NZ Herefords and Helical. Tools for the future

NZ Herefords. March 2026

Helical

NZ Herefords

We're excited to partner with NZ Herefords as they adopt Helical, joining a global community committed to delivering modern genetic tools direct to and for the benefit of their members

ANGUS NEW ZEALAND

$IMMENTALNZ THE MONEY MAKER

THE ABERDEEN-ANGUS CATTLE SOCIETY

AUSTRALIAN WAGYU ASSOCIATION™

And many many many more, coming soon…

Why Helical was developed

Unlock the next phase of genetic gain	Genotyping costs have decreased but data systems lagged behind. Fragmented databases, proprietary silos, and manual workflows create bottlenecks
Build the genetics operating system the industry lacked	Replaced disconnected registries, spreadsheets, and lab portals. Integrating genotypes, pedigree, phenotype, and performance data. Automated quality control & evaluation enables continuous production of EBVs.
To translate world-class quantitative science into production impact	Operationalises genomic models — enabling large, multi-breed and multi-country evaluations previously considered impractical
Make complex genomics usable for everyday producers	Through consultation with breed societies, labs, and industry, we identified a consistent gap: genomic science was powerful but inaccessible. Helical closed that gap for Breed Societies and others.

Current Scope of Helical

Who is Helical?

Dr Dan Garrick
Founder, CEO

Joel Howse
Senior Developer

Aidan Starke
Senior Developer

Jason Tulp
Senior Developer

Dr Dorian Garrick
Technical Advisor

Dr Zuleica Trujano
Genetic Data Scientist

Paul Charteris
Business Development

Hannah Gibb
Business Development

NZ Herefords + Helical

A walk through Helical

3 different views: Stud, Registry, Public.

NZ Hereford - PBB Staff
A web-based platform providing centralised management of member, pedigree, performance, genomic, carcass data as well as billing (Xero).

As an individual Hereford Stud
What you see, data and oversight over your own animals records, genotypes, phenotypes and EBVs.

Public View
Public display of EBVs, accuracies, rankings, $Index values, EBV charts, catalogues.

Genetic Evaluation
- What has been done?

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American Hereford Association

Pan **A**merican **C**attle **E**valuation

Genotyping Lab(s)

Weatherbys

Samples

Information System(s)

Helical

Genotypes

Pedigree

Evaluation System(s) "Black Box"

BOLT

ssMEM

"PACE"
ARG
CAN
URG
USA

Ranchers

Information System(s)

ILR2

Pedigree

Trait Data

Results

Helical

Software for secure, agile information systems

BOLT

Software for genetic and genomic evaluations

Pan American Cattle Evaluation (PACE)

Powered by BOLT

Weekly single-step evaluation incorporating data from American Hereford Association, Canadian Hereford Association, Uruguay Hereford Association, and Argentina Hereford

American Hereford Association

Canadian Hereford Association

Hereford Uruguay
Criadores desde 1864

Hereford Argentina

17 PACE EPDs

Growth & Performance:

- Calving Ease – Direct (CE) - Percentage likelihood of unassisted calving
- Birth Weight (BW) - Pounds at birth
- Weaning Weight (WW) - Pre-weaning growth in pounds
- Yearling Weight (YW) - Post-weaning growth in pounds
- Dry Matter Intake (DMI) - Daily feed consumption in pounds

Fertility & Reproduction:

- Scrotal Circumference (SC) - Fertility indicator in centimeters
- Sustained Cow Fertility (SCF) - Probability of continued calving to age 12
- Maternal Calving Ease (MCE) - Percentage ease for daughters calving at 2 years

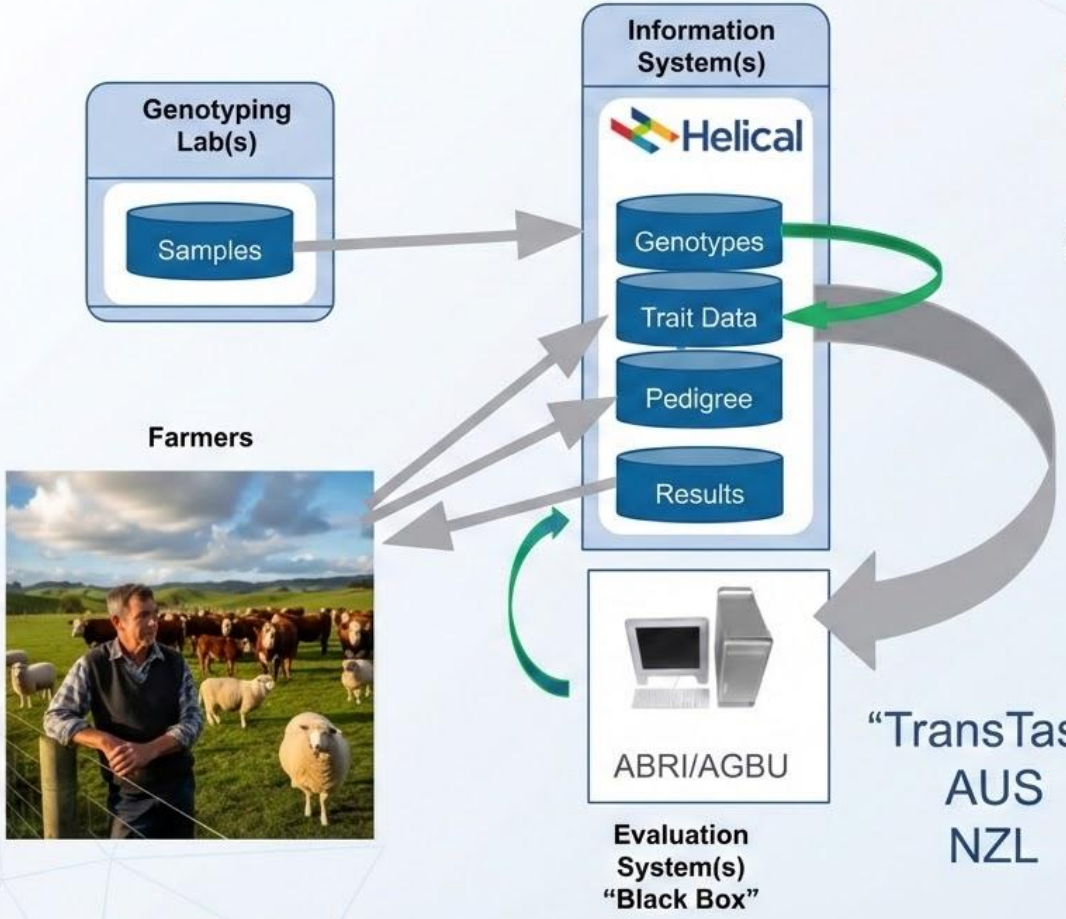
Maternal Traits:

- Maternal Milk (MM) - Milking ability in pounds of calf weaned
- Maternal Milk & Growth (M&G) - Combined growth and milk genetics
- Mature Cow Weight (MCW) - Mature cow size in pounds
- Udder Suspension (UDDR) - Scale of 1-9 (pendulous to tight)
- Teat Size (TEAT) - Scale of 1-9 (large to small)

Carcass Traits:

- Carcass Weight (CW) - Hot carcass weight in pounds
- Rib Fat (FAT) - 12th-rib fat thickness
- Ribeye Area (REA) - Muscling and yield indicator
- Marbling (MARB) - Intramuscular fat/quality grade

New Zealand Hereford Association



Helical

Software for secure, agile breed registry and SNP data systems

PACE + Trans-Tasman Trial

Goal: Create a unified genetic evaluation system across all participating countries to enable accurate comparison of animals across borders

American Hereford Association

Hereford Uruguay
Criadores desde 1864

NZ Herefords

Canadian Hereford Association

Hereford Argentina

Herefords Australia

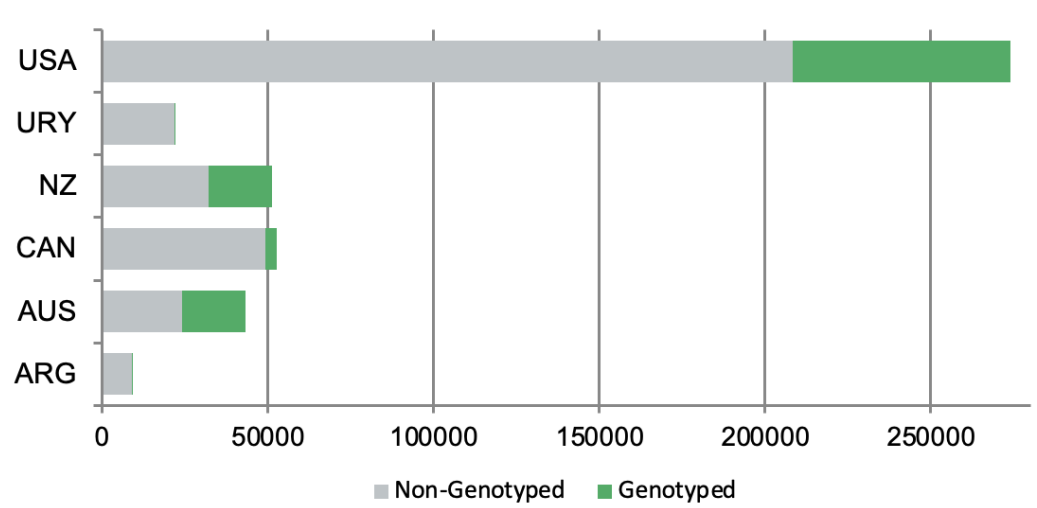
Pedigree Sizes (April 2024)

Country	Pedigree Count	Genotype Count
USA	2,629,865	203,377
Australia	1,344,549	43,486
Canada	562,779	15,328
New Zealand	543,302	31,058
Uruguay	410,141	3,355
Argentina	234,391	1,401
Total	5,725,085	298,005

Genotyping Adoption Across Countries

Animals with Birth Weights Born 2020+: Genotyped vs Non-Genotyped

Country	Total	Geno'd	% Geno'd
Argentina	9,328	422	4.5%
Australia	43,311	19,206	44.3%
Canada	52,783	3,662	6.9%
New Zealand	51,102	18,877	36.9%
Uruguay	22,229	543	2.4%
USA	274,118	65,890	24.0%



Genotyping improves prediction accuracy: EBVs from genotyped animals show 5-10% higher correlations

Impact of Australia & New Zealand

Pedigree Records

Added: 1,887,851

+49.2%
Increase

Genotype Records

Added: 74,544

+33.4%
Increase

Impact of Trans-Tasman Data on USA EPDs

Comparing PACE evaluations (for USA animals) with and without Trans-Tasman data

Trait	Correlation	Regression	Change
Birth Weight	0.992	1.02	Minimal
Weaning Weight	0.994	1.02	Minimal
Yearling Weight	0.996	1.02	Minimal
Milk	0.995	0.97	Minimal
Total Maternal	0.999	0.99	Minimal

USA EPDs remain stable with TransTasman data inclusion
Correlations >0.99 show near-perfect alignment between analyses

Top NZL or AUS sires by total progeny

Sire ID	Origin	NZ	AUS	USA	ARG	URY	CAN	Total
…75ACHR	AUS	185	768	695	469	308	293	2,718
...Z03APR	AUS	45	497	498	424	1020	73	2,557
...064935	NZL	1,043	1,035	120	0	0	23	2,221
…P183APR	AUS	4	6	863	69	335	657	1,934
…NAM288	AUS	637	690	86	0	0	0	1,413
…GEWR51	AUS	433	808	27	0	0	52	1,320
...780002	NZL	570	306	363	0	23	17	1,279

AUS: 3 Sires with Progeny in 6 countries
NZL: 2 sires with Progeny in 4 or 5 countries

Benefits of the Trans-Tasman Trial

Global

Animals compared across 6 countries

Access wider gene pool

Better breeding decisions

Accuracy

More data = better predictions

Stronger genetic connections

Validated performance

Leadership

Exceeds benchmarks

Advanced Evaluation

International collaboration

The Future of NZ Beef Genetic Improvement

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Grass-fed & natural production

Trust, safety, provenance

Sustainability

Premium, but not luxury beef

Faster and more complete recording

Historically - pace of change limited by data system limitations and expertise.

2026 and beyond

Genomics continues to improve accuracy of prediction, earlier.
Phenotype data collection is the limiting factor.

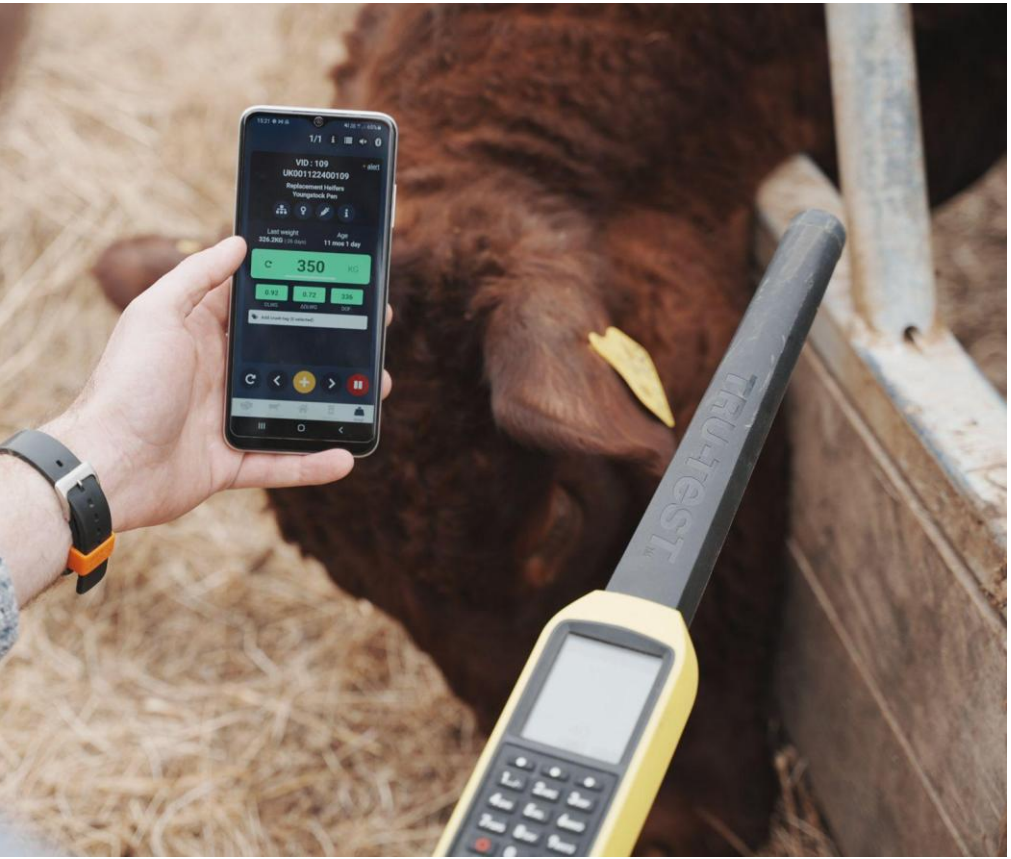
Helical streamlines genomic prediction, phenotype data entry, quality control. Less friction to get data in/out.

Encourages total herd recording and performance of commercial cattle - including carcase and meat quality.

New traits added in Helical (in minutes) and new EBVs are ‘almost trivial’. Research or Genomic EBVs can be calculated very quickly.

Breeders have **more** control over what gets improved.

Smart Tools for automating everything, e.g. Breedr



weigh and scan cattle
scan tissue sample

Breedr
The Precision Beef Network

Helical

Updated EBV

about
10
seconds

about 1
week

Wearable Tech = New Traits

They measure

Feeding & rumination
Activity & behaviour
Reproduction
Health & welfare
Grazing patterns

What this means

New traits & EBVs for NZ pasture systems
Genetic prediction: efficiency & sustainability
Branded beef & market access opportunities

New market access | NZ strengths

e.g. GameChanger Beef Sainsburys' UK

- 25% lower carbon footprint
- UK raised, grassfed
- Breed verified (Angus x dairy), from known farmers
- Future: Angus sires with Sainsbury's Retail GBVs

What this means for NZ

- Low carbon, grass fed branded beef opportunities
- Market access verification
- NZ processors are taking a leadership position

Relies on value chain verification
Lower carbon verified dairy-beef + genomic values.

Dairy-Beef | Genetic considerations...

- Optimisation of dairy cow mating. Individual cow mating tactics
- Dairy-Beef specific genetic evaluation:
  - Leveraging Dairy Beef Progeny Test through to routine genetic evaluation
  - Dairy-beef specific traits - e.g. calf rearability / vigour.
  - Customised selection indexes

- Genetic delivery mechanisms - given fresh/sexed straws and development of new dairy-beef breeds ‘Synergizer, KiwiPrime, Changus’

Artificial Intelligence

Personalised genetics advice:

- Optimise breed choices, sire within breed and individual mating decisions.
- Tailored solutions for individual farms and target endpoints
- Simultaneously use genomic data, phenotypes, wearable sensor data, processing & carcass data, financial and economic indicators.

Call to action

Record data on all animals

+ Capture key traits:
- Fertility
- Cow efficiency & longevity
- Carcass & meat quality

+ Commercial and crossbred animals

+ Genotype animals before selection decisions

+ Be open-minded to future opportunities.

= A World-Leading Outcome:
More accurate breeding decisions leading to faster and more directed genetic gain