



NZ Egg Industry Conference 2017

Millbrook - Queenstown

Benoît PELE

Managing Director

Shaver Brown Breeding Program

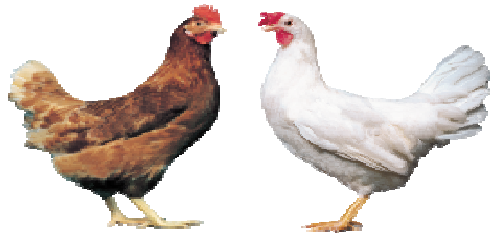
Balanced breeding

- Production efficiency
- Product quality
- Health & welfare
- ...



Evolution of genetic improvement by selection

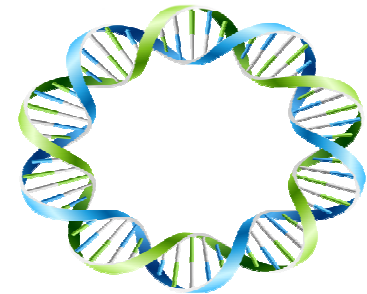
BEST LOOKING



**STATISTICAL
MODELS**

$$Y = \sum_{j=1}^k \theta_j X^j + E$$

DNA

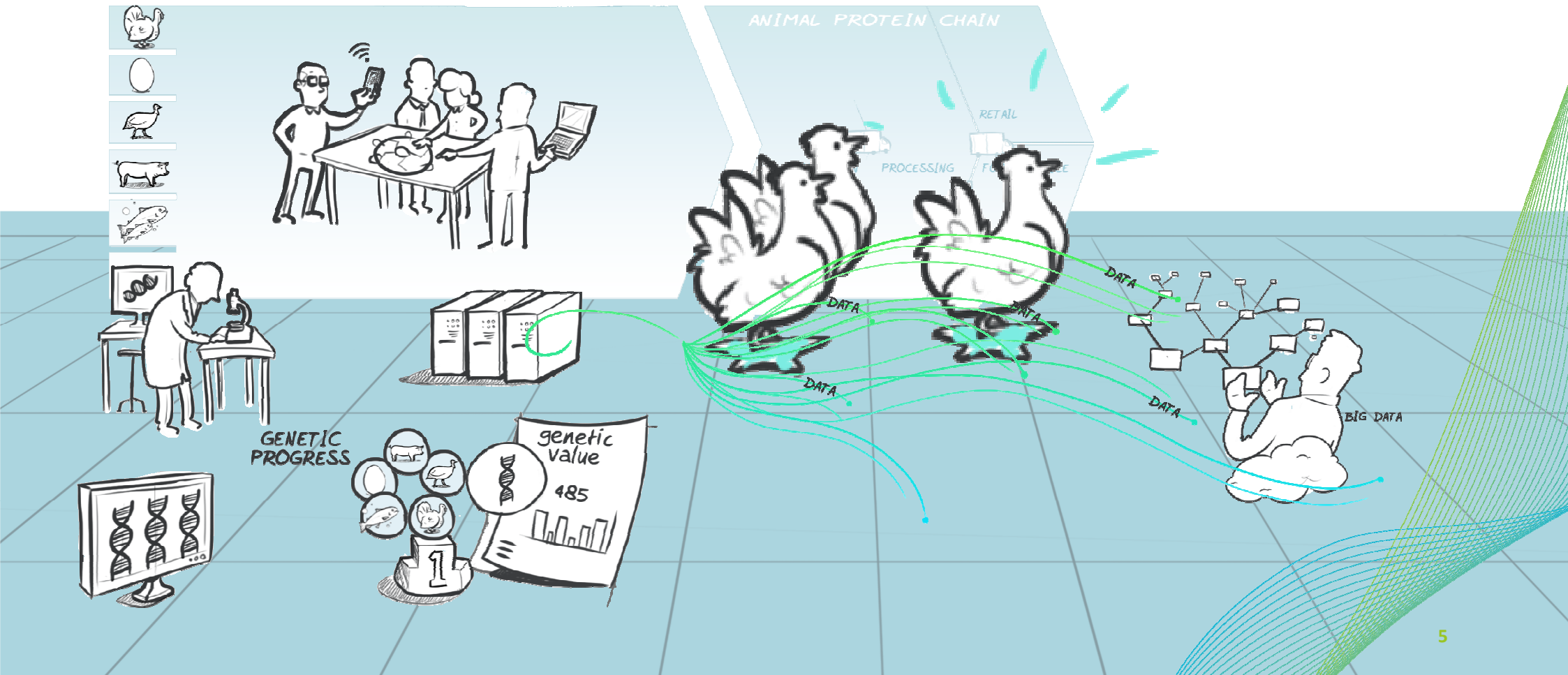


*Until
1960*

1960 to
1990

Since
2000

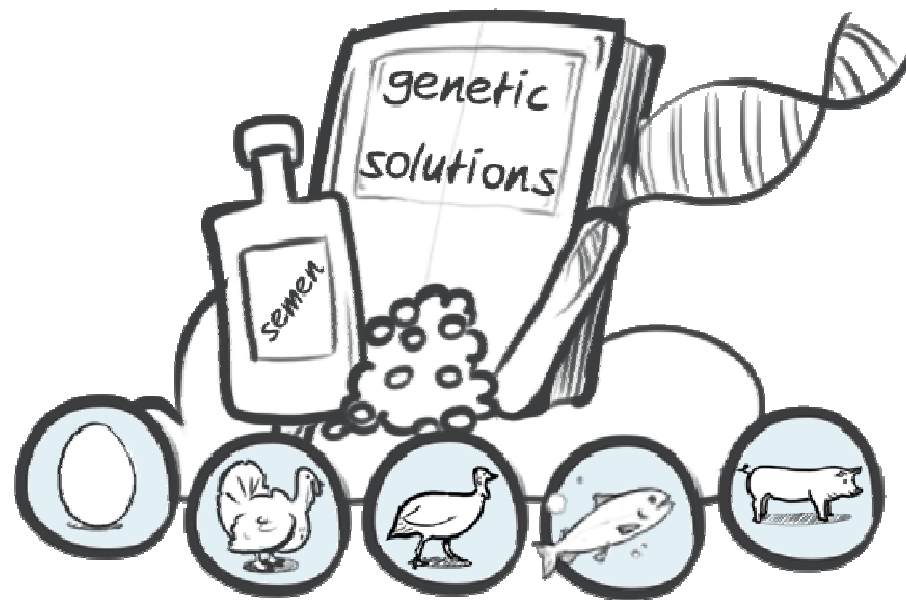
Animal breeding is high-tech, big data



Genetics provide numerous solutions

Selecting
animals for
different housing
systems

Adding value
to food
produced



Reducing impact
on environment

Increasing
offspring and
output per animal

Minimizing losses
due to disease or
environment

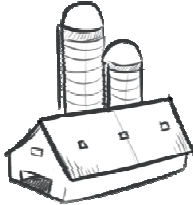
Maximizing
energy utilization
in production

Multi-disciplinary service to realize genetic potential

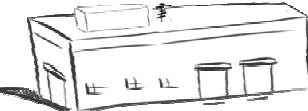


Key facts of our breeding programs

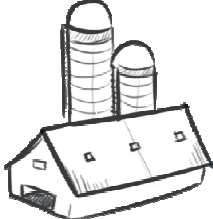
25  million animals in our breeding database

34  R&D farms

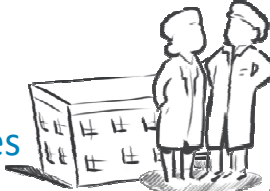
600  million measurements

39  hatcheries

450  million estimated breeding values

287  multiplication farms

39  geneticists

3  laboratories

More than 90 traits for SHAYER breeding program

Productivity

Egg number



External Quality

Egg weight
Fracture force
Deformation
Egg diameter
Egg shape
Egg shell colour (L,a,b)
Colour uniformity
Shell less Egg
Kdyn, Kstat
Dark brown spots
White banded
Roughness
Pinked



Internal Quality



Albumen height
Haugh Units
Meat/Blood spots
Dry matter content
Yolk weight
Double yolk
Vitelline membrane strength

Feed Efficiency



Body weight
Feed consumption
Feed efficiency

Reproduction



Hatchability
DOC quality
Semen score
...

Rusticity



Behaviour
Adaptability
Feather score
Legs disorder
Liveability

www.shaver-poultry.com

SHAYER



Changing requirements in housing systems, more focus on animal welfare

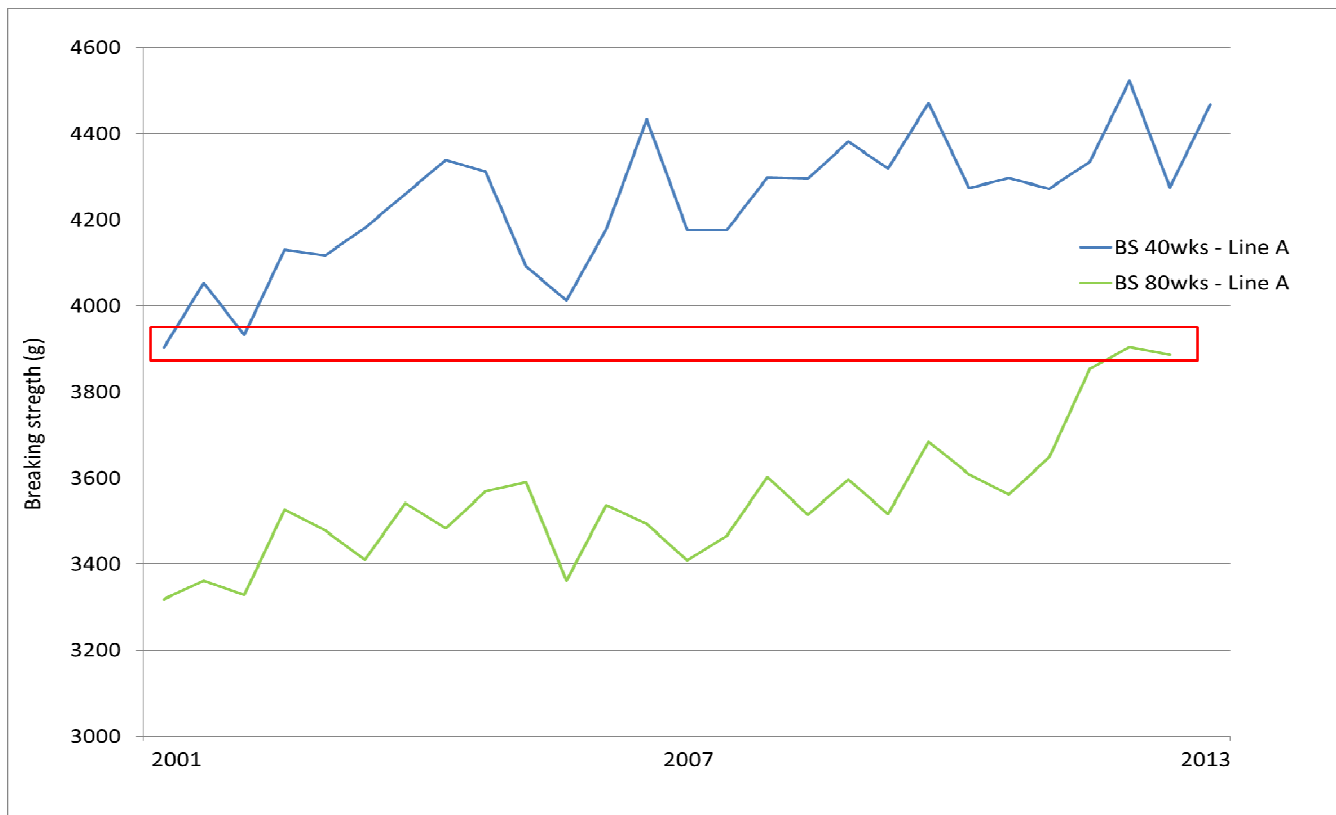


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Breeding Results Pure Lines

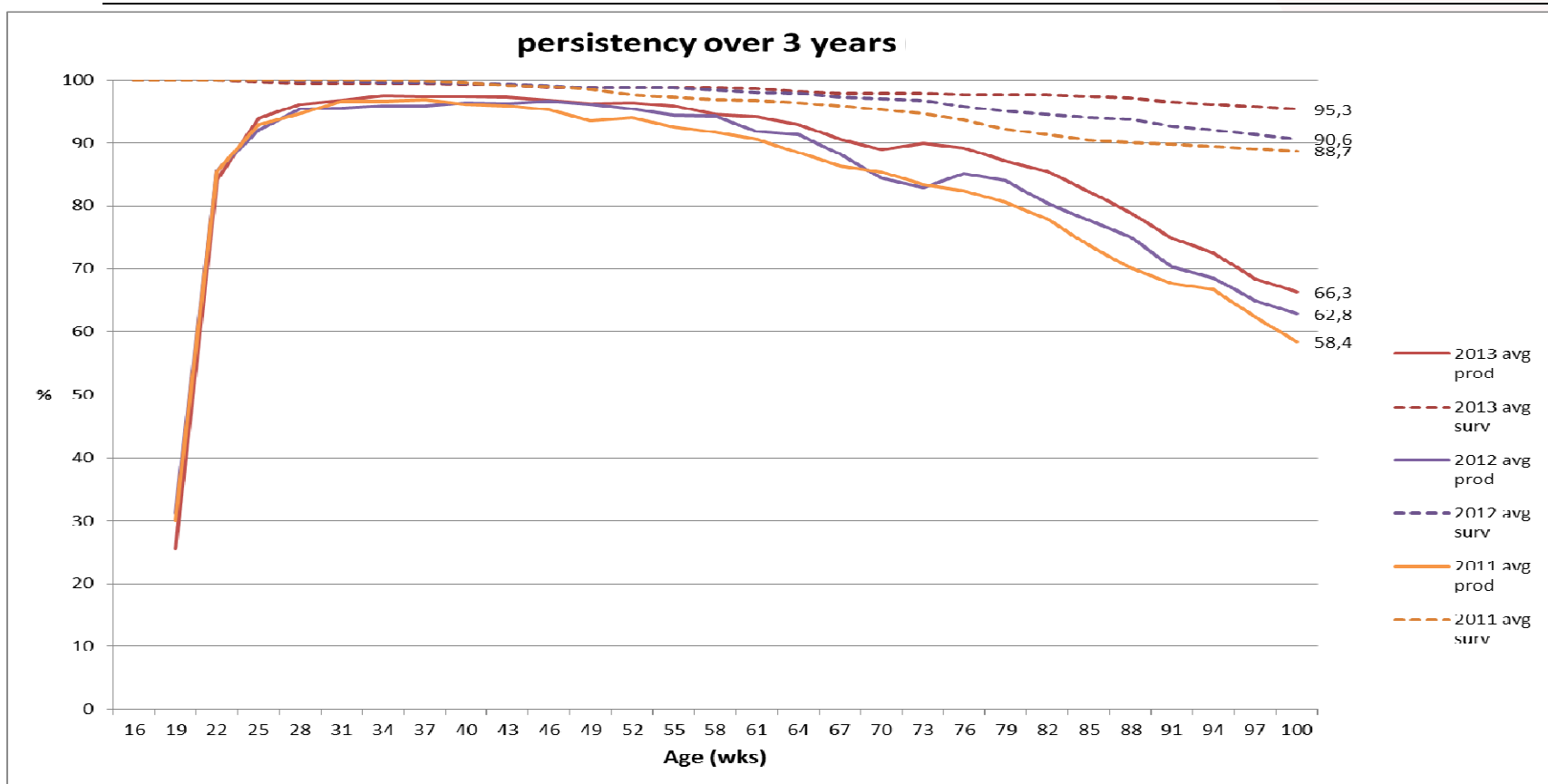
→ Continuous improvement of shell strength



- Shell strength is the same:
- In 2001 at 40 weeks old
 - and
 - In 2013 at 80 weeks old!

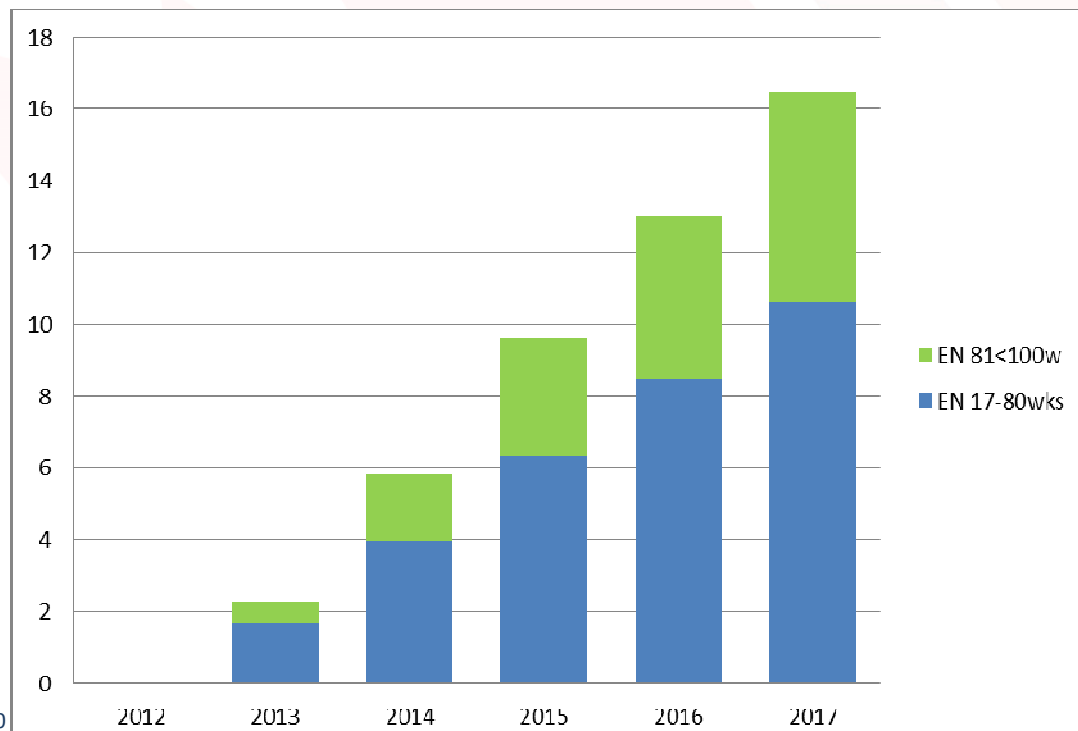
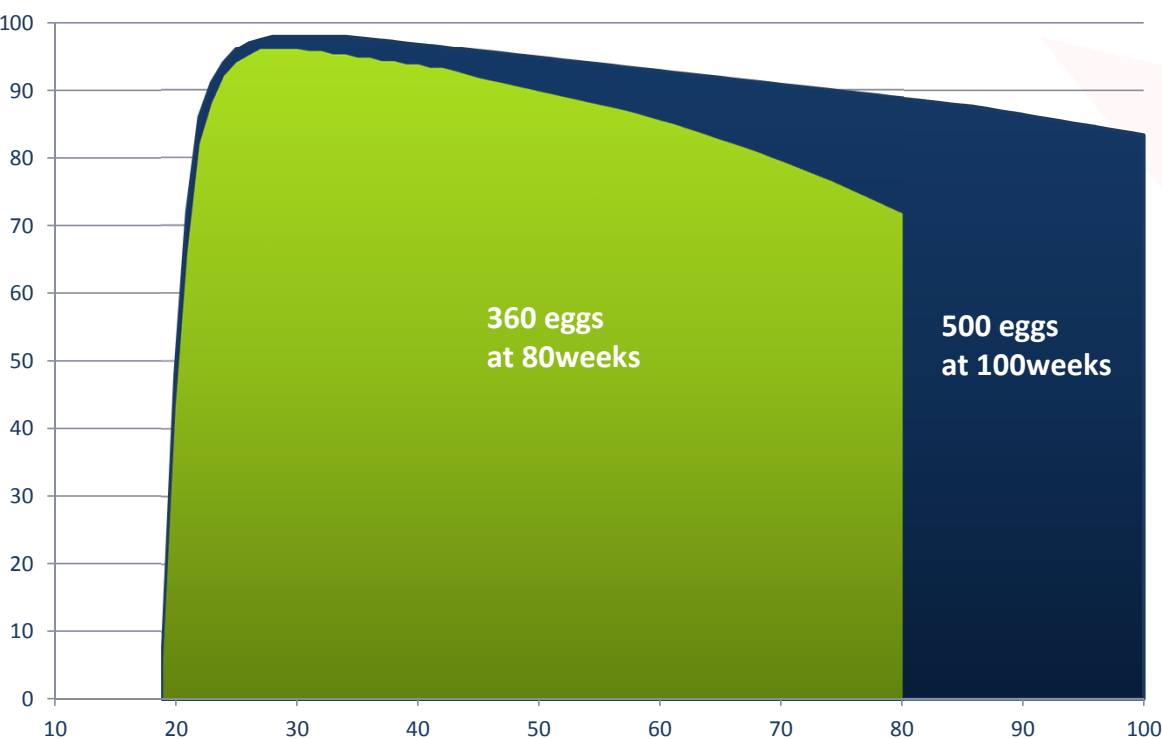
Breeding Results Pure Lines:

→ continuous improvement of egg number and liveability



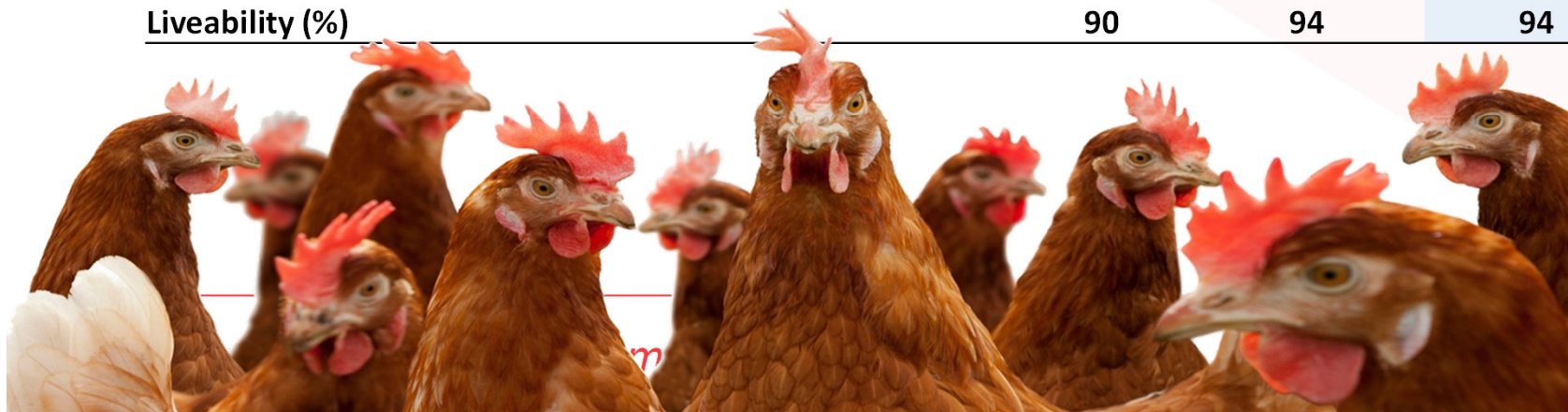
Genetic trends:

→ Egg number increases by more than 3 eggs per year,
with better persistency



Breeding Results - Shaver Brown Egg Layers

	1970	2000	2015	2020
Egg numbers hen housed (at 75 weeks)	239	306	343	361
Egg numbers hen housed (at 90 weeks)			419	446
Egg numbers hen housed (at 100 weeks)				500
Maximum lay rate (%)	86%	95%	97%	97%
Egg mass (kg. at 75 weeks)	14,9	19,2	21,5	22,6
Egg mass (kg. at 90 weeks)			26,4	28
Egg mass (kg. at 100 weeks)				31,5
Daily feed intake (grams)	127	114	113	112
Feed conversion (grams feed/grams egg mass)	3,46	2,41	2,19	2,07
Liveability (%)	90	94	94	95



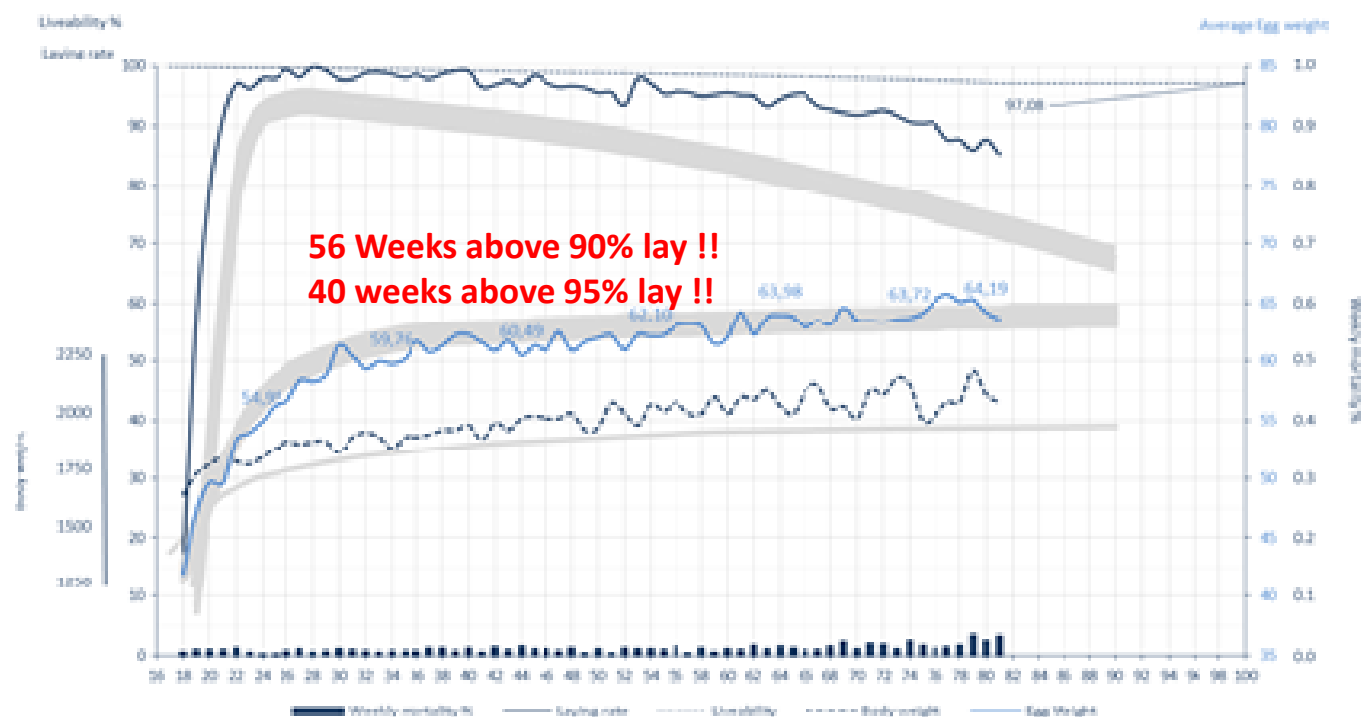
SHAYER

Field results with Shaver Brown layers in NZ



Laying performances

Hatch date: 17-Mar-14
 Breed:
 Number of laying birds housed: 415-500



Standards of production:

- 366 eggs at 80w.
- 416 eggs at 90w.

Results :

- 3 % mortality,
- 406 eggs at 80w.
- +11% above Standard

Conclusions of Hendrix Genetics Layer Breeding Program

Hendrix Genetics invests in research and new technologies.

A balanced breeding program, including many data from field tests in various environments and systems of production.

A continuous genetic improvement for all economical traits, including egg quality, egg processing, feed conversion and laying persistency.

Hendrix Genetics layers move to 500 first quality eggs in prolonged cycles.