

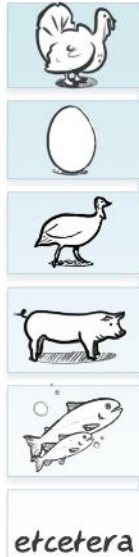
Key to success: Trout production with Troutlodge eggs

Central Fish Producer's Association Seminar
Antalya, Turkey

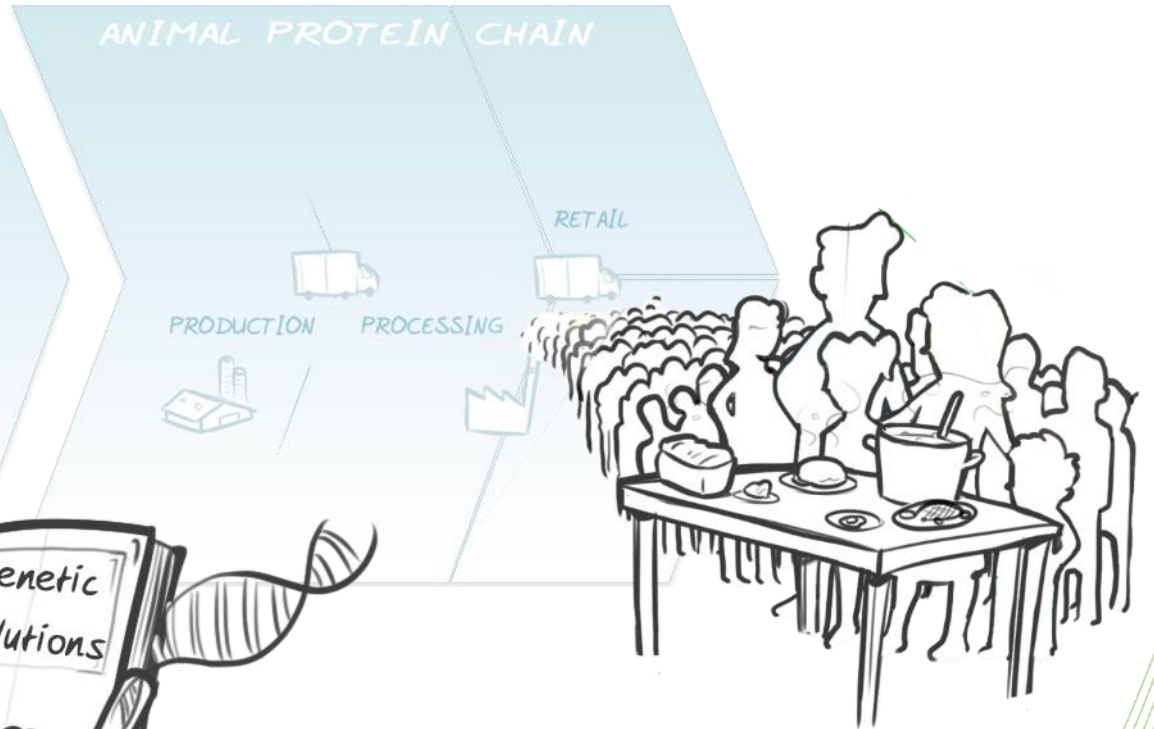
February 2020



Our mission



Supporting the global food challenge
with high quality animal genetics

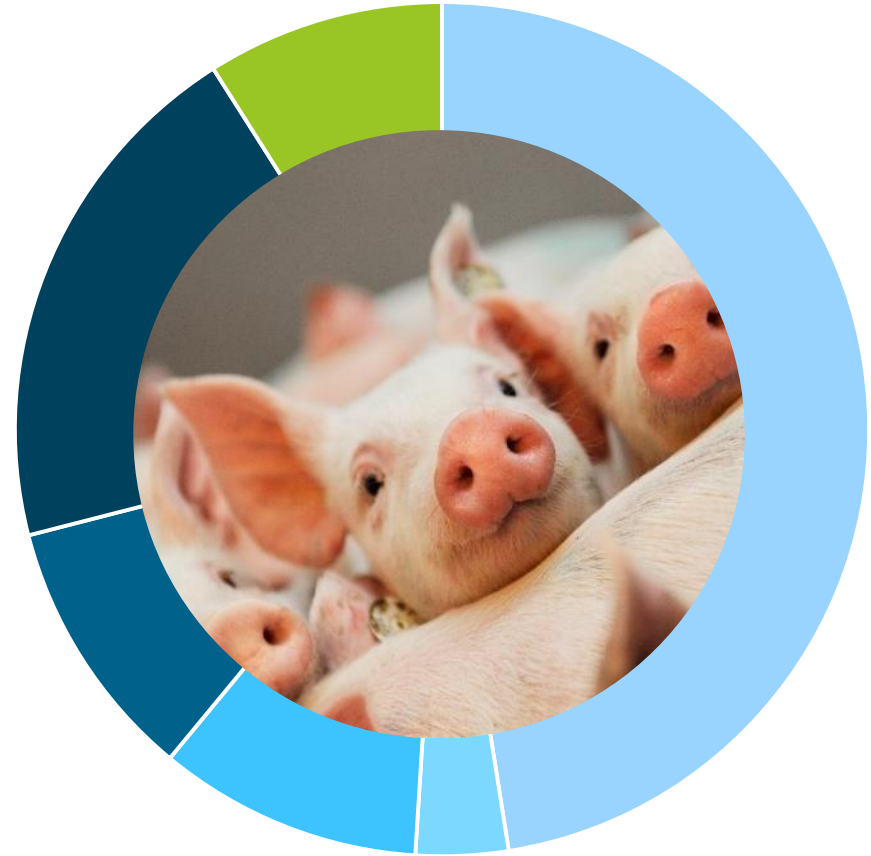
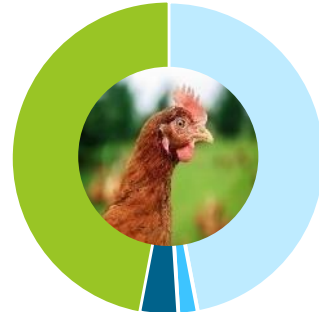
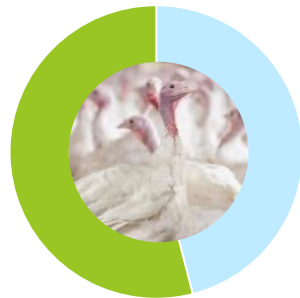
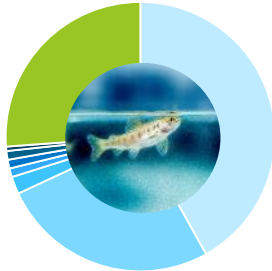


Operations in 26 countries with >3,500 employees

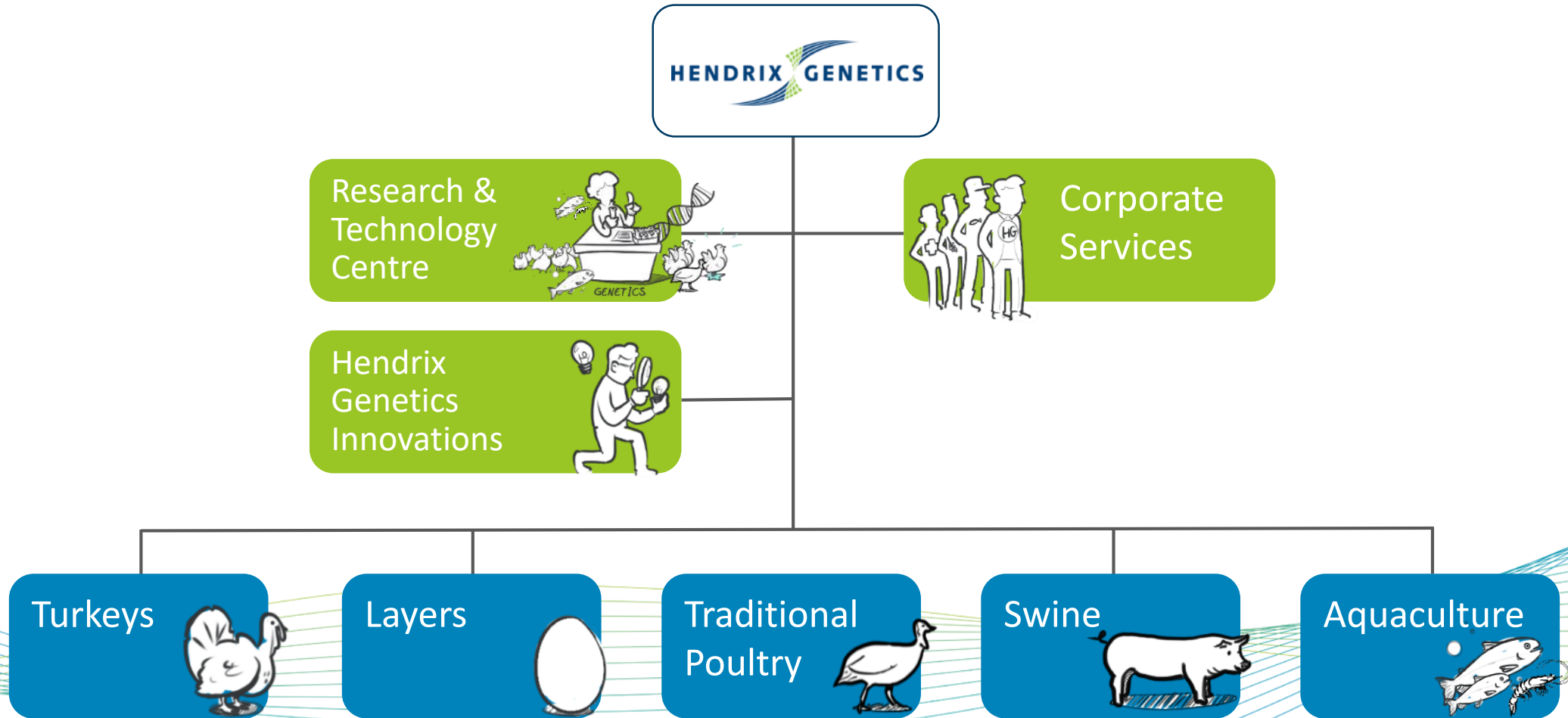


We have leading market shares in markets of different size

 Hendrix Genetics



Organisation structure



Research & Technology Centre

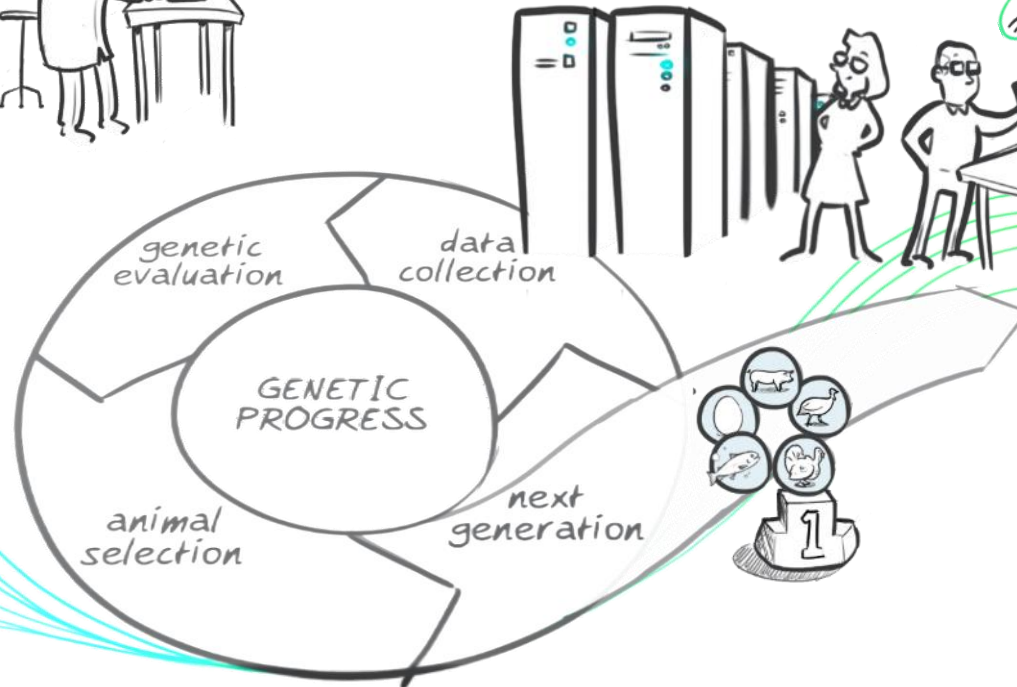
Genetics and genomics research



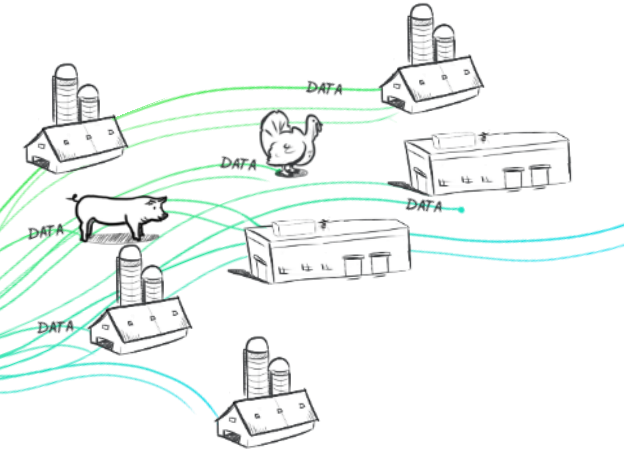
New technologies



Science network



Breeding IT



- Data collection
- Data storage
- Data management
- Soft- and hardware development

Hendrix Genetics Aquaculture: Our brands

Landcatch 

Troutlodge 



KONA BAY



Genetic Support
Collaboration

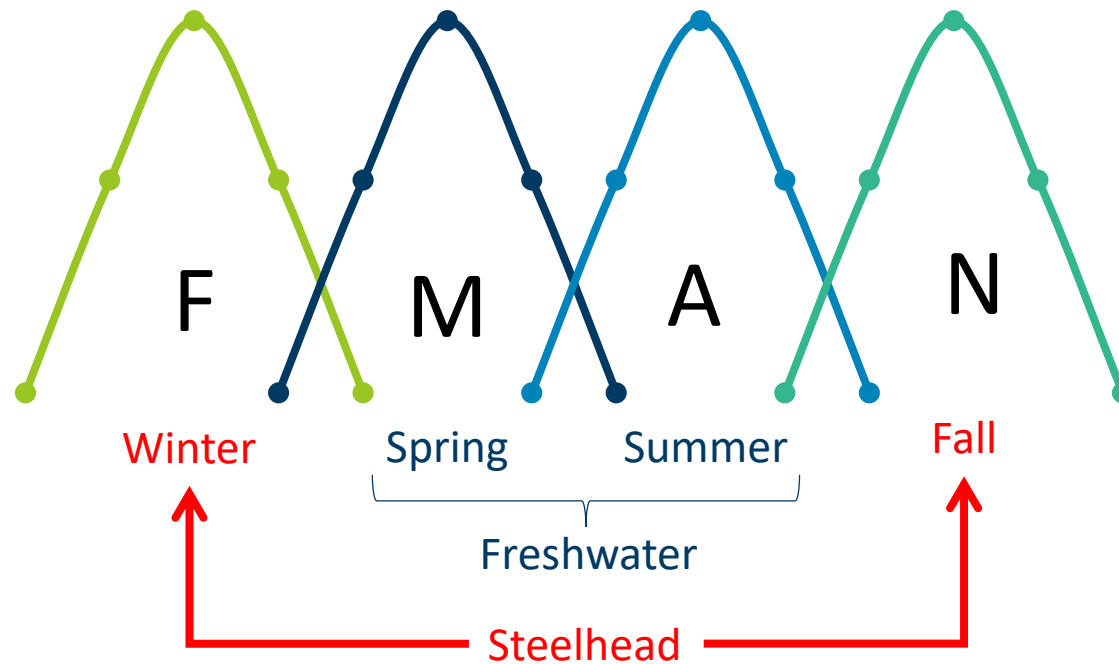


salmones
Aysén 



Troutlodge History

- 1945 – Ed McLeary acquires first stocks
- Year round availability: Unique!



Troutlodge Egg Sales

450 M Eggs
>45 Countries

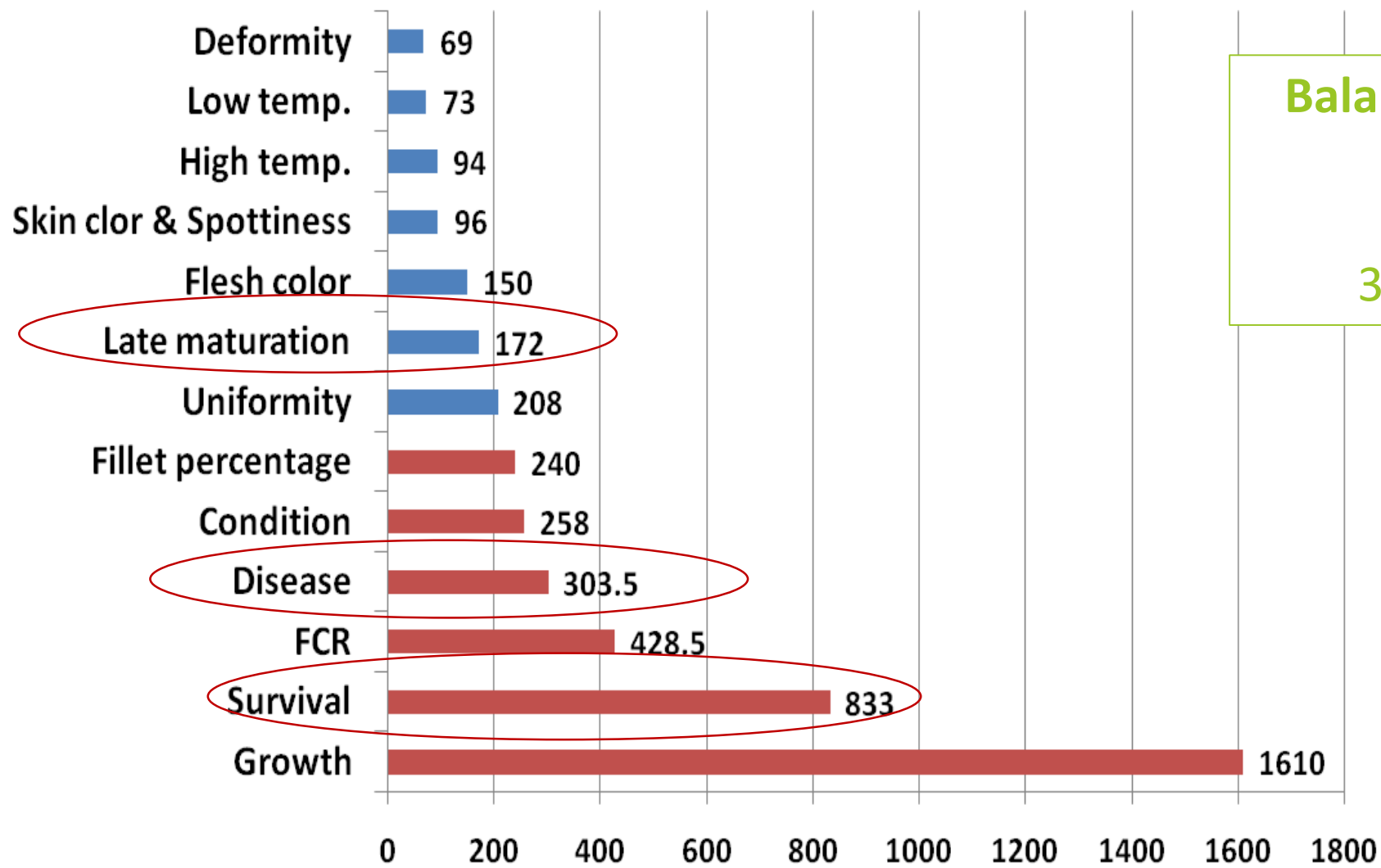


TL USA
Brood
Selection

Many Different Environments



Industry Preferences – 2010



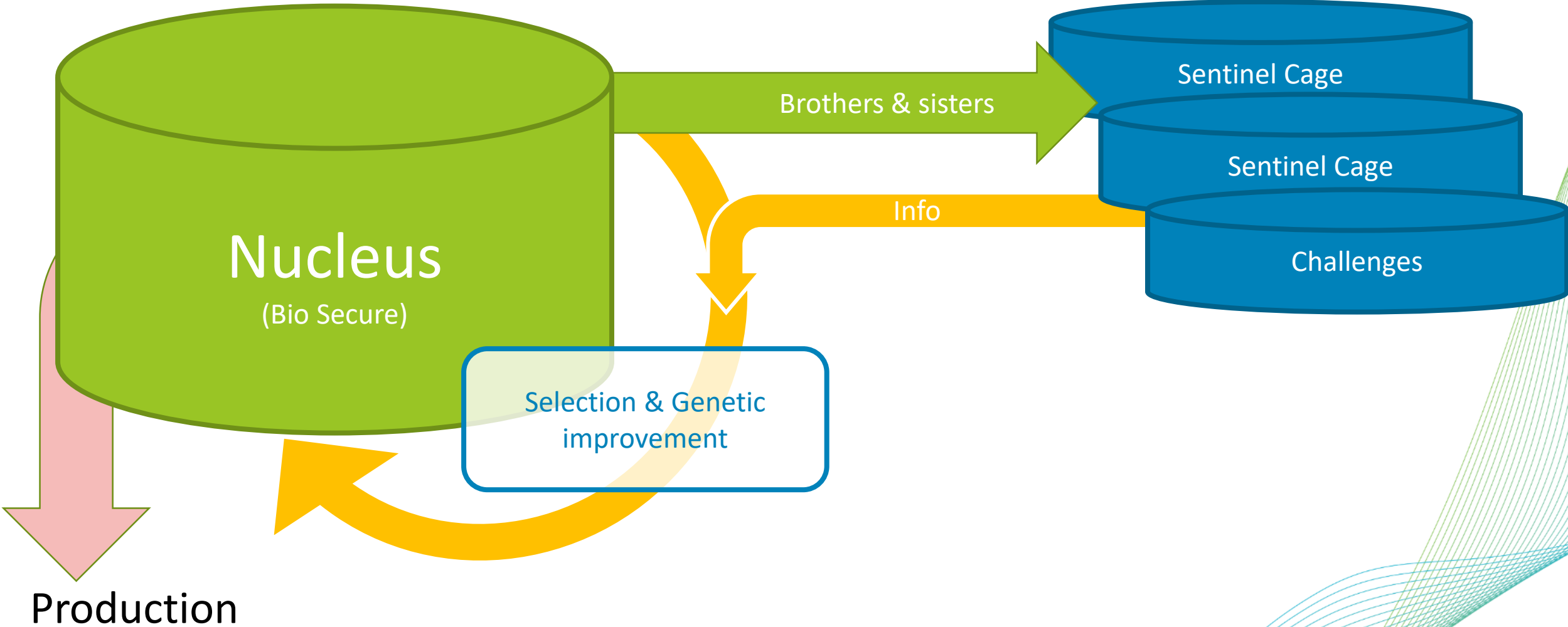
Balanced Breeding Goals:

- 1) Grow Fast
- 2) Don't Die
- 3) Processing Traits

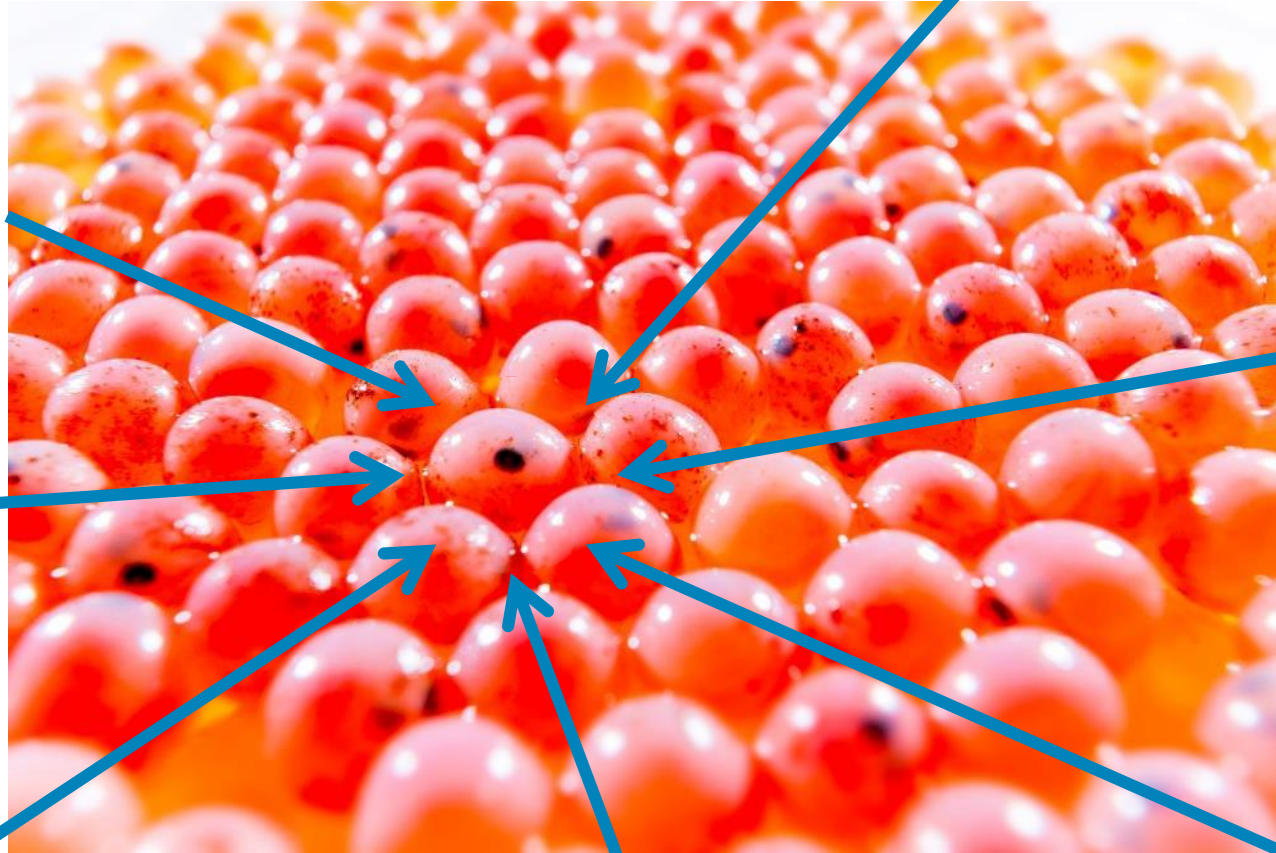
Representative Customer Base

- USA & Canada
- Europe
- Asia
- South America

BP structure



Our balanced products



Latest Genomic
Selection tech &
QTL's

Family based
selection
BLUP

Info from
commercial
environments

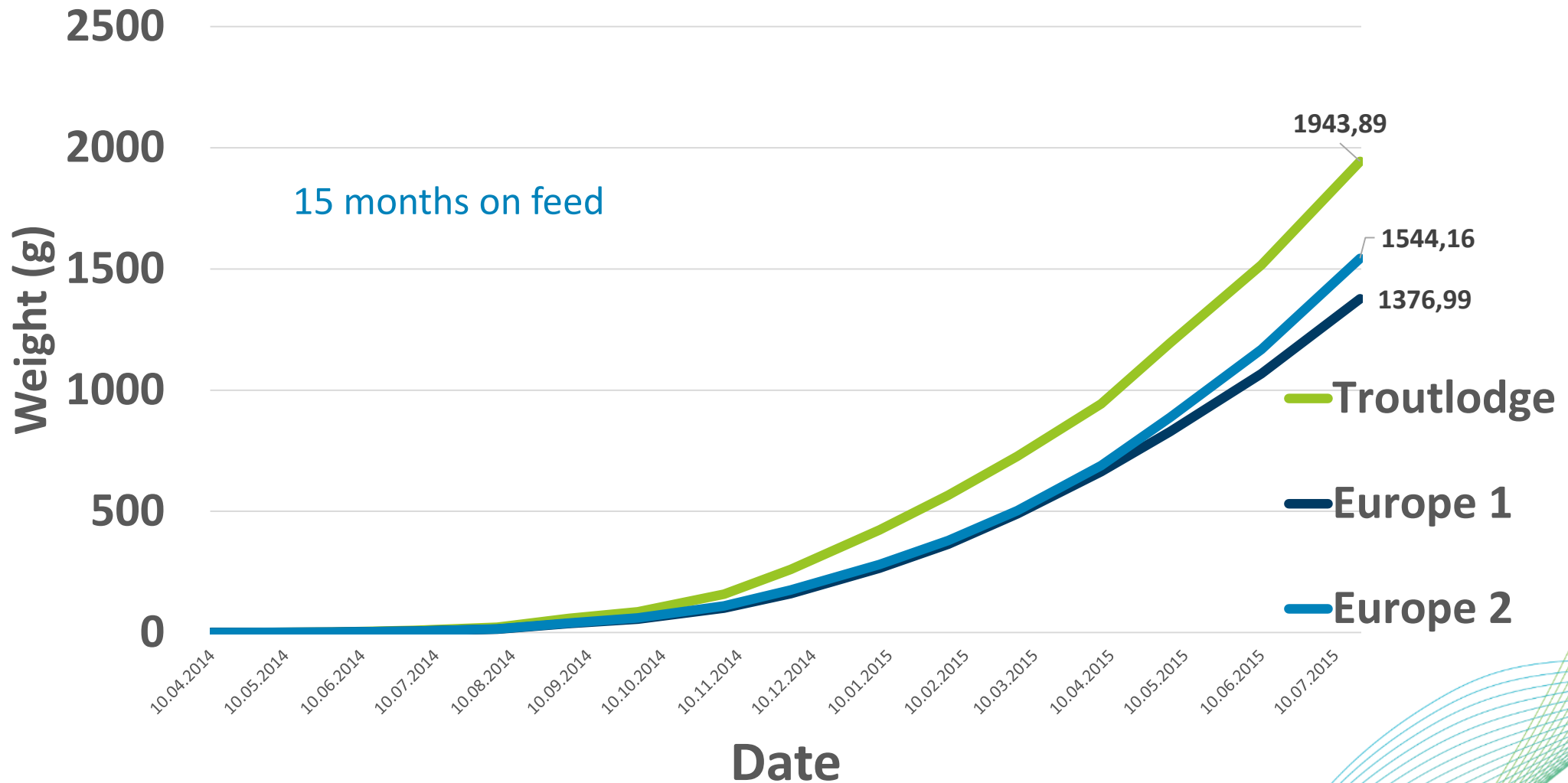
Multipliers

Genetic
diversity in
breeding stock

Processing characteristics

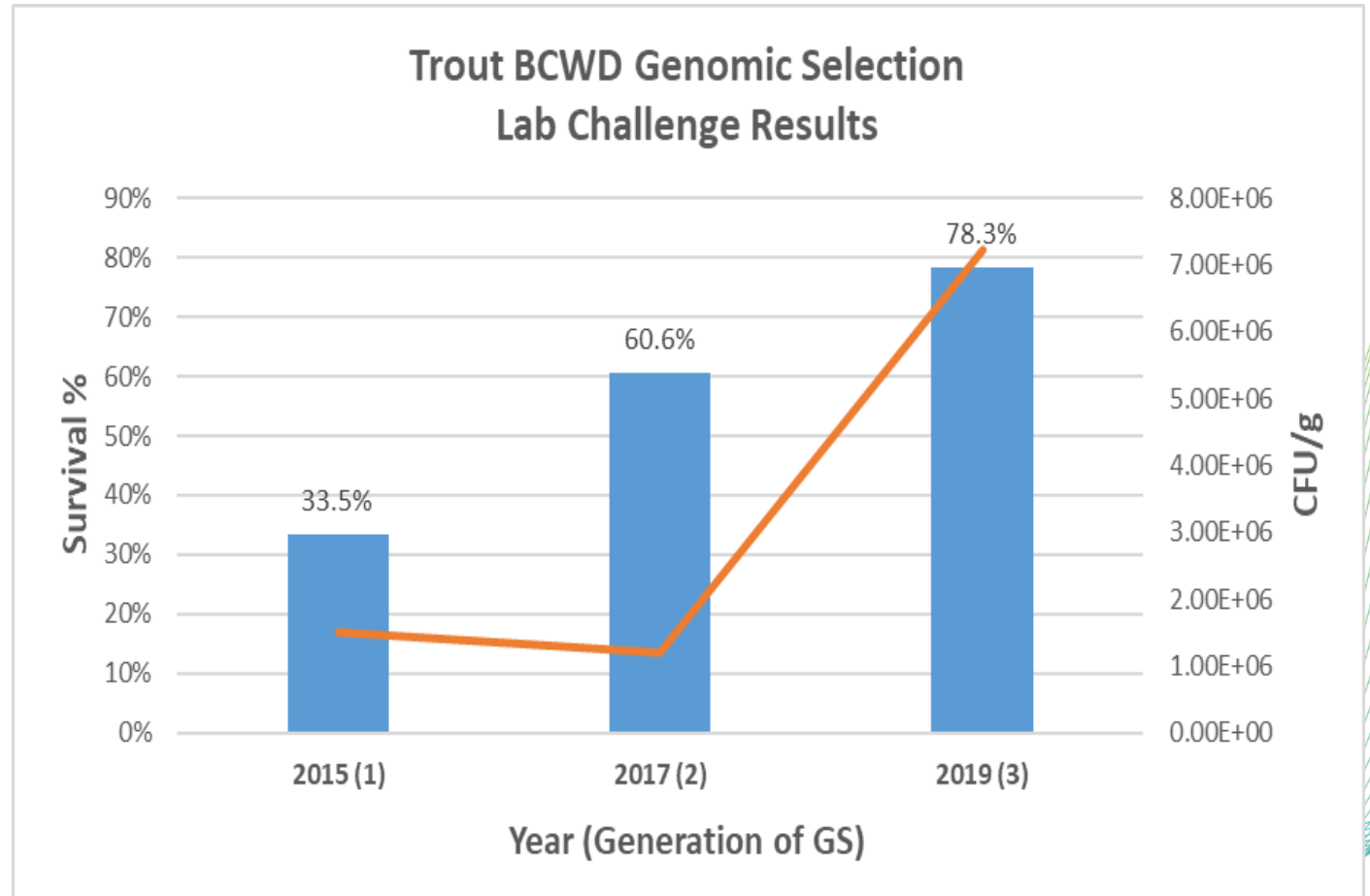
Disease
Challenges

Independent Growth Comparison



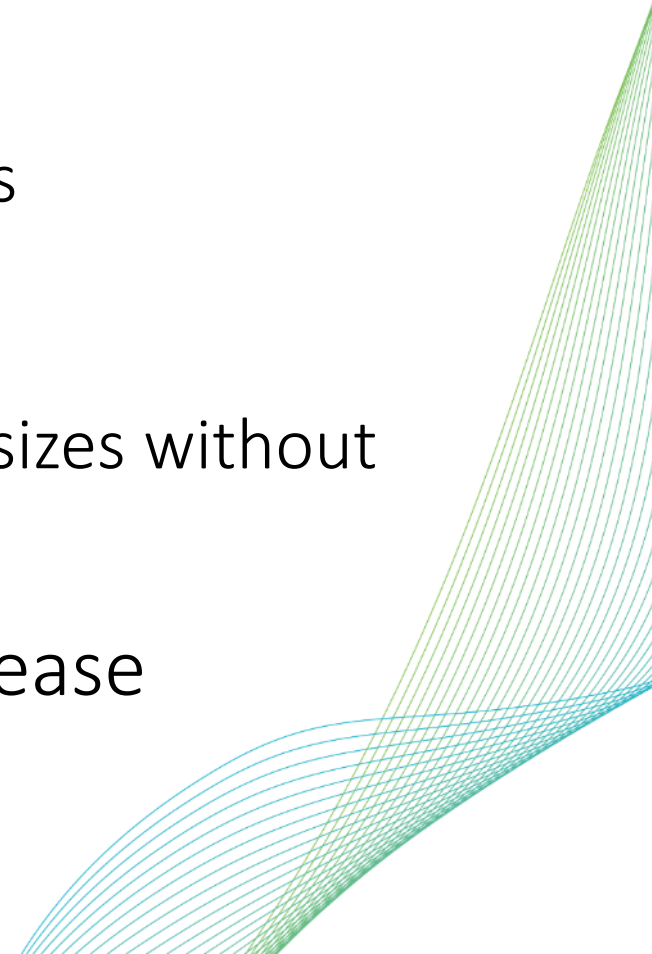
Impact of genomic selection

- Trout: BCWD
- Lab challenge survival increased from 33% to nearly 80%
- Simultaneous increase in bacterial concentration.



Products

- All-Female Eggs
 - Avoids precocious males
 - More uniform growth and better flesh characteristics
- Triploids
 - AF 3N: higher price, slower growth early, but larger sizes without egg development
- Enhanced Resistance to Bacterial Cold Water Disease



$$P = G + E$$

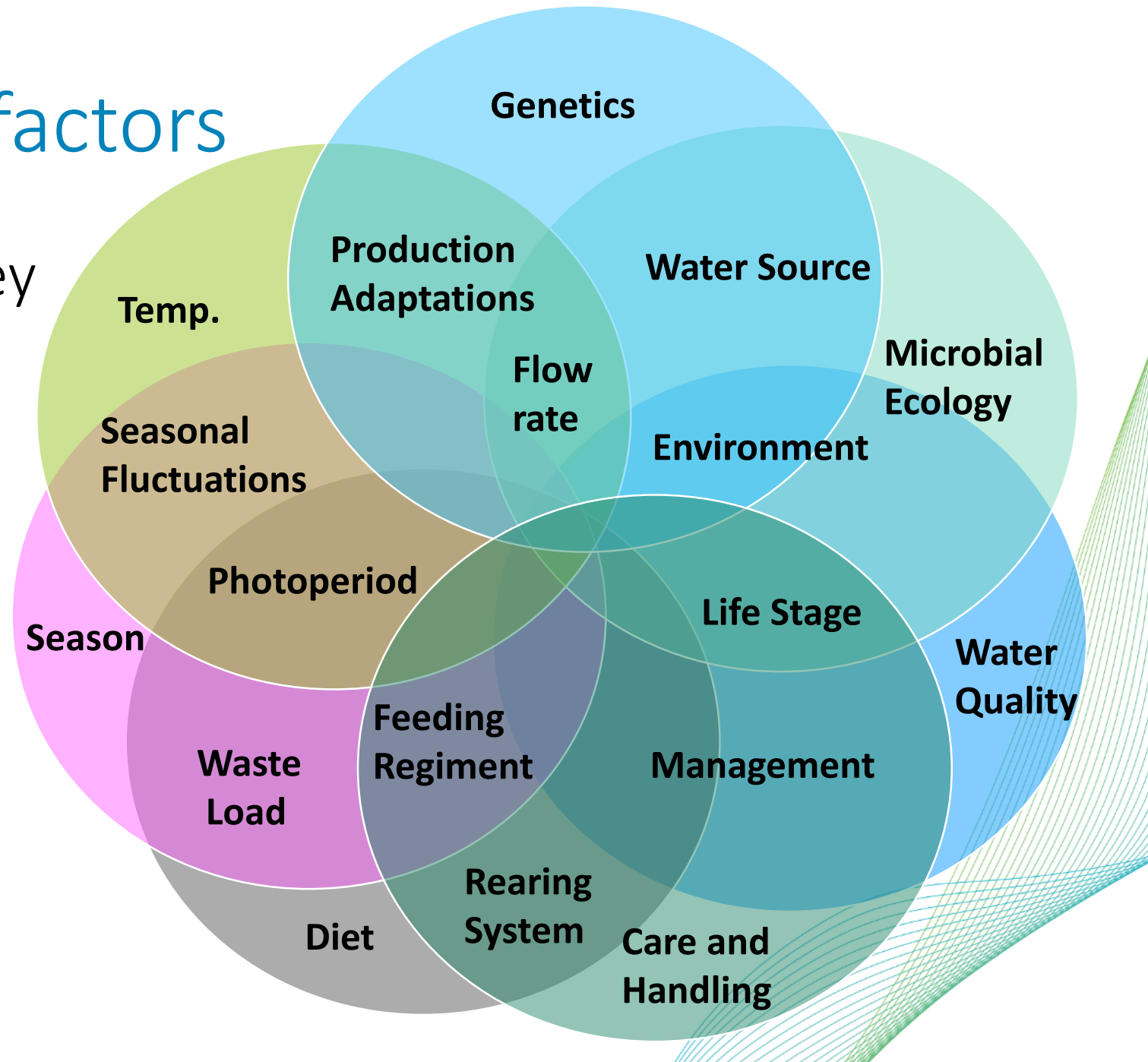


1: Environmental factors

- Genetics: part of the key to success
- Environment strong influence

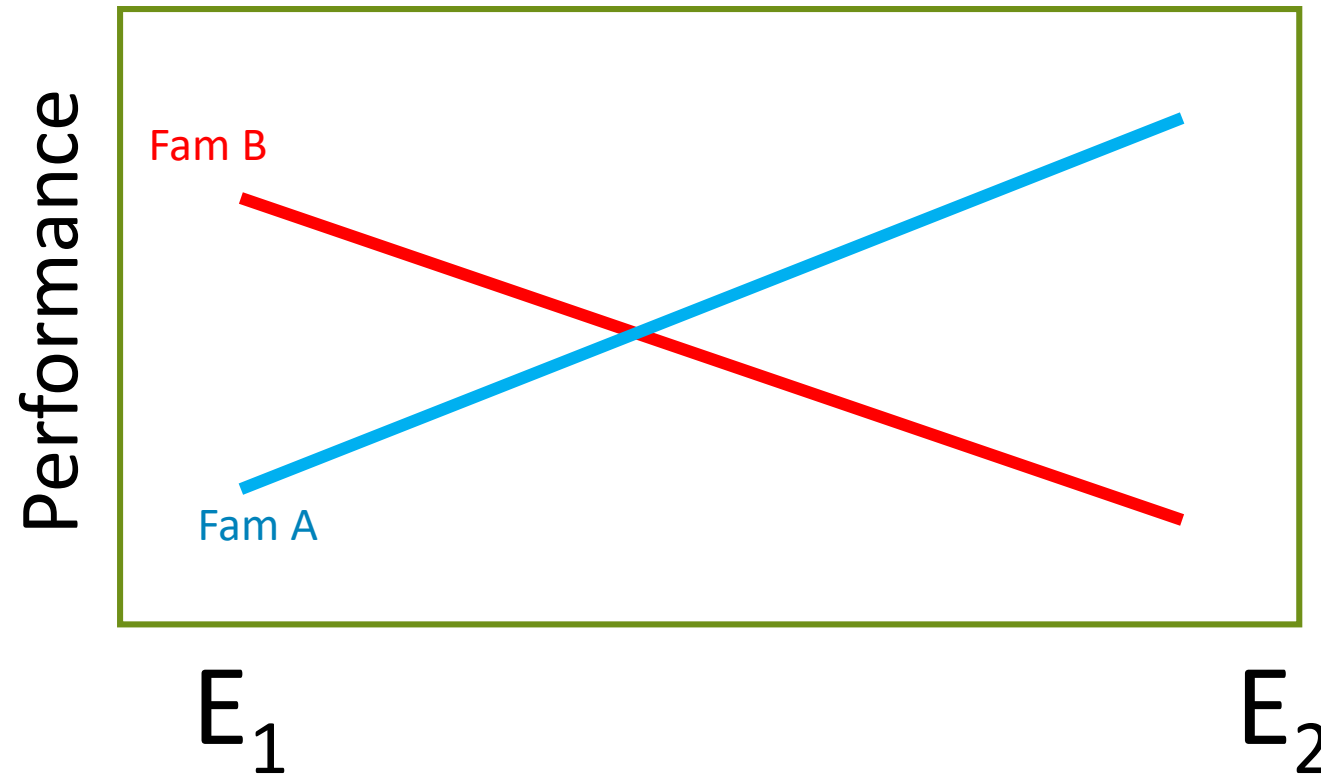
$$P = G + E$$

↓ ↓
30% 70%



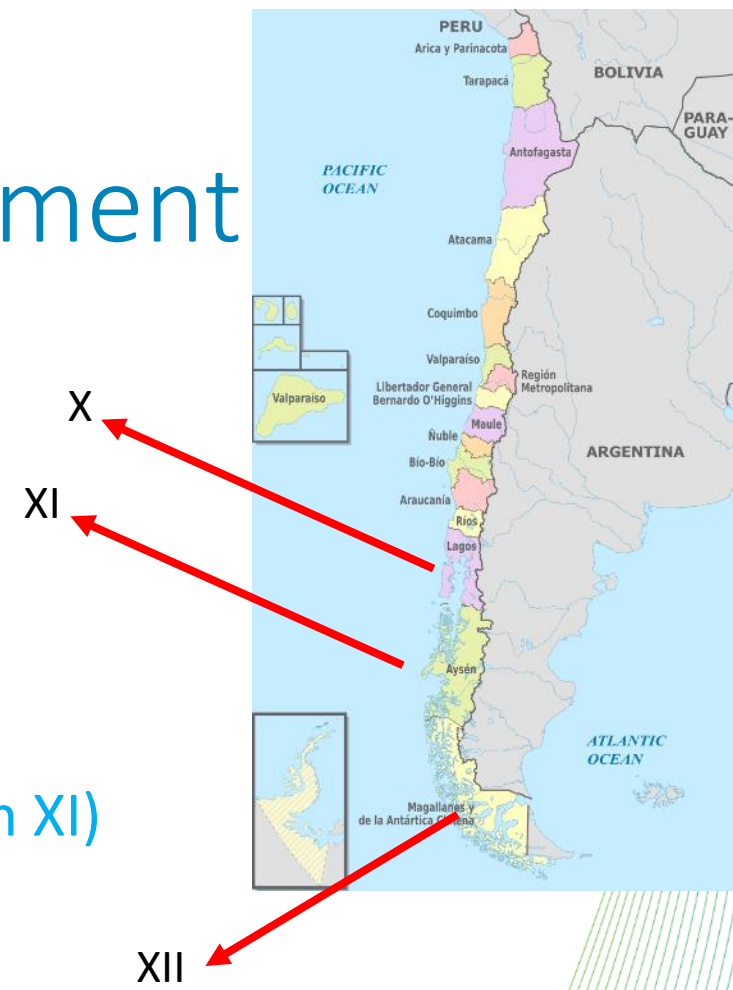
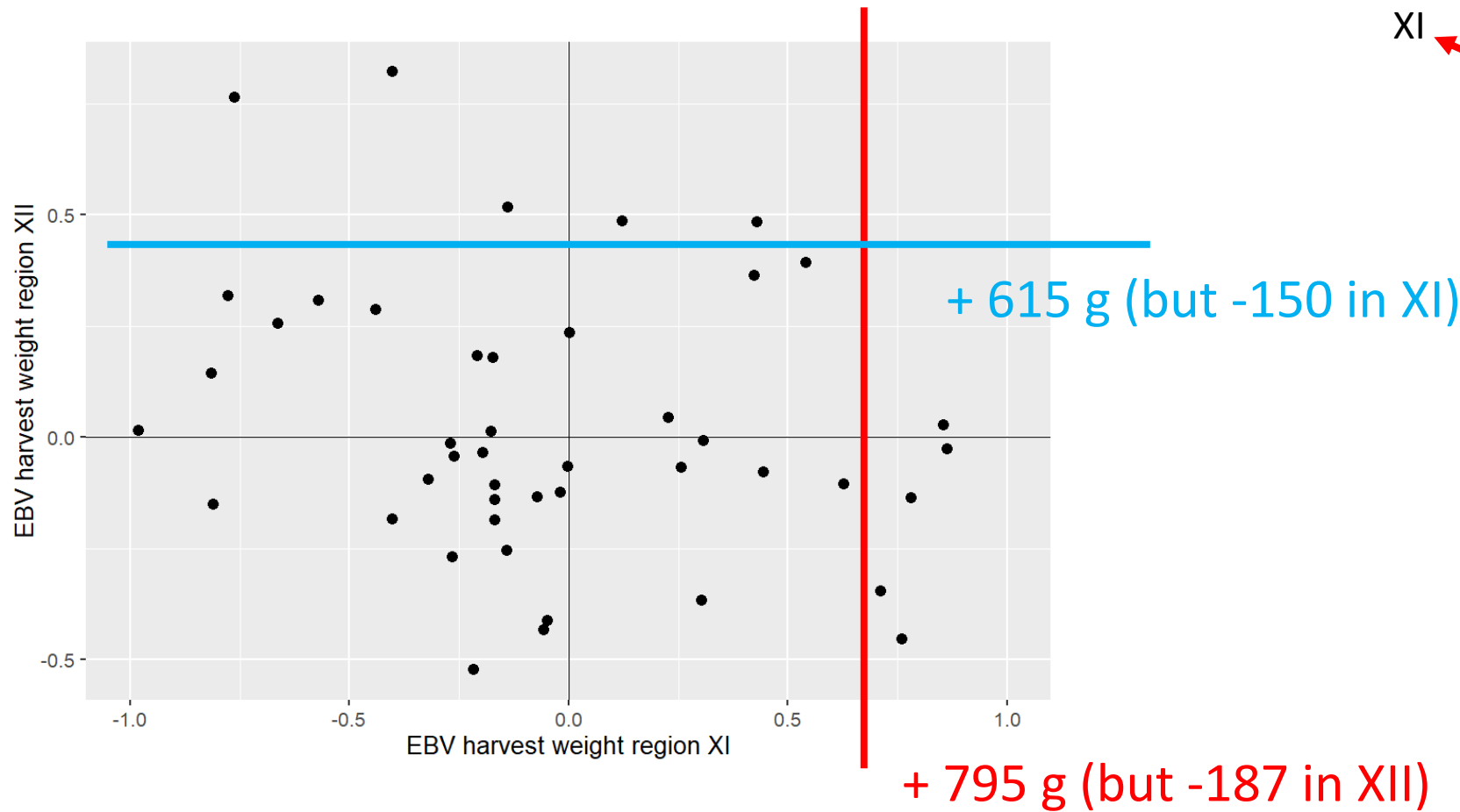
2: Interactions Genetics with Environment

- Genetics behave differently under different environments!



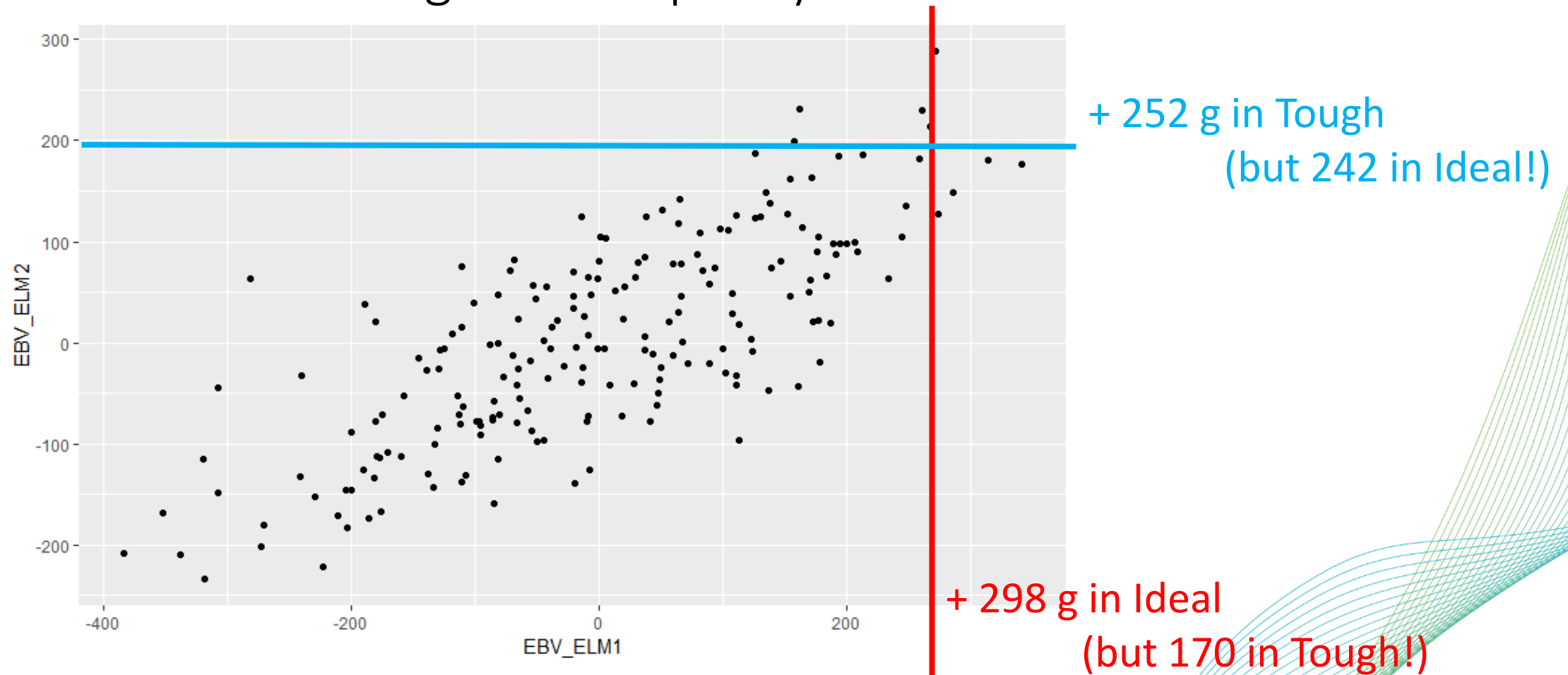
Interactions Genetics with Environment

- Salmon in Chile, Region XI vs XII (ca 700km)



Interactions Genetics with Environment

- Trout: Ideal vs Tough water quality

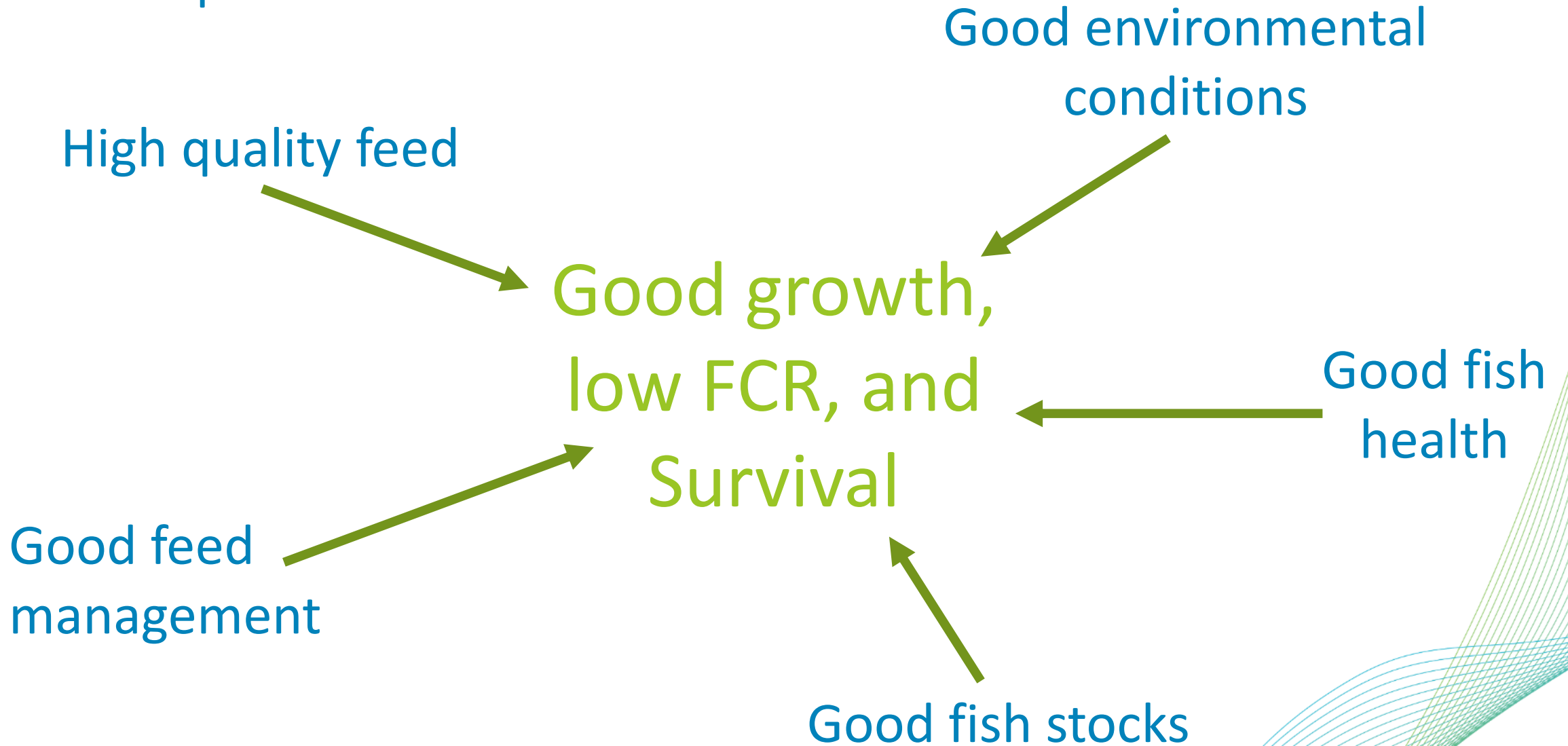


$$P = G + E$$

- Influence on Performance
 1. Genetics
 2. Environmental Factors
 3. Interactions Genetics with Environment
- How to optimise Performance:
 - Genetics for specific Environment (use interactions)
 - But ALWAYS CONTROL ENVIRONMENT

Best practices!

Best practices!



Major Factors Influencing Growth, FCR and Survival

Fish	Environment	Feed	Operation	Feeding
Age	Temperature	Energy content	Fish numbers	Feed type
Sex	Light	Protein/energy balance	Fish biomass	Spread
Maturation	Salinity	Amino acid profile	Density	Intensity
Life stage	Site	Technical quality	Grading	Time of day
Fish weight	Season	Storage	Handling	Feed amount
Disease	Weather		Net fouling/changing	Equipment
Genetics	Current		Biosecurity	Feed management
			Monitor pathogens	

Check out our manuals!

- www.troutlodge.com/tr/kaynaklar
- Also in Turkish



Troutlodge - Key to Success

- Troutlodge: selected for optimum performance under various environments
- Top performance in growth

For your orders or questions:

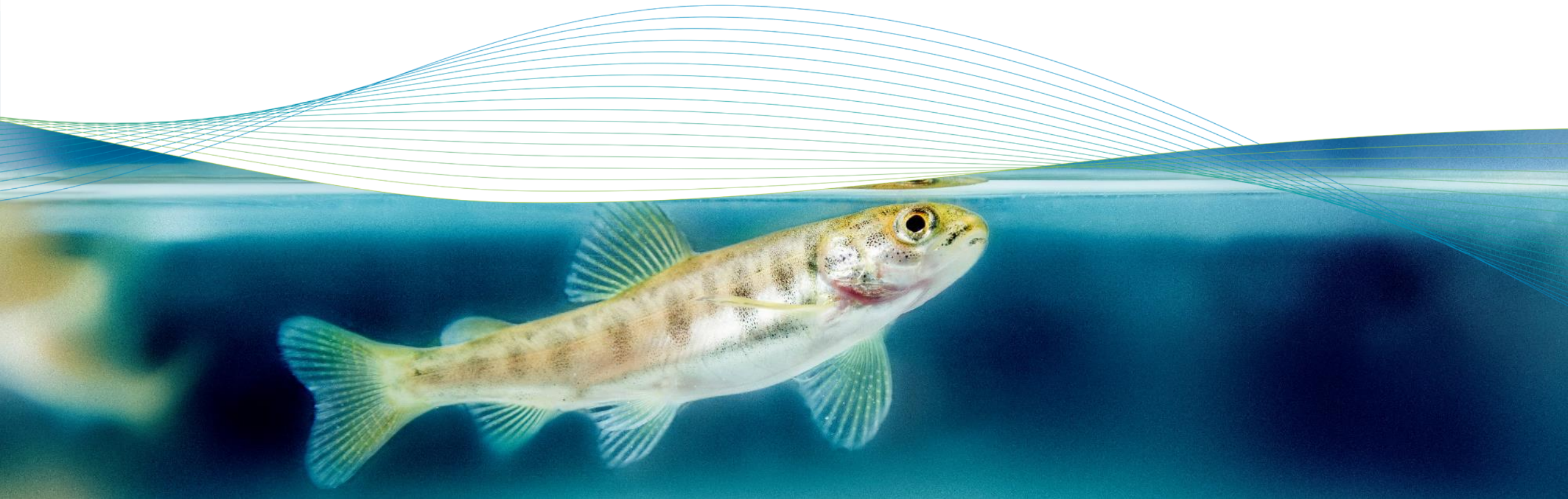
www.troutlodge.com

Or

Tolga Sepetoglu - 0 (532) 453 80 63

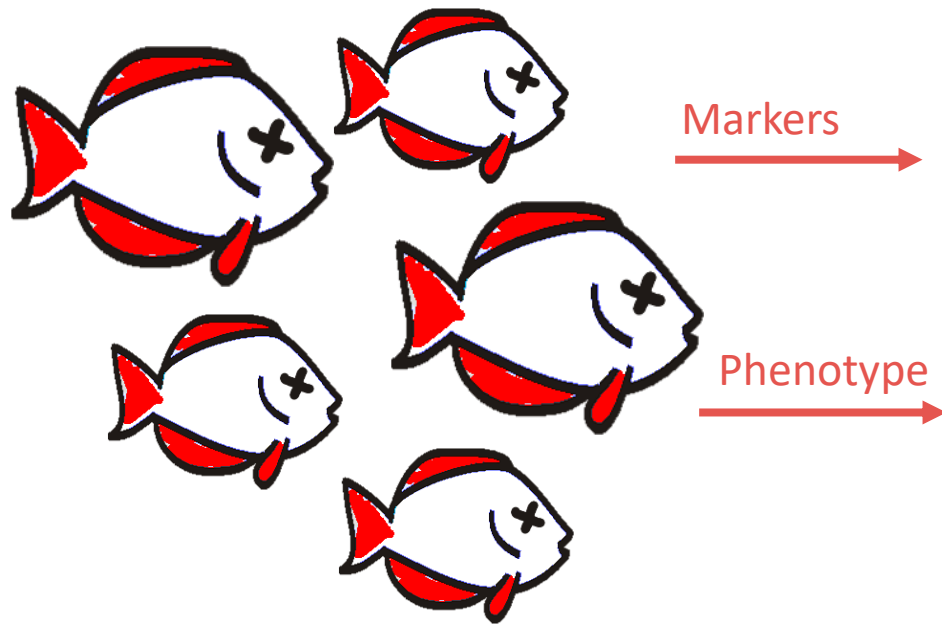
Thank you

Better Breeding Today. Brighter Life Tomorrow.

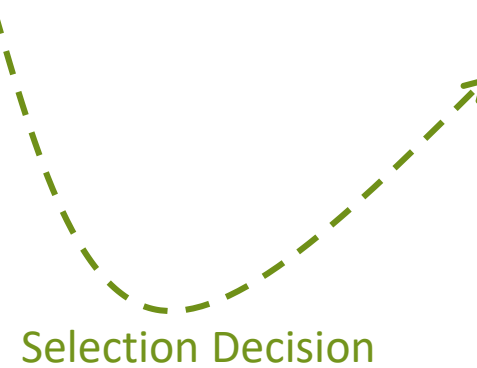
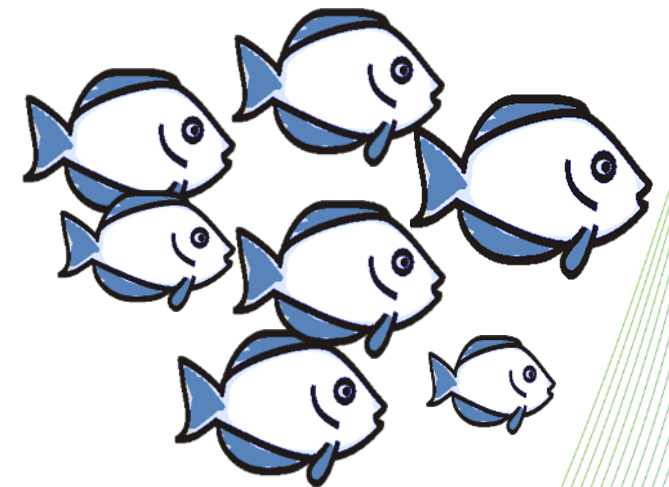


Genomic Selection

Training Population



Selection Candidates



Maturation

- Trends in trout industry toward large harvest size.
 - Long grow out periods
 - Fish mature before harvest
- Opportunities:
 - Photoperiod manipulation – delay spawning in salmon
 - Sterility
 - Triploids
 - Other sterility methods - **Big Troutlodge R&D effort in coming years**

