



**MMI GENOMICS, INC.**

# Canadian Bovine Genomics Workshop

Tom Holm

Business Development Manager

MMI Genomics

---

# MMI Genomics Inc: Recognized Leader in Livestock Genomics

## DNA-based Testing Services

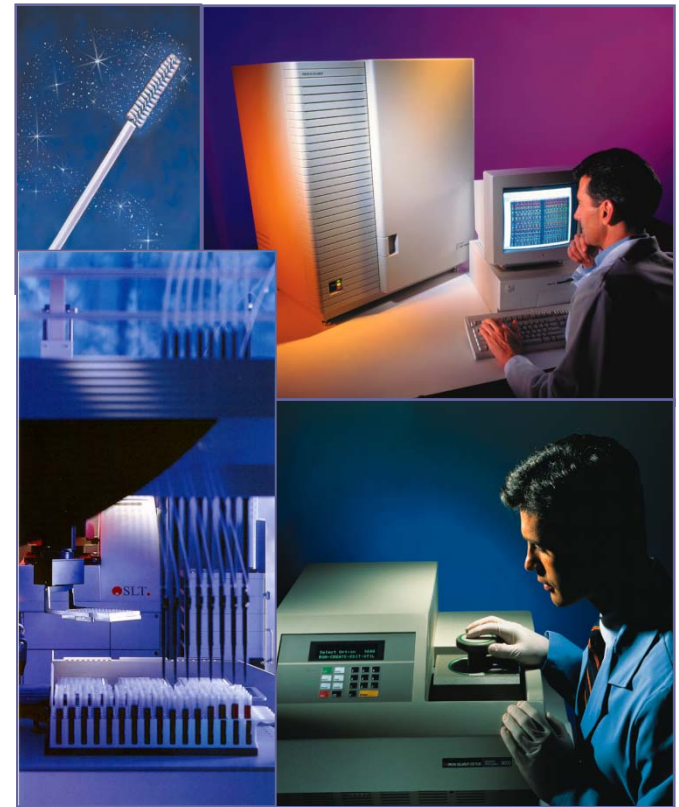
- Industry Pioneer (over 20 years)
- Over 3,000,000 samples tested
- > 99% on-time delivery

## Genomics Discovery Assets

- Whole genome sequences (livestock)
- High-throughput genotyping platform
- BioInformatics & data systems

## Staff and Facilities

- Based in Davis, CA
- 43 employees (7 PhD, 5 MS)
- Strong customer base
- Industry alliances

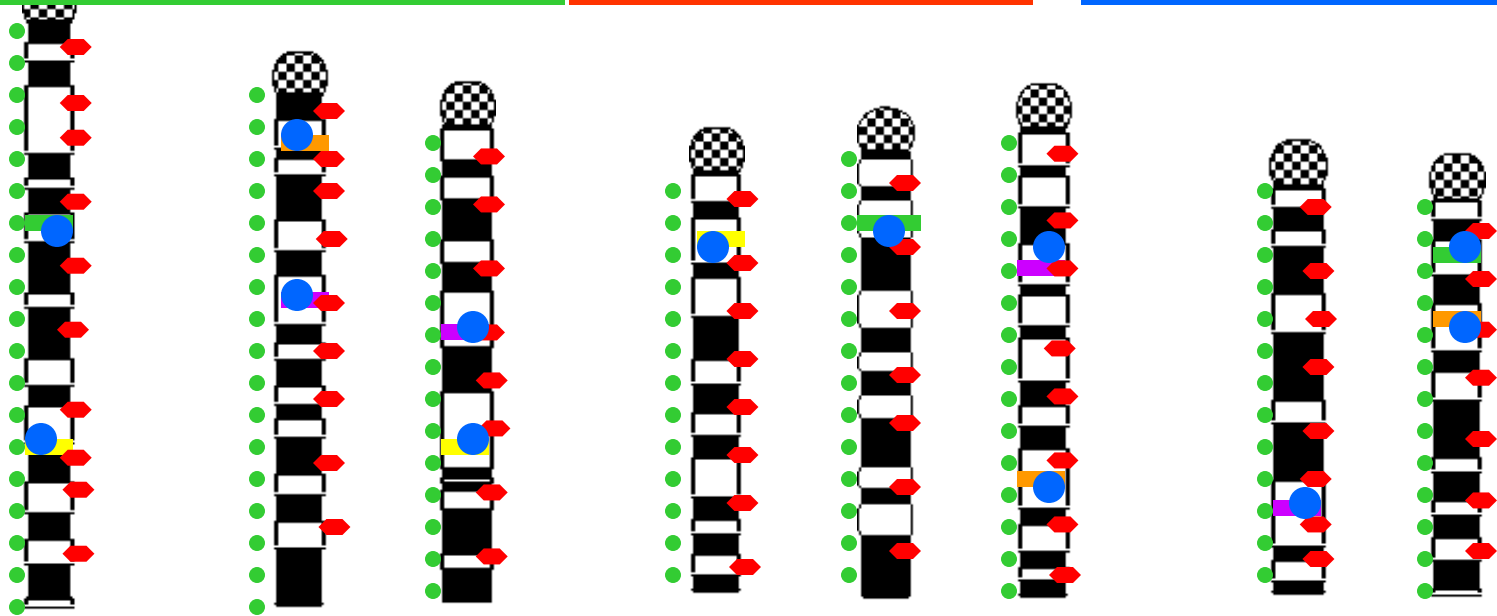


# Cargill – MMI Genomics: Whole Genome Discovery Strategy

800,000 Putative Mapped SNPs

6,000 Validated SNPs

Associated Diagnostic SNPs



Marbling

Tenderness

Yield Grade

ADG

# Creating Value with MMI Genomics Breed-Tru™ Products

---

**Tru-Parentage™**

**Tru-Marbling™**

**Tru-Identity™**

**Tru-Tenderness™**

**Tru-Polled™**

**Tru-Finish™**

**Tru-CoatColor™**

**Tru-Gain™**

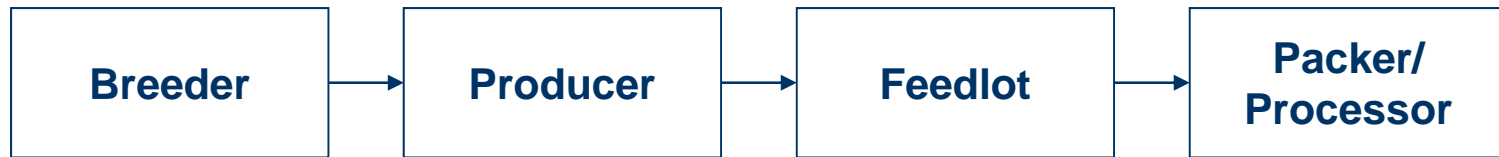
 **MMI GENOMICS, INC.**



**DNA VERIFIED**

# Value Creation Opportunities

---



- **Breeders & Producers: Breeding Tools**
  - Increase accuracy of selection
  - Target traits difficult to measure with traditional selection
- **Producers & Feeders: Animal Management Tools**
  - Sort and manage animals based on genetic potential
  - Optimized marketing
- **Packers/Processors: Branded Beef Products**
  - Create range of branded products with guaranteed palatability attributes
  - Forward marketing/sales of beef products based on predictable supply

**All Segments: Parent Verification, Identity & Traceability**

# Breed-Tru® Products

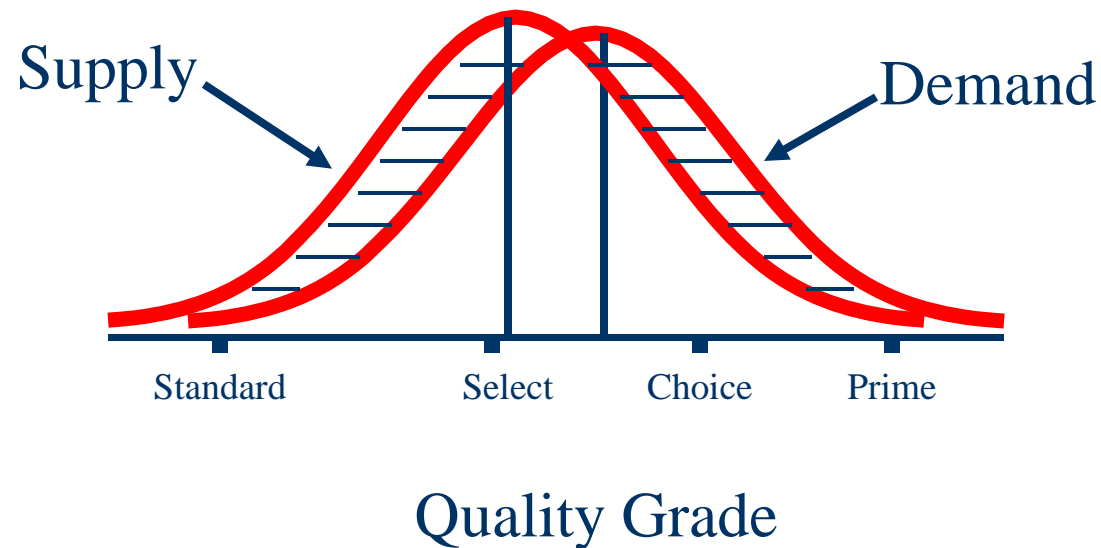
---

## Value Proposition for Seedstock & Producer Segments

- MGVs can be used to rank animals genetically
- MGVs can be used to mate specific animals
- MGVs can be estimated at any time in an animal's life
- MGVs can increase the accuracy of selection and decrease the age at which animals can be selected.

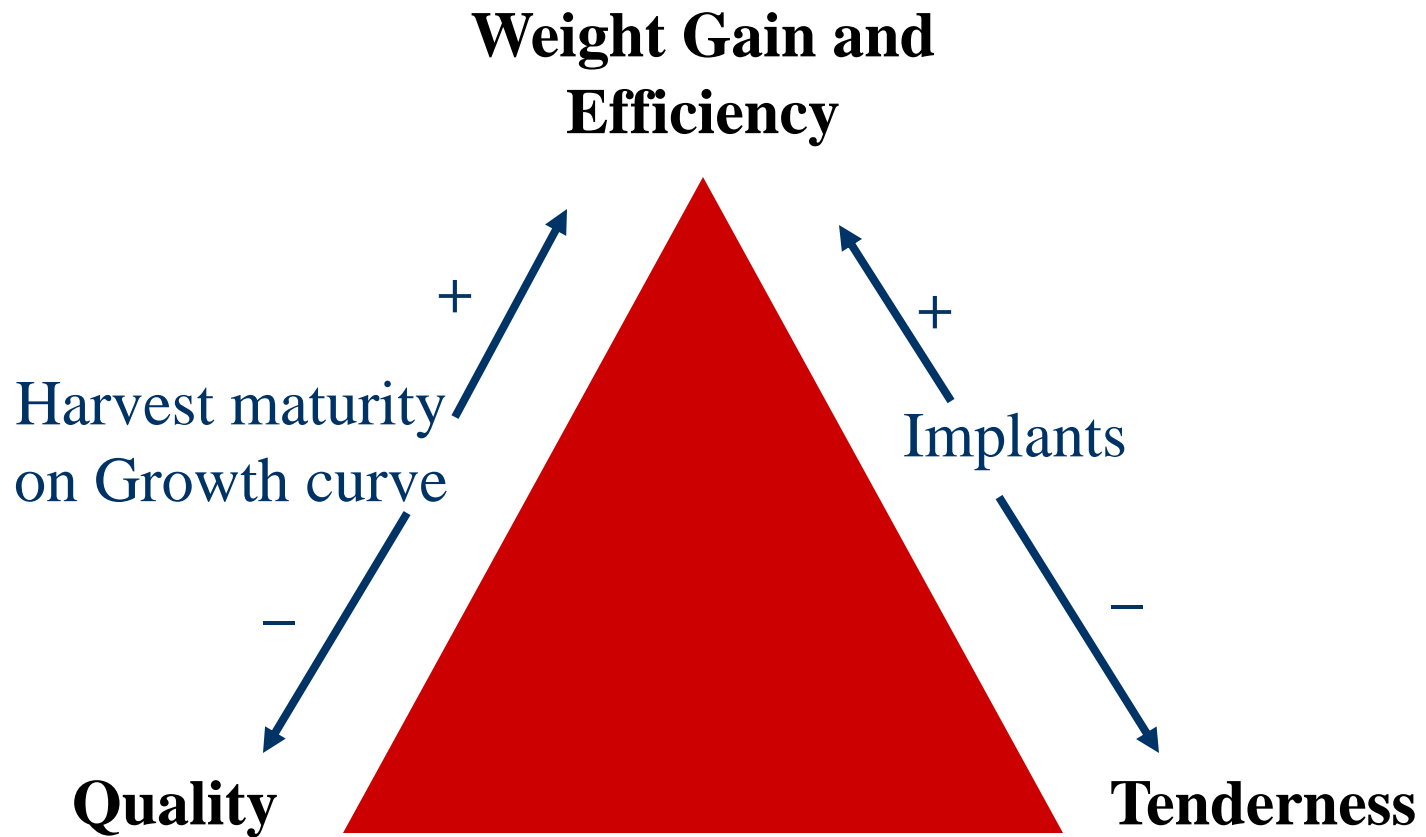
# Opportunity for Value Creation

---



# Value Paradox

---



# Feedlot Animal Management Products

---

## Animal Sorting and Marketing Tools

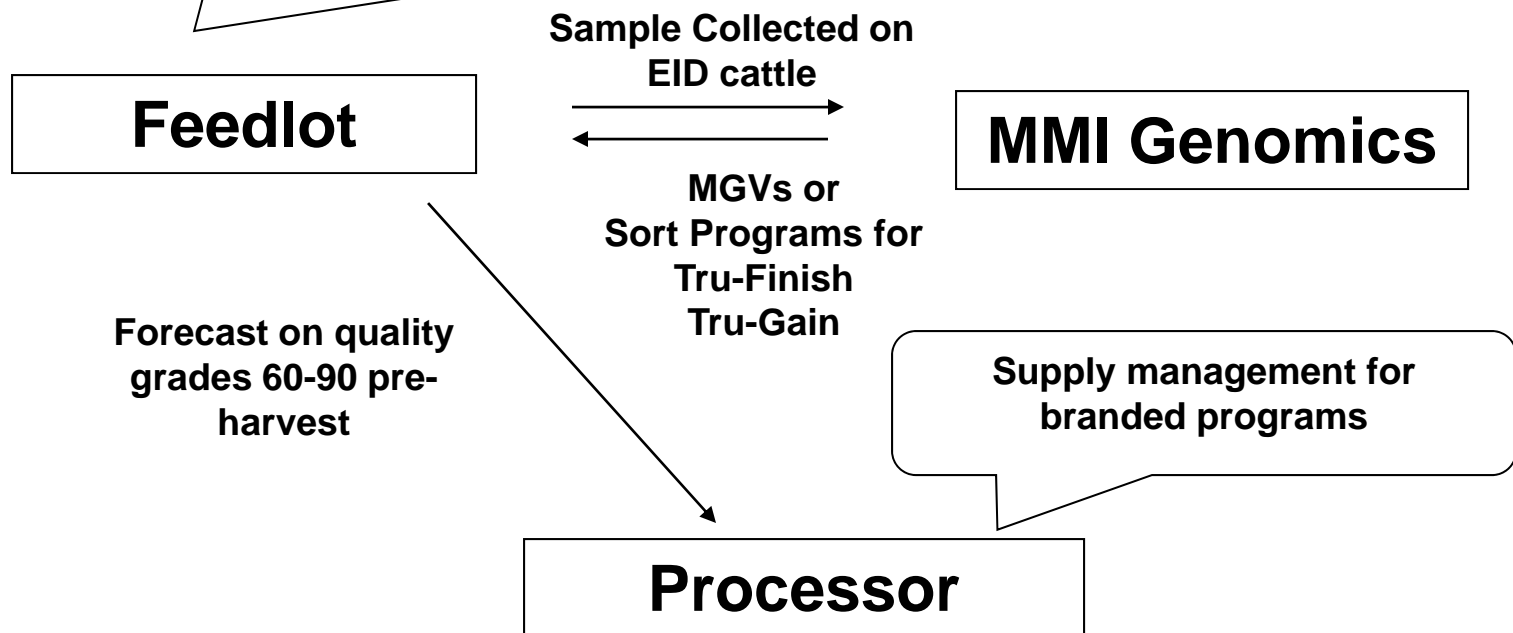
### Based on Tru-Marbling & Tru-Gain

- DNA Genotyping: to determine genetic potential
- Sorting: into outcome groups based on genetic potential
- Manage: to optimize the genetic potential of each group
- Market: into grid-based program that provides greatest returns



# Marker-Assisted Management

- Reduced feed costs by feeding to the optimum end-point/growth curve, not beyond
- Increased carcass value by hitting thresholds for quality,
- Market to the optimum grid or pricing formula based on genetic potential and management scheme
- Improved ability to forecast product mix between choice and select quality grades,
- Enhanced ability to supply product for branded programs

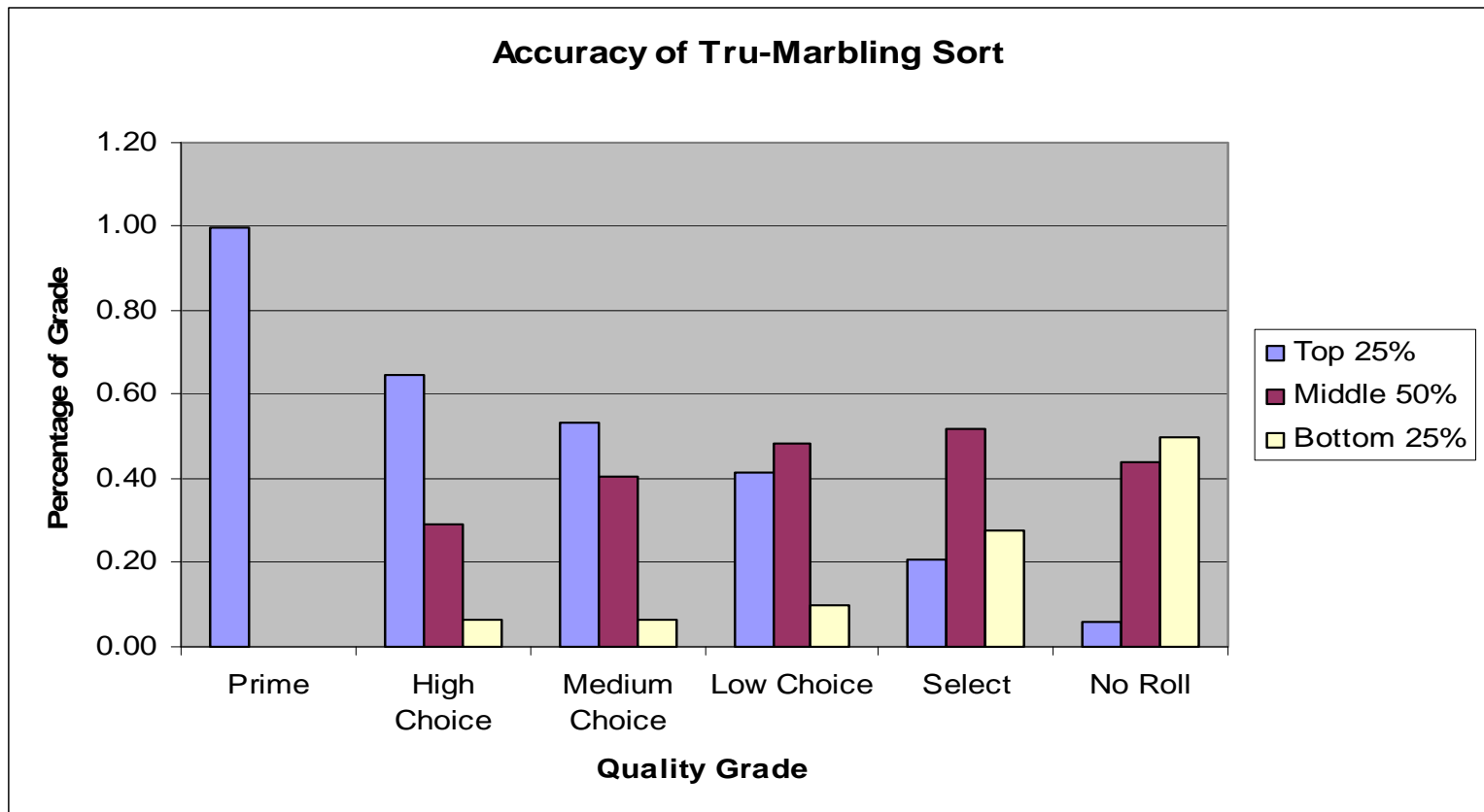


## Results in Commercial Feedlot Cattle – Quality Grade

---

	Number of Observations	Average MGV	SE
Prime	3	34.53	5.10
High Choice	62	21.54	2.56
Medium Choice	785	15.04	0.78
Low choice	3128	9.49	0.40
Select	10881	-5.03	0.22
No Roll	1477	-18.68	0.52

# Pre-Sort Accuracy of the Tru-Finish System



# Value Sharing Through the Chain: DNA diagnostics and Informatics holds it together

