Technology 2-Step Research Project

Conducted by Gardiner Angus Ranch and Zoetis

Question: How much progress can be made in one generation by combining two proven genetic technologies? (DNA testing coupled with A.I. to high-growth/high carcass value Angus sires)

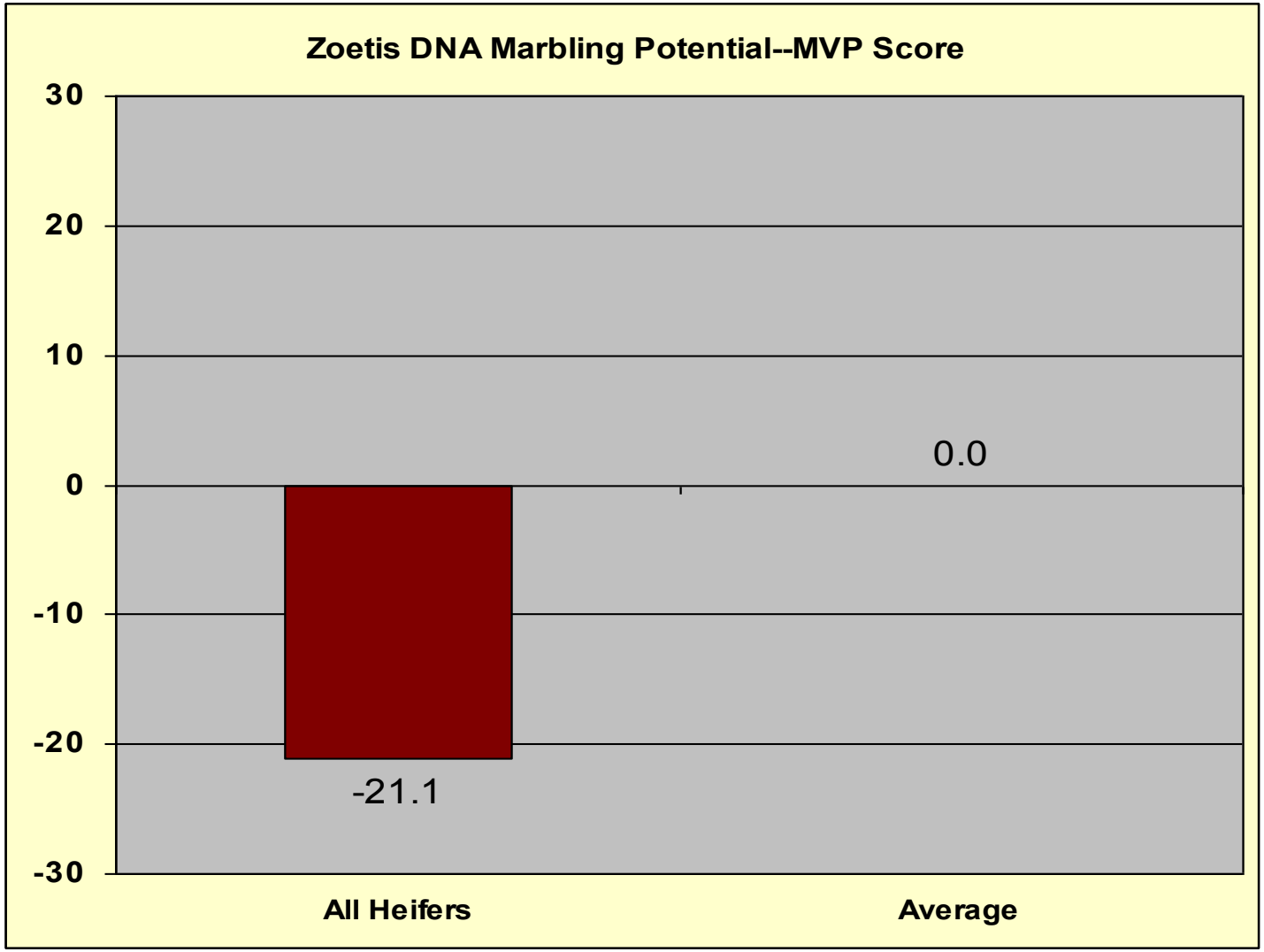
Project Goal: Increase Marbling & Grid Premium Potential

Research Methods:

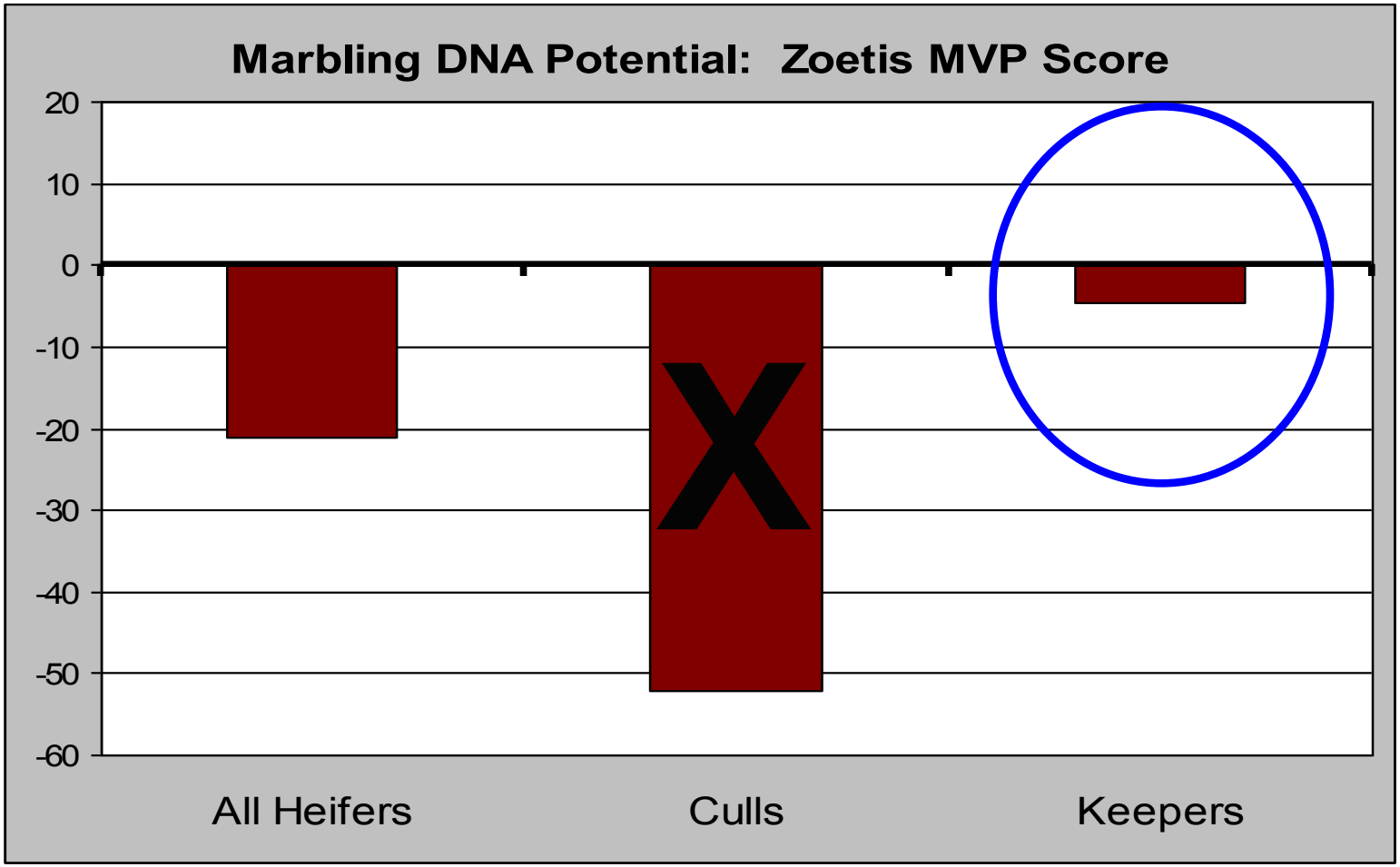
- 104 yearling heifers sourced from one TX ranch in April 2012
  (Heifers were not expected to be strong for marbling and quality grade potential)
- All heifers DNA tested by Zoetis
- Heifers in the bottom third for marbling potential were culled, while the top two-thirds bred A.I. to high growth and carcass GAR Angus sires
- Resulting calves were DNA tested and are being fed out for harvest in June 2014

Pictures of purchased heifers

As expected, the heifers had a weakness…



…below average marbling potential.



By eliminating the bottom third with the lowest marbling potential, remaining heifers had an average MVP score near industry average.

Keeper heifer with a +30.7 MVP marbling score.

Something to build on!

Selected heifers A.I. bred to two GAR Angus sires ranking in the top 6% for calving ease and top 1% for $B.

Calving ease suitable for heifers ***PLUS*** lots of growth and carcass value.

Research pairs on summer grass in 2013

Two high GeneMax® scoring calves!

Not just another feedlot steer…

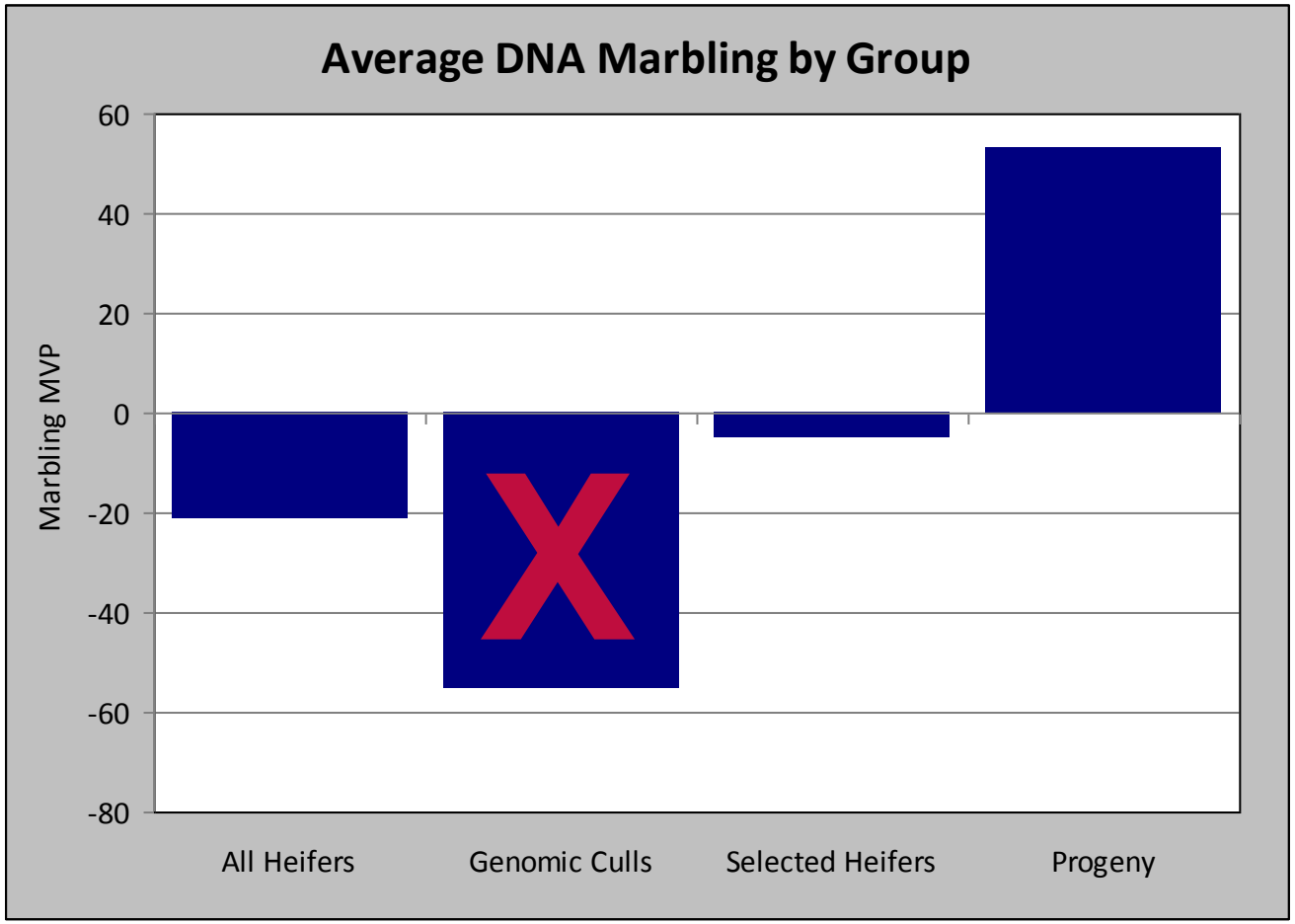
This GAR Prophet-sired calf boasts an elite GeneMax score of 95!

CERTIFIED ANGUS BEEF®

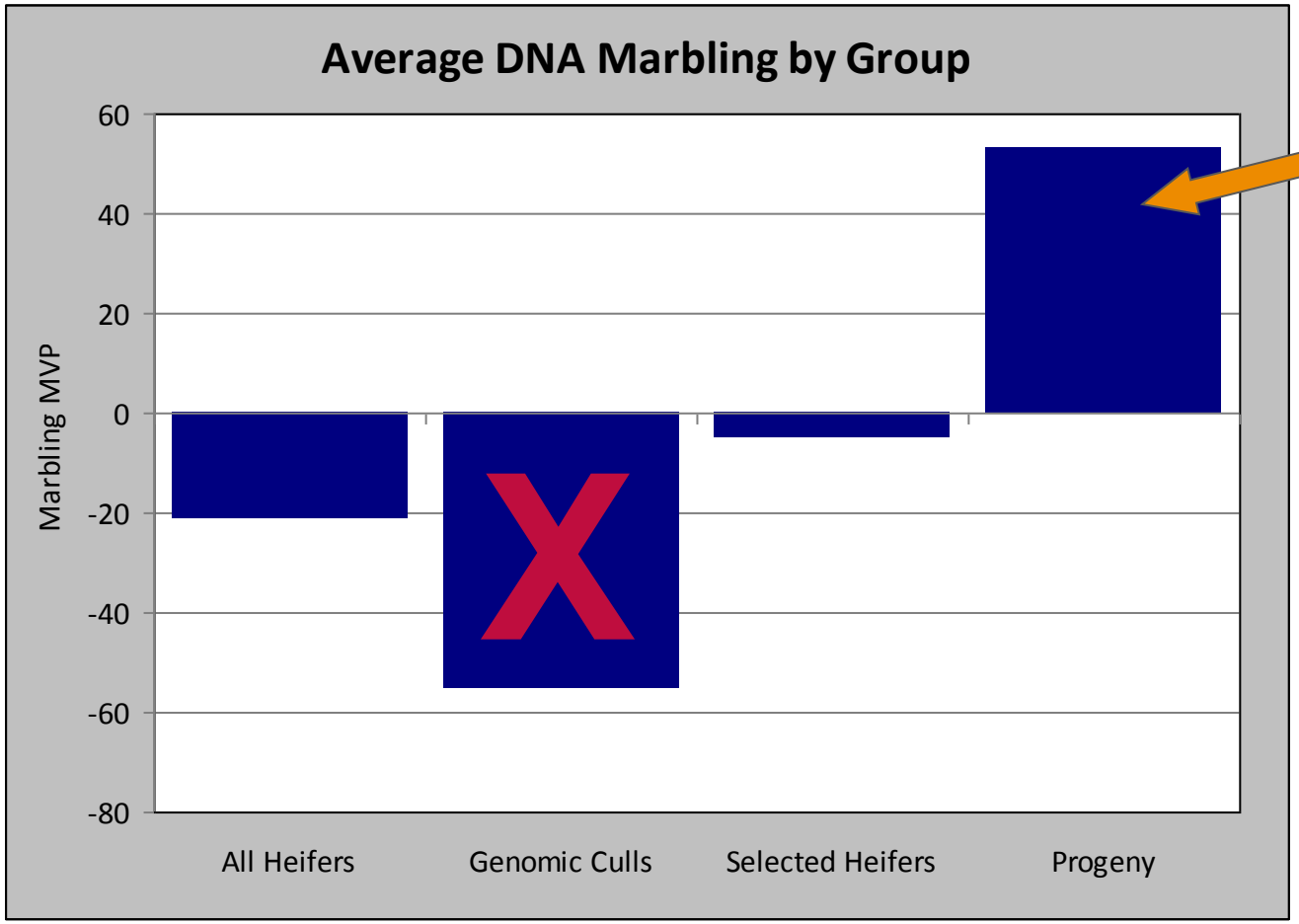
GMX GENEMAX

Results:

Progeny average MVP marbling score was +53.0.



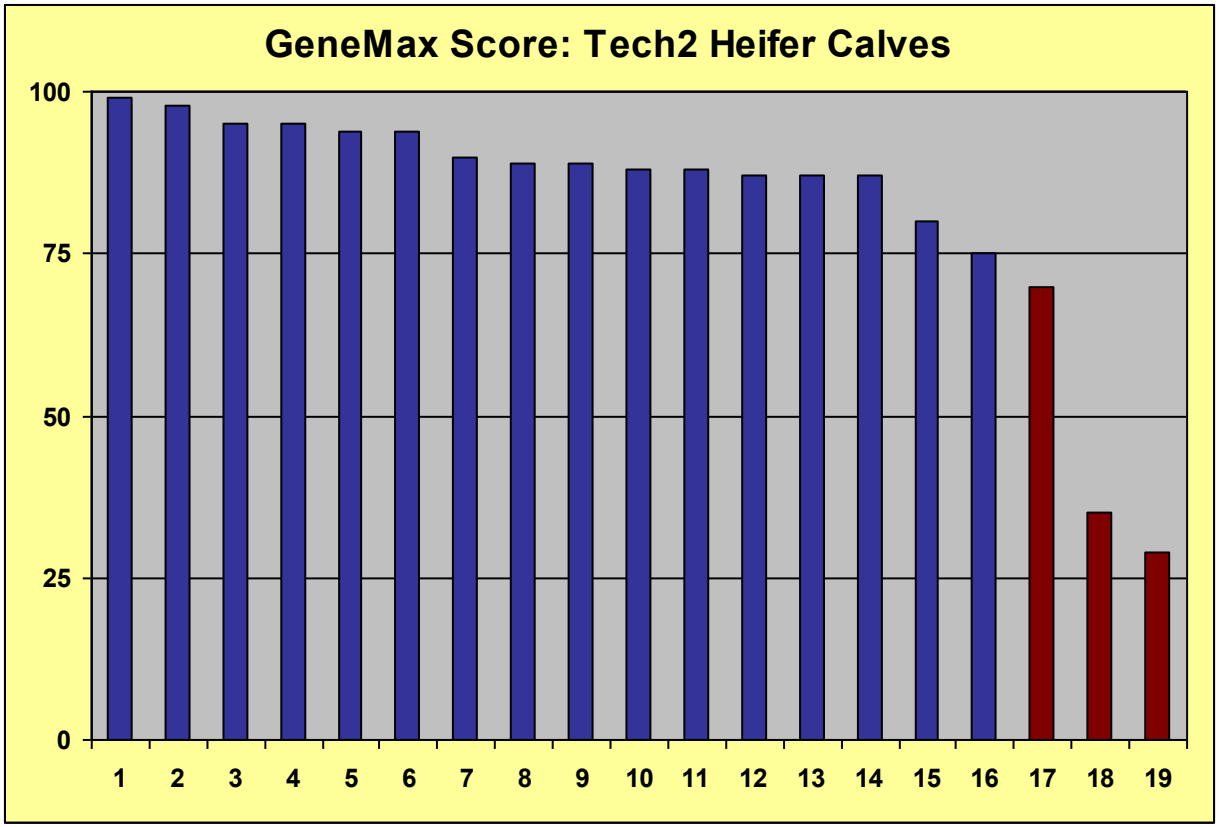
By layering two proven technologies, marbling potential moved from below-average to high on the industry bell curve in one generation.



Likely to earn a $70 to $90 per head grid premium.

By applying two layers of proven technology we moved from below-average marbling potential to way above average in one generation.

What if some heifers had been kept as replacements?



Sixteen out of 19 heifers scored 75 or higher on GeneMax.

Cull the bottom end, and there would be a strong foundation of value for the next generation.

Final Results:

Available by Summer 2014 after the Tech2 Project progeny are harvested.