the Data Age



- Data availability at an all time high and GROWING!
  - Ability to measure and select for new traits
    - Feed Saved – measure of feed efficiency in U.S.
    - Methane Efficiency – recently introduced in Canada
    - Other new traits on the horizon
      - Hoof health, calf survival, robot performance
      - Only limited by the ability to measure accurately!

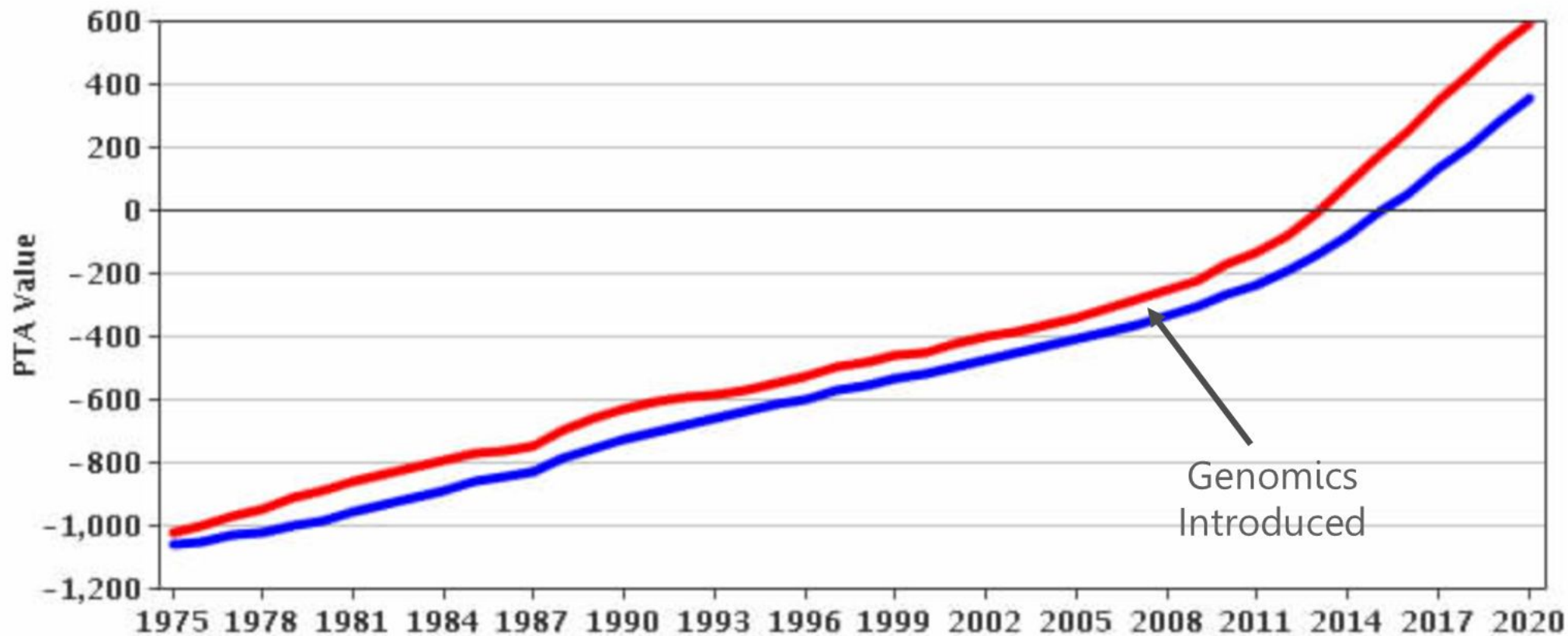
# Profoundly improved the rate of gain of our traditional traits



## Net Merit for Holstein or Red & White

Net Merit PTA Values for Holstein or Red & White

■ Cow ■ Sire



# Create the best genetics today!



- Index selection on males and females
  - Use the best genetics available – genetics is a great investment!
- Efficient repro programs give options
  - Minimize number of replacements needed for the future
    - Sorted semen, beef-on-dairy calves
- Quality data evaluation
  - Accurate identification
  - Herd performance data
  - Genomic evaluations

# Genetics for the Future



## Precision Agriculture + Consumer Confidence

- Create “invisible” cows that require reduced treatment
  - Minimize human handling and decisions – Let Cows be Cows!
    - Technology-assisted management decisions
    - Polled, slick haircoat, grazing, non-traditional breeds, etc.
- Build cows for the technologies that interact with them
  - Automated tools and systems
    - Milking, calf feeders, future robotics, etc.
- Design cows with the future environment in mind
  - URUS “Green Cow” initiative
    - Methane, feed/water usage, etc.

# Genetics for the Future



The **Future Cow** is only limited by what can be accurately measure!

Methane

Hoof health

Body size

DMI  
conversion

Cow comfort

Disease  
Resistance

Animal  
welfare

Water usage

Milker  
attachment  
time

DIM @ 1<sup>st</sup>  
high activity

Heat  
tolerance

Cheese yield