Poultry breeding to contribute to sustainable and global animal production

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Contribution to Sustainable development goals

Focussed on:

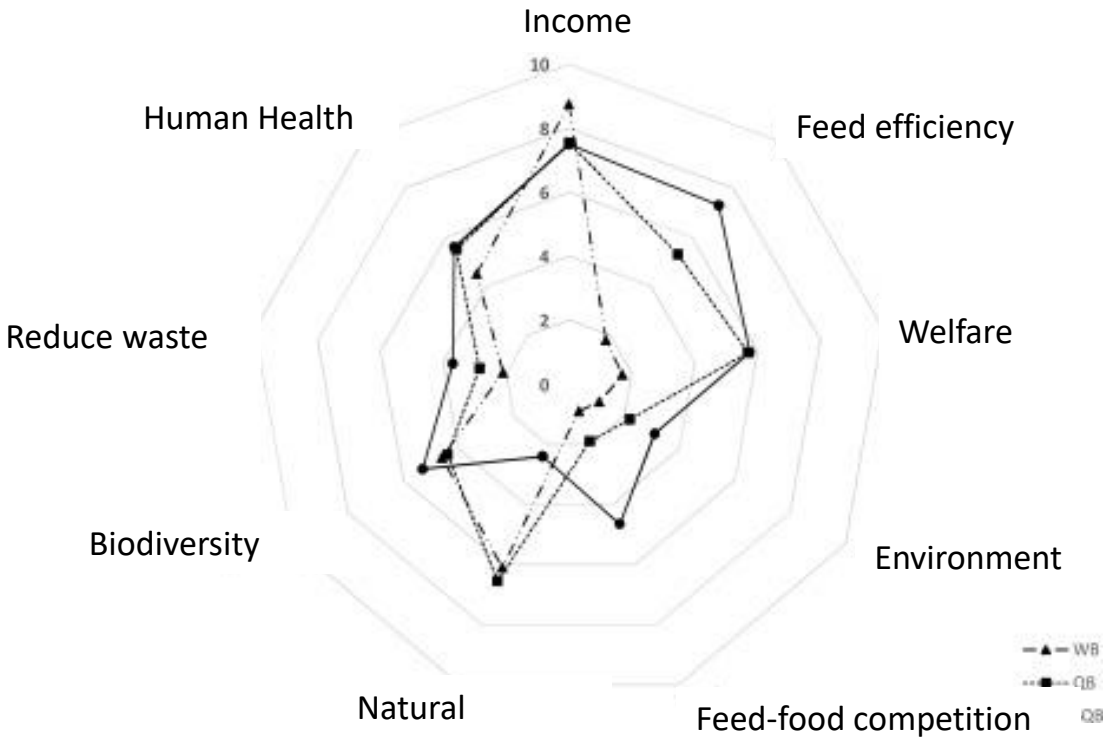
Through:

1. Sustainability program: focused on our activities
2. Breeding program: focused on contribution to protein value chain

Contributing to sustainable and global poultry production

- One size does not fit all ➔Different brands (hybrids) to meet the diversity in production and market conditions
- Pure line Breeding program to drive the improvement of the brands
- Challenge is dealing with trade-offs between traits and changes in market needs ➔ what is right balance

Sustainability



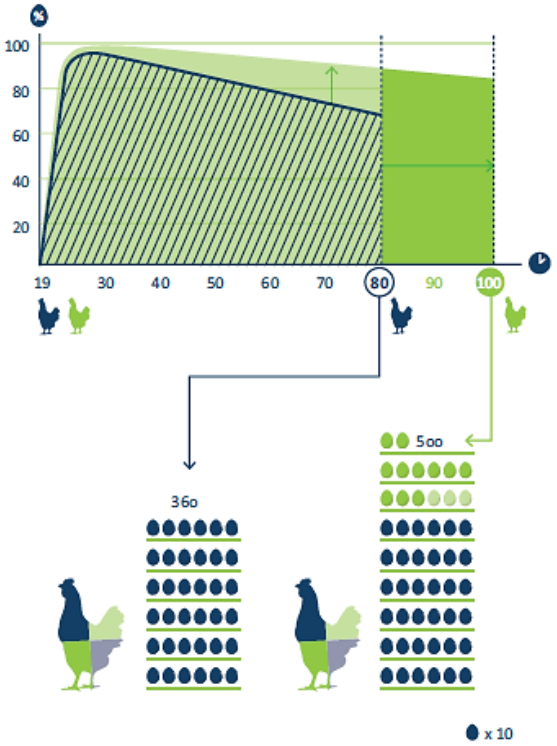
Development of in Brown commercial layer

		1970	2020
HH EGGS AT 75 Weeks	*(NRS)*	*239*	361
HH EGGS AT 90 Weeks	*(NRS)*		**446**
HH EGGS AT 100 Weeks	*(NRS)*		**500**
AGE AT 50% PRODUCTION	*(WKS)*	*26*	20
AGE AT PEAK PRODUCTION	*(WKS)*	*29*	25
RATE OF LAY AT PEAK	*(%)*	*86*	97
EGG MASS AT 75 Weeks	*(KG)*	*14.9*	22.6
EGG MASS AT 90 Weeks	*(KG)*		**28.0**
EGG MASS AT 100 Weeks	*(KG)*		**31.5**
FEED/DAY	*(G/D)*	*127*	112
FCR	*(KG/K)*	*3.46*	2.07
LIVEABILITY	*(%)*	*90*	95
HEN DAY RATE OF LAY AT 75 Weeks	*(%)*	*55*	**82**
BODYWEIGHT AT 18 Weeks	*(KGS)*	*1.72*	1.50
ADULT BODYWEIGHT	*(KGS)*	*2.5*	1.9

Development of the modern White commercial layer

		1970	2020
HH EGGS AT 75 Weeks	*(NRS)*	*250*	*364*
HH EGGS AT 90 Weeks	*(NRS)*		***449***
HH EGGS AT 100 Weeks	*(NRS)*		***505***
AGE AT 50% PRODUCTION	*(WKS)*	*24*	*20*
AGE AT PEAK PRODUCTION	*(WKS)*	*27*	*25*
RATE OF LAY AT PEAK	*(%)*	*88*	*97*
EGG MASS AT 75 Weeks	*(KG)*	*15,4*	*22,7*
EGG MASS AT 90 Weeks	*(KG)*		***28,3***
EGG MASS AT 100 Weeks	*(KG)*		***32,0***
FEED/DAY	*(G/D)*	*115*	*109*
FCR	*(KG/K)*	*3,03*	*1,98*
LIVEABILITY	*(%)*	*90*	*95*
HEN DAY RATE OF LAY AT 75 Weeks	*(%)*	*60*	***84***
BODYWEIGHT AT 18 Weeks	*(KGS)*	*1,4*	*1,3*
ADULT BODYWEIGHT	*(KGS)*	*1,8*	*1,7*

Laying persistency and longer cycles



Breeding program to meet challenges

Impact on breeding goal

Balanced breeding: adjusting the balance to meet the new demands

What changes are needed?

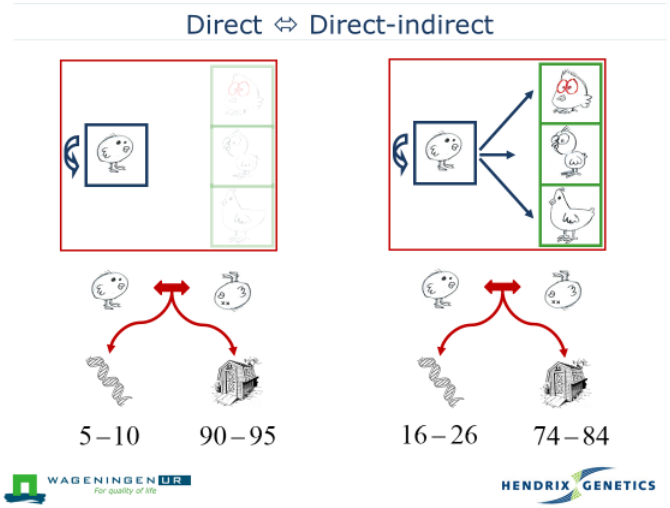
Impact on data collection

- R&D farms for Pure Lines
  - ✓ High bio-security – FAPP, Treated feed
  - ✓ many Pure Lines in unique gene pool
  - ✓ Testing and selection of new generations PL
- Field tests farms
  - ✓ Disease resistance
  - ✓ Robustness
  - ✓ Ensuring genetic potential is achieved under field conditions
- Novel traits
  - ✓ Robustness (NAbs)
  - ✓ Social interactions and behaviour
  - ✓ Feather cover

What, where and how?

Using genomic selection to exploit the collected data to realize genetic improvement for all breeding goal traits

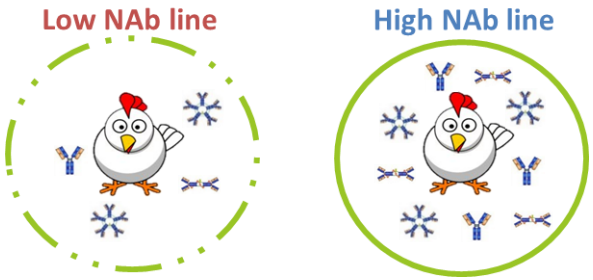
Breeding a social hen



- Social interaction model ➔ selection for improved survival <u>with intact beaks</u>
- Today: 80% of chicks hatched in Boxmeer are not beak treated

Improving disease resistance

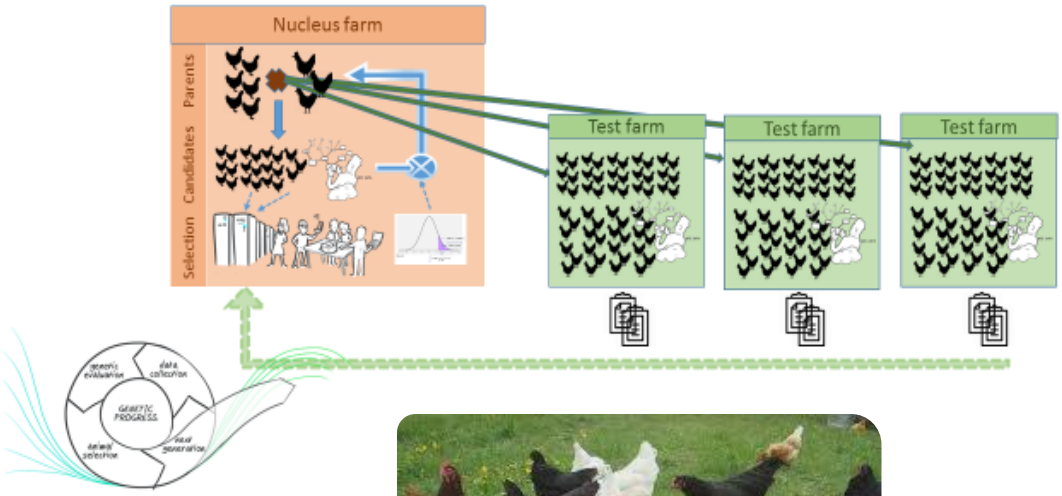
- Objective: improving general disease resistance of poultry by easy-to-measure and heritable parameter: Natural Antibodies



Field tests in range of environments

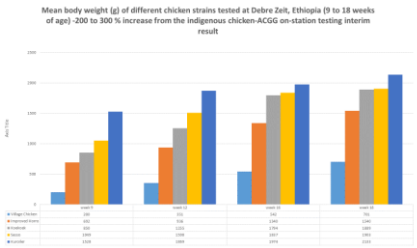
Reciprocal genomics selection

- Pure breed selected under biosecure conditions
- Offspring performance under local conditions
- Use genomic selection to exploit that information



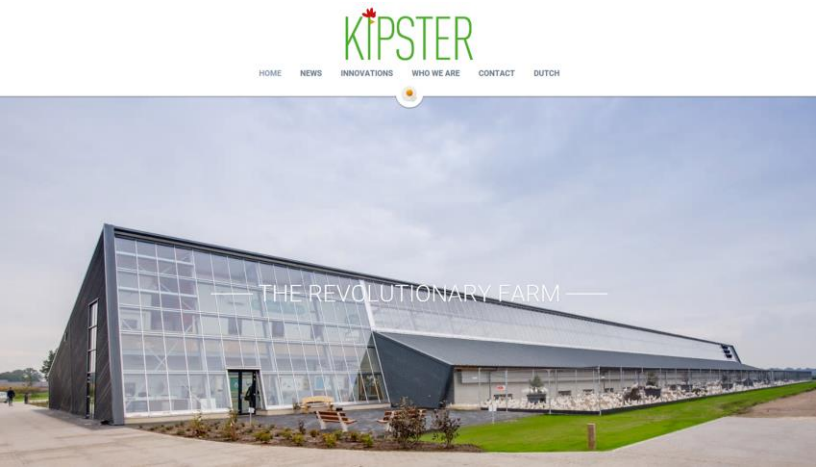
Balance between breeding for local needs and access

Poultry in the developing world



- Ethiopia: 95% of eggs produced by smallholders
- Poultry production provides a pathway out of poverty
- Improved genetics offers great potential
- Not only generating but also delivering progress to small holders

Our commitment goes beyond breeding



- Innovations are needed and we want to be involved
- In order to understand:
  - Impact on our breeding
  - Contribution we can make

Animal proteins

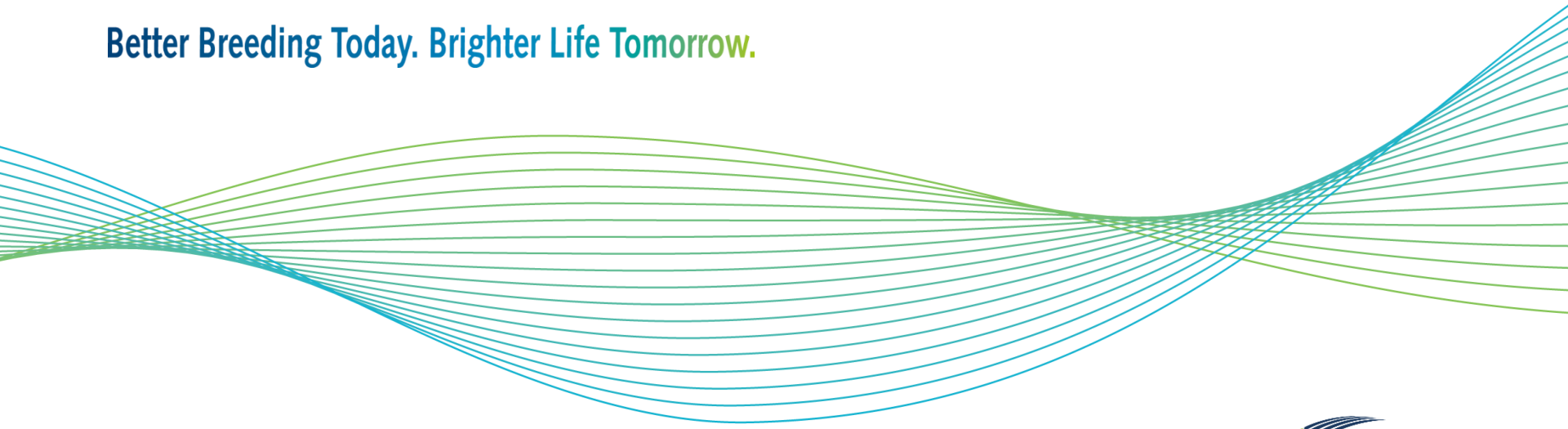
Animal proteins play an important role in the daily diet of many people

We need to work on more sustainable production and responsible consumption

One size does not fit all

Thank you for your attention

Better Breeding Today. Brighter Life Tomorrow.



HENDRIX GENETICS