

## Genomics: Old, Now, and New

# GeneMax™

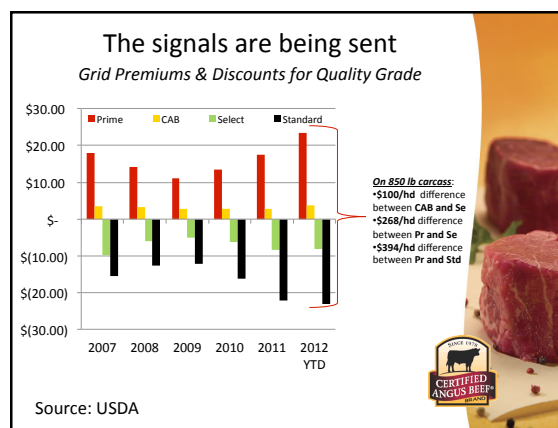
Mark McCully  
Certified Angus Beef LLC



## Can we get better?

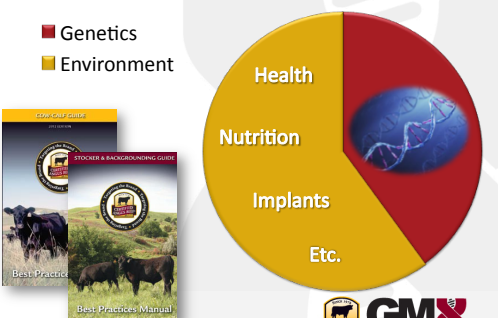

Trait	2000	2011
Quality Grade	\$39.71	\$25.25
Yield Grade	\$18.32	\$5.77
Carcass Weight	\$2.33	\$6.75
Hide/Branding	-	\$0.74
Offal	\$3.34	\$5.15
<b>Total</b>	<b>\$63.71</b>	<b>\$43.66</b>





## Making Progress for Marbling and Gain


■ Genetics  
■ Environment

## GeneMax™

### What it IS


- DNA test for Marbling and Post-weaning Gain
- Intended Use:
  - By commercial cattlemen
  - On Angus-sired cattle
- Selection, Marketing & Decision tool
  - Commercial replacement heifers
  - Feeder cattle



**GeneMax™**  
What it's **NOT**


**REGISTERED  
ANGUS  
SEEDSTOCK**


- Not intended for registered bulls or females
- Not incorporated into EPDs


 **GMX**  
GENEMAX  
Simple • Affordable • Profitable


What do you get?

 **GMX**  
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**GMX Score** 

**GMX Marbling** 

**GMX Gain** 


**Optional Sire Match** 

**GMX™ Score**

Tag	Sex	Assn Num	GMX™ Score	GMX™ Marbling	GMX™ Gain	Most Likely Sire
						Tag Reg. Num.
1R177	C	BIR 619046714	99	5	5	5899 AAA 13395344
1U093	C	BIR 620020729	99	5	5	5899 AAA 13395344
1S113	C	BIR 620020965	99	5	5	5899 AAA 13395344
1S009	C	BIR 620020932	98	5	5	
1W053	C	BIR 621342968	98	5	5	5899 AAA 13395344
1P142	C	BIR 619700032	98	5	4	5899 AAA 13395344
1R149	C	BIR 619046690	97	5	5	5899 AAA 13395344

GMX™ Score	Description
99	Top 1%
75	Top 25%
50	Average
25	Top 75%
1	Top 99%

**GMX™ SCORE = Economically weighted value for marbling and post-weaning gain combined**


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**GMX™ Component Traits**

Tag	Sex	Assn Num	GMX™ Score	GMX™ Marbling	GMX™ Gain	Most Likely Sire
						Tag Reg. Num.
1R177	C	BIR 619046714	99	5	5	5899 AAA 13395344
1U093	C	BIR 620020729	99	5	5	5899 AAA 13395344
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1S009	C	BIR 620020932	98	5	5	
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1P142	C	BIR 619700032	98	5	4	5899 AAA 13395344
1R149	C	BIR 619046690	97	5	5	5899 AAA 13395344

GMX™ Marbling and Gain	Description
5	Top 20%
4	61-80%
3	Middle 20%
2	21-40%
1	Bottom 20%

**GMX™ Trait = Individual value for marbling or post-weaning gain**


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**GMX™ Sire Match**

Tag	Sex	Assn Num	GMX™ Score	GMX™ Marbling	GMX™ Gain	Most Likely Sire
						Tag Reg. Num.
1R177	C	BIR 619046714	99	5	5	5899 AAA 13395344
1U093	C	BIR 620020729	99	5	5	5899 AAA 13395344
1S113	C	BIR 620020965	99	5	5	5899 AAA 13395344
1S009	C	BIR 620020932	98	5	5	
1W053	C	BIR 621342968	98	5	5	5899 AAA 13395344
1P142	C	BIR 619700032	98	5	4	5899 AAA 13395344
1R149	C	BIR 619046690	97	5	5	5899 AAA 13395344

**Sire Match Features**

- Potential sires must be 50K tested
- Included in the cost of the GMX test
- Request at the same time as GMX™ or anytime later
- NOT AAA Parentage Verification



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## GeneMax™ Field Study and Economic Analysis



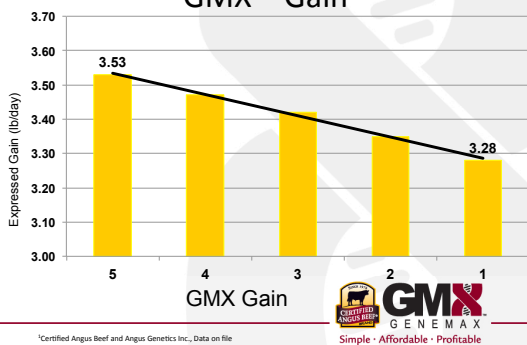
### Field Study

- Validation study conducted by CAB, AGI and Pfizer Animal Genetics
  - 1,975 hd of high percentage Angus feeder cattle with performance and carcass data<sup>1</sup>
- Study findings
  - GMX Score was associated with increased likelihood of achieving higher Quality Grade ( $P < 0.0001$ ) and increased carcass value ( $P < 0.0001$ )
  - GMX Score was associated with increased ADG ( $P = 0.03$ )
  - GMX Score was associated with greater carcass value per day on feed ( $P < 0.0001$ )

<sup>1</sup>Certified Angus Beef and Angus Genetics Inc., Data on file



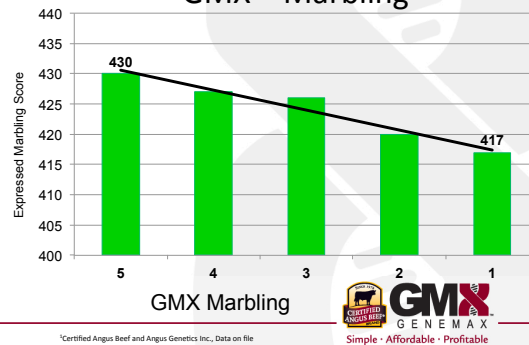
### Average Expressed Gain by GMX™ Gain



<sup>1</sup>Certified Angus Beef and Angus Genetics Inc., Data on file



### Average Expressed Marbling by GMX™ Marbling



<sup>1</sup>Certified Angus Beef and Angus Genetics Inc., Data on file



### GMX™ Score – Economics

- Conclusion:
  - For every 10 unit increase in GMX™ Score, animal value increases by **\$3.30/head for every 100 days on feed**
  - Assuming an \$8 Choice/Select spread and \$325/ton DM ration cost



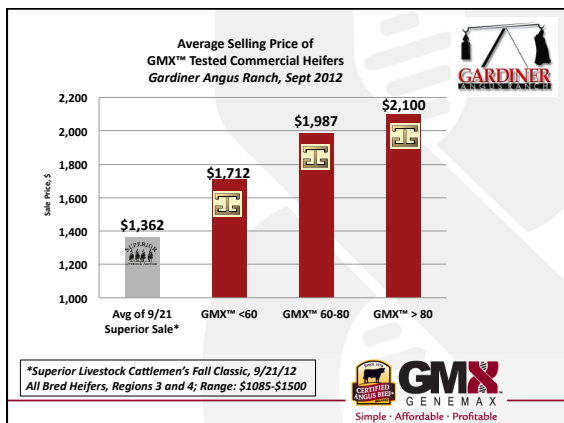
Starting Weight: 600 lbs, DOF: 200, End Weight: 1300 lbs



### Applications for the Cow-calf Producer

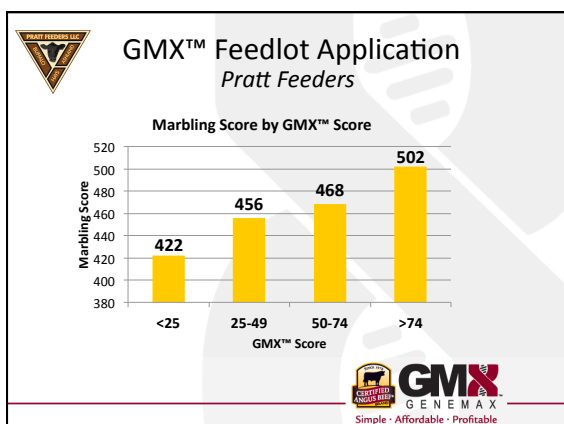
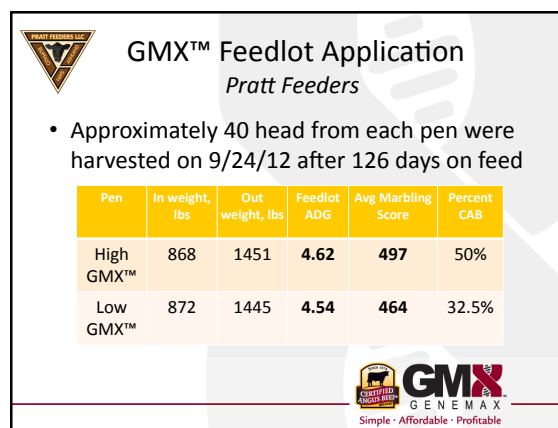
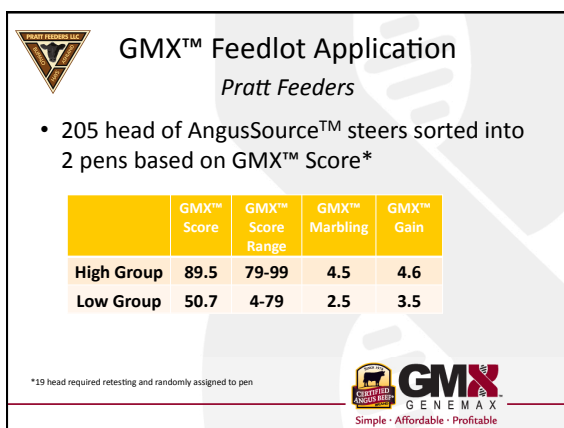
- Heifer selection and breeding tool
  - Select the **best** growth and marbling genetics
  - Make more strategic breeding decisions
  - With Sire Match, improve selection and mating decisions
- Culling tool
- Marketing tool
  - Feeder cattle
  - Heifers





## Applications for the Feeder

- Procurement tool to more accurately assign value to feeder cattle
- Management tool for sorting, technology use, and marketing
- “Genetic risk management”



## How it works

- Available through Certified Angus Beef
  - [www.CABPartners.com](http://www.CABPartners.com)
- Order test kits
  - Card and lancet = \$0.50 each
  - Test = \$17 each
- Collect blood (preferred) samples and mail to AGI for processing
- Test results returned in less than 4 weeks



### Opportunities for the registered Angus breeder

- Promote to bull customers – bring them another valuable service only available to those using Angus bulls
- Incorporate into customer appreciation sales – create further points of difference
- Sire Match feature brings value to those customers investing in HD50K tested bulls

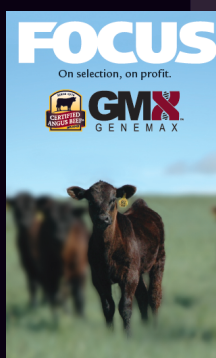
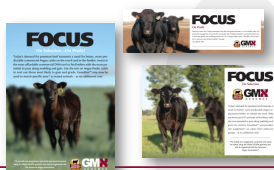


### Sale Catalog Inserts



### Sale Catalog Insert Promotion

- Send us your sale catalog with a GMX™ ad and we send you a GMX™ pullover
- For every 50 catalogs received, 1 winner will be selected for 25 free GMX™ tests



Thank you

Mark McCully  
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