



Dr. Larry Feinberg
KnipBio

- 🌐 Larry Feinberg, PhD., is an entrepreneurial industrial biotechnologist and the CEO and co-founder of KnipBio.
- 🌐 Feinberg completed his doctoral studies at the University of Massachusetts where he focused on biogeochemistry, physiology and genetics of hyperthermophilic microbes.
- 🌐 He has deep expertise in early-stage technology ventures and bio-product discovery.
- 🌐 At Mascoma Corporation, he led the Organism Discovery group and New Business Opportunities team.



KnipBi

Enabling healthier, responsible aquafeeds



Food Insecurity – The Challenge Before Us

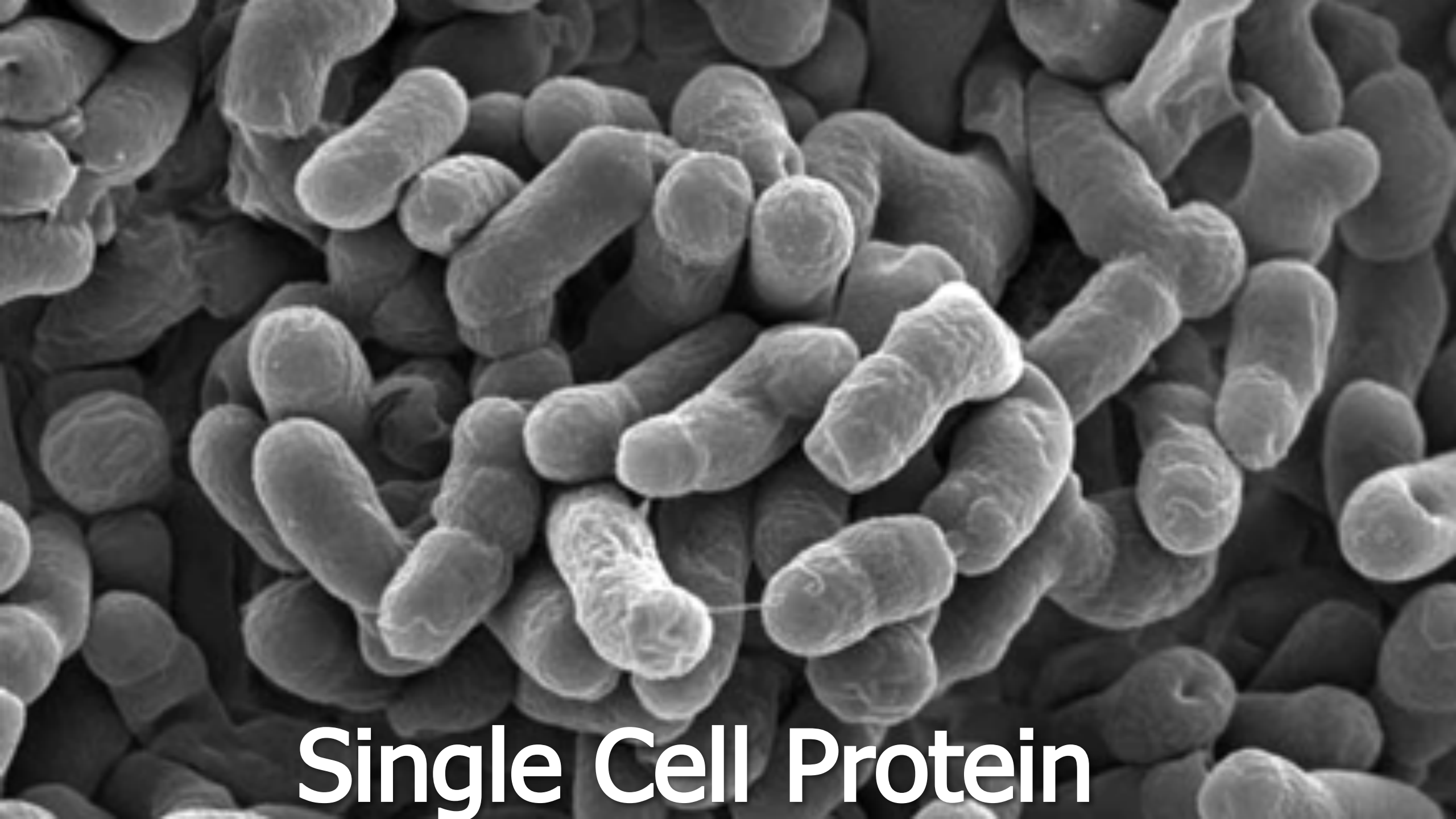


12,000 years

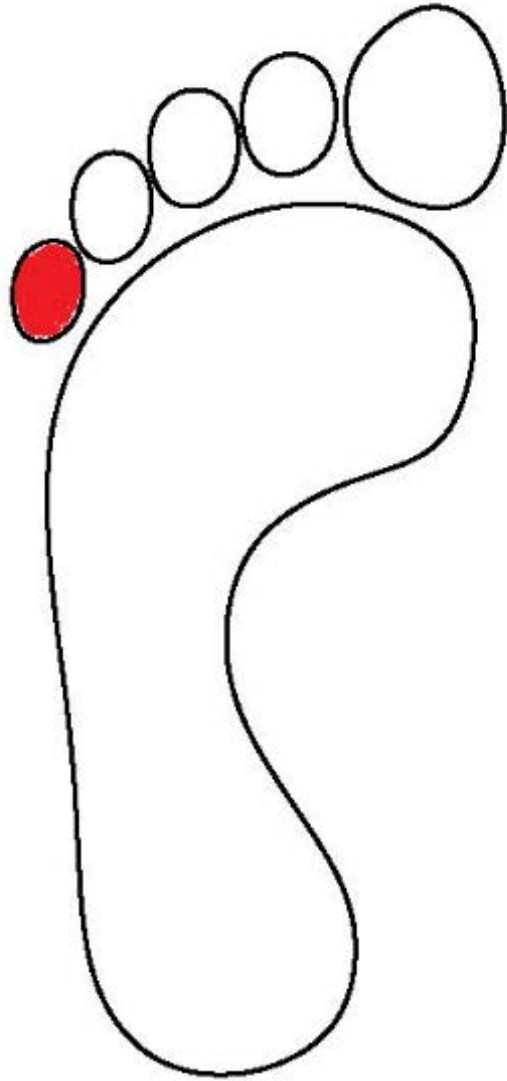
Agriculture

50 years

Aquaculture



Single Cell Protein

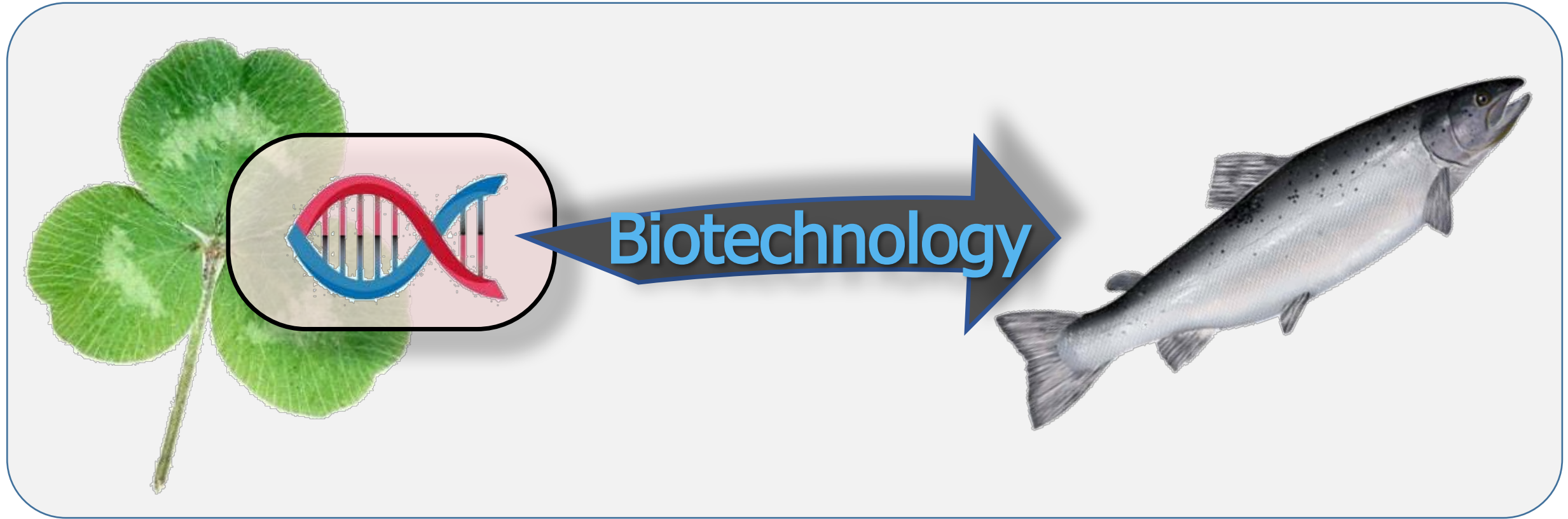


**SUSTAINABLE
DEVELOPMENT GOALS**
17 GOALS TO TRANSFORM OUR WORLD

CONSERVATION X LABS

Sustainable Footprint

Immuno-Nutrition Strategy

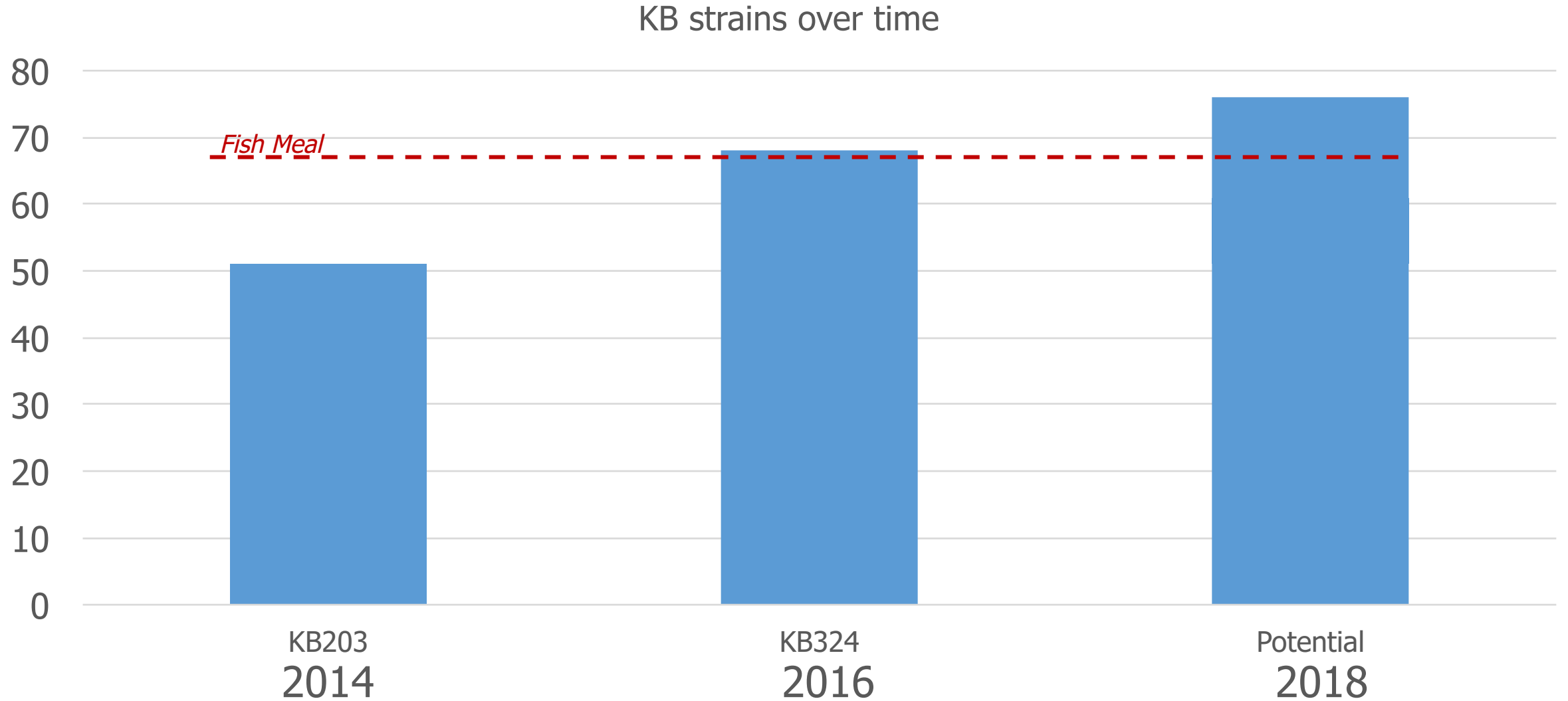


Functional Ingredients
Protein

“Brewing” Protein

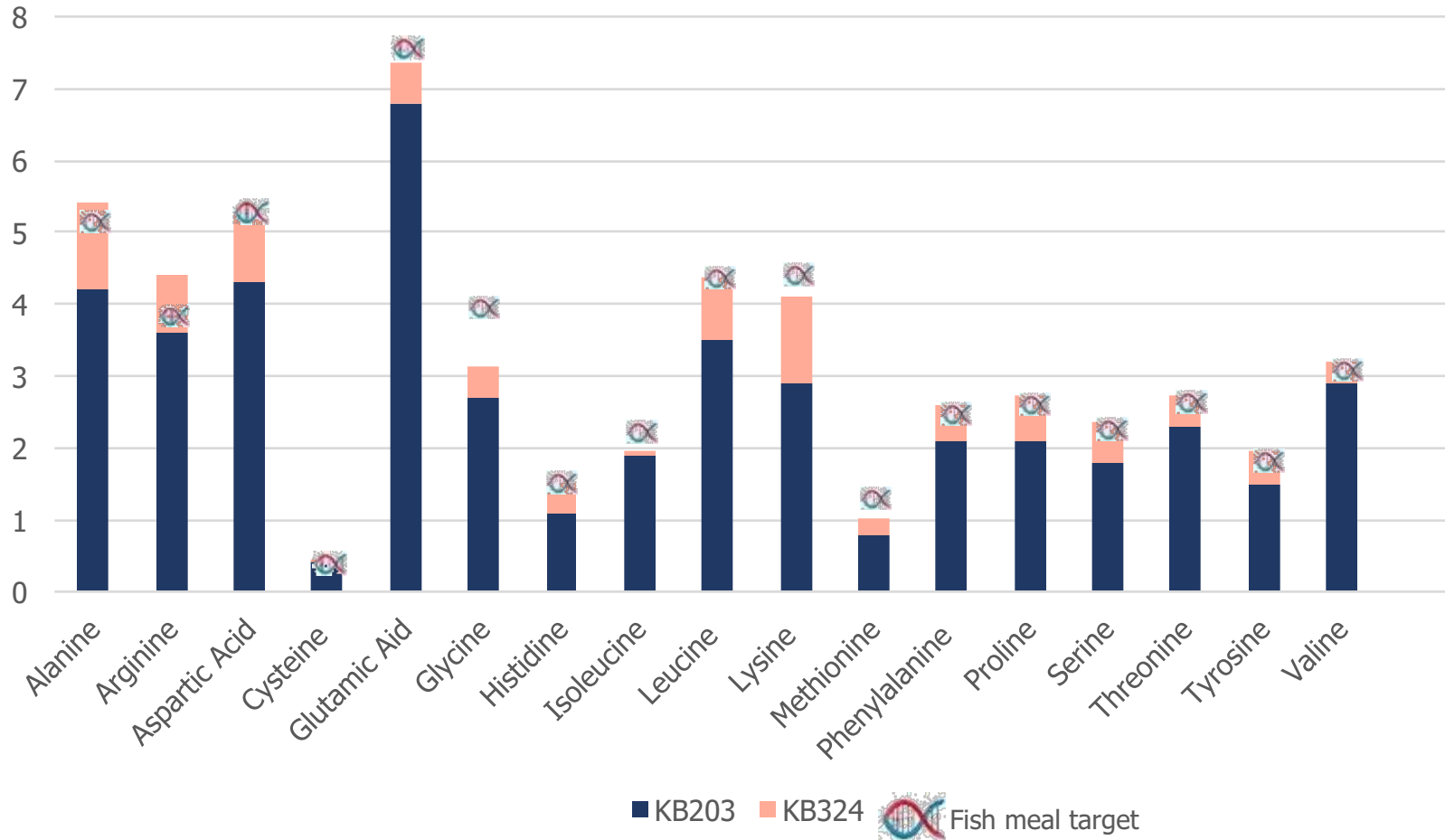


Protein Content

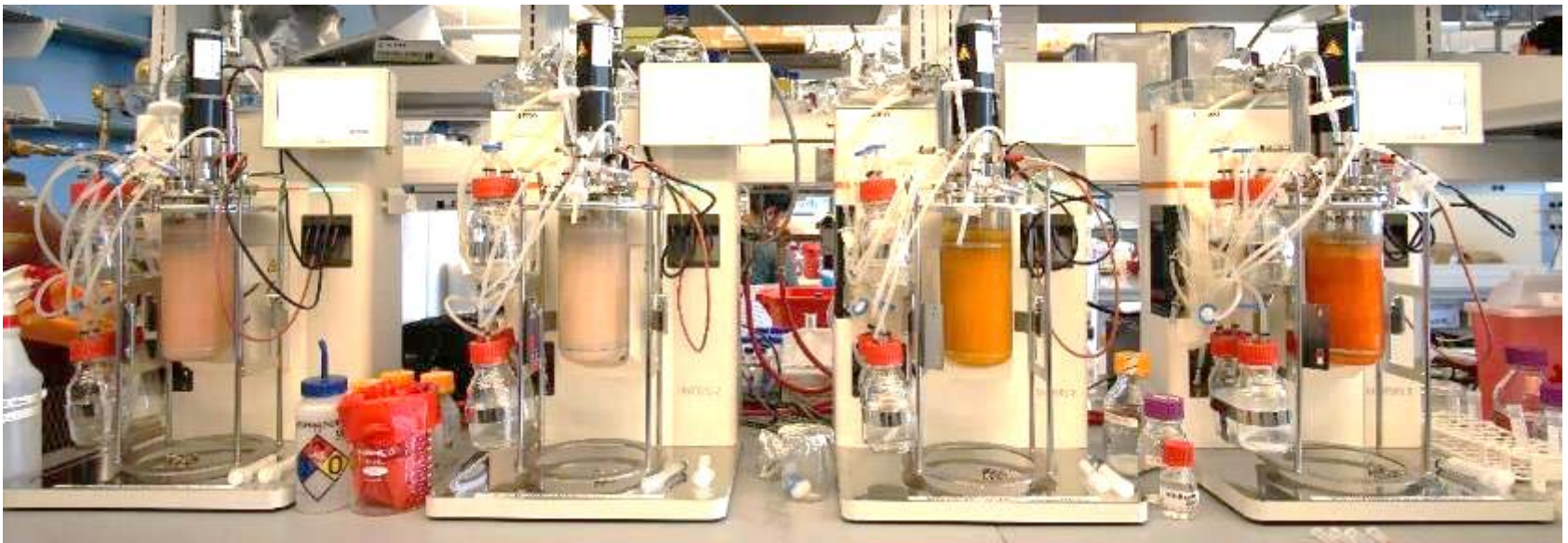
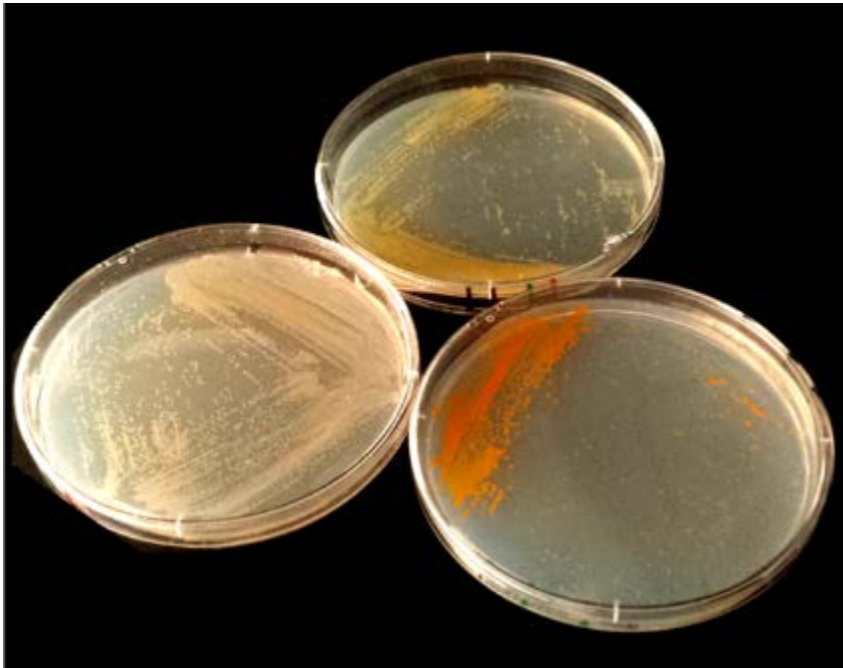


Amino Acid Profile

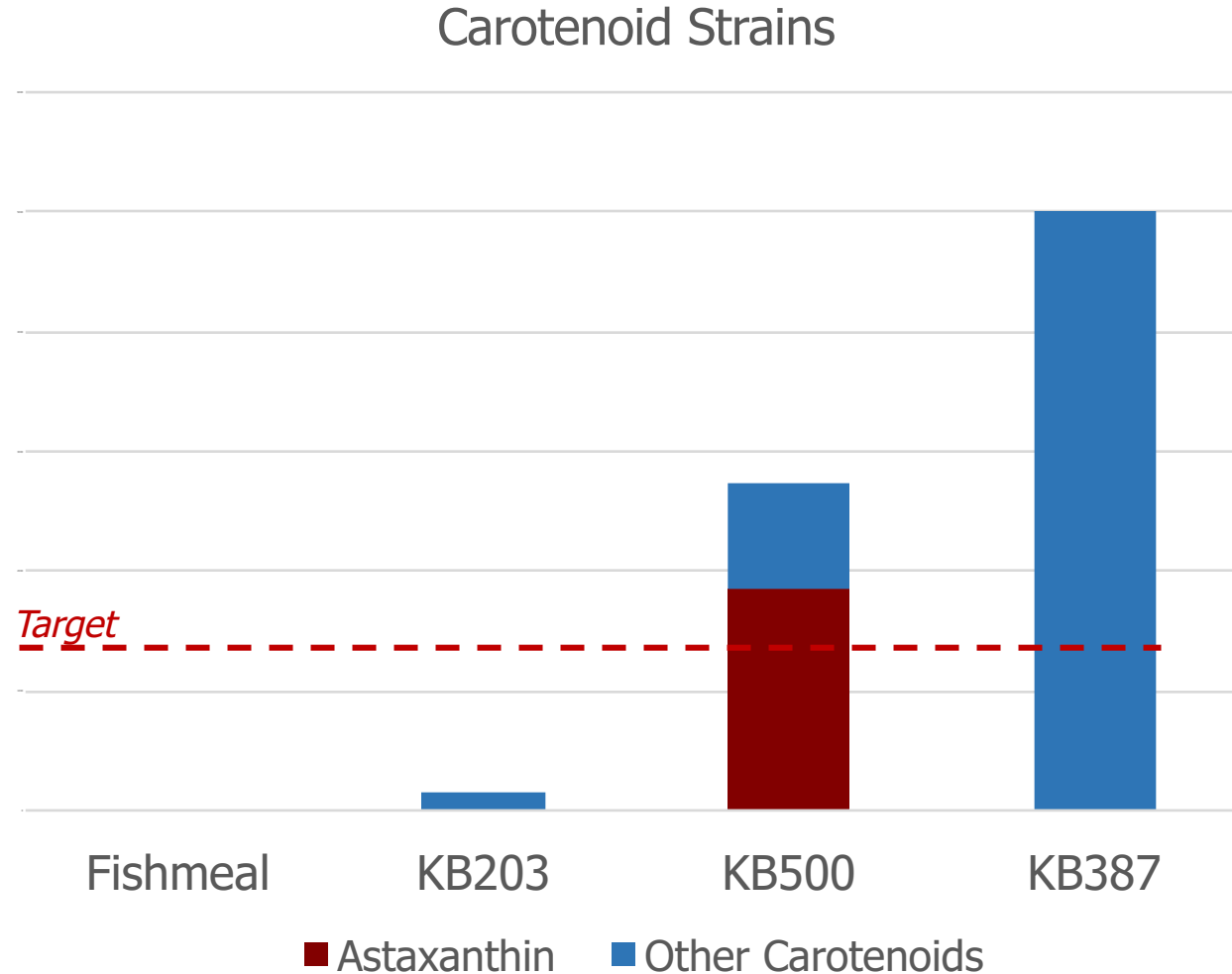
AA profile resembles FM through strain improvement



High-Value Carotenoids

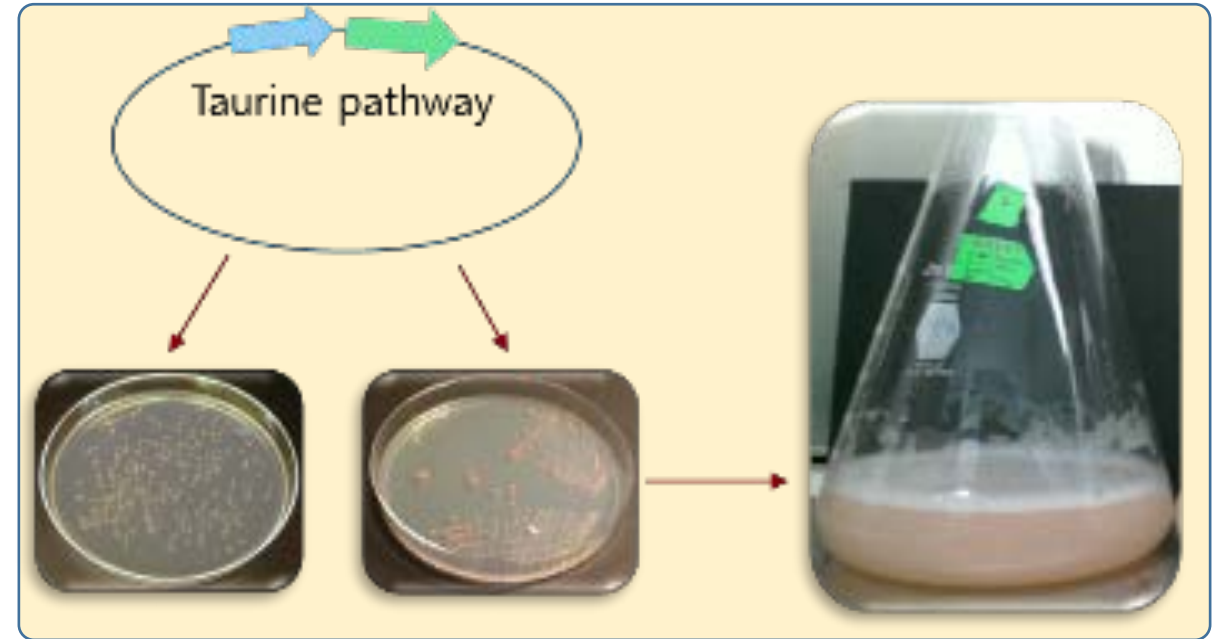
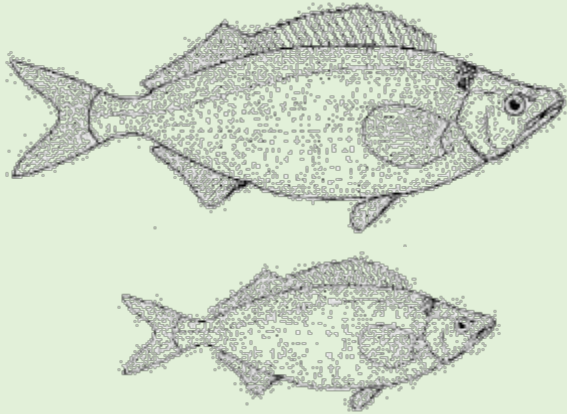


Advanced Carotenoid Technology



Engineered KBM Provides Lost Nutrients

Taurine deficiency



Demonstrated - Yellowtail



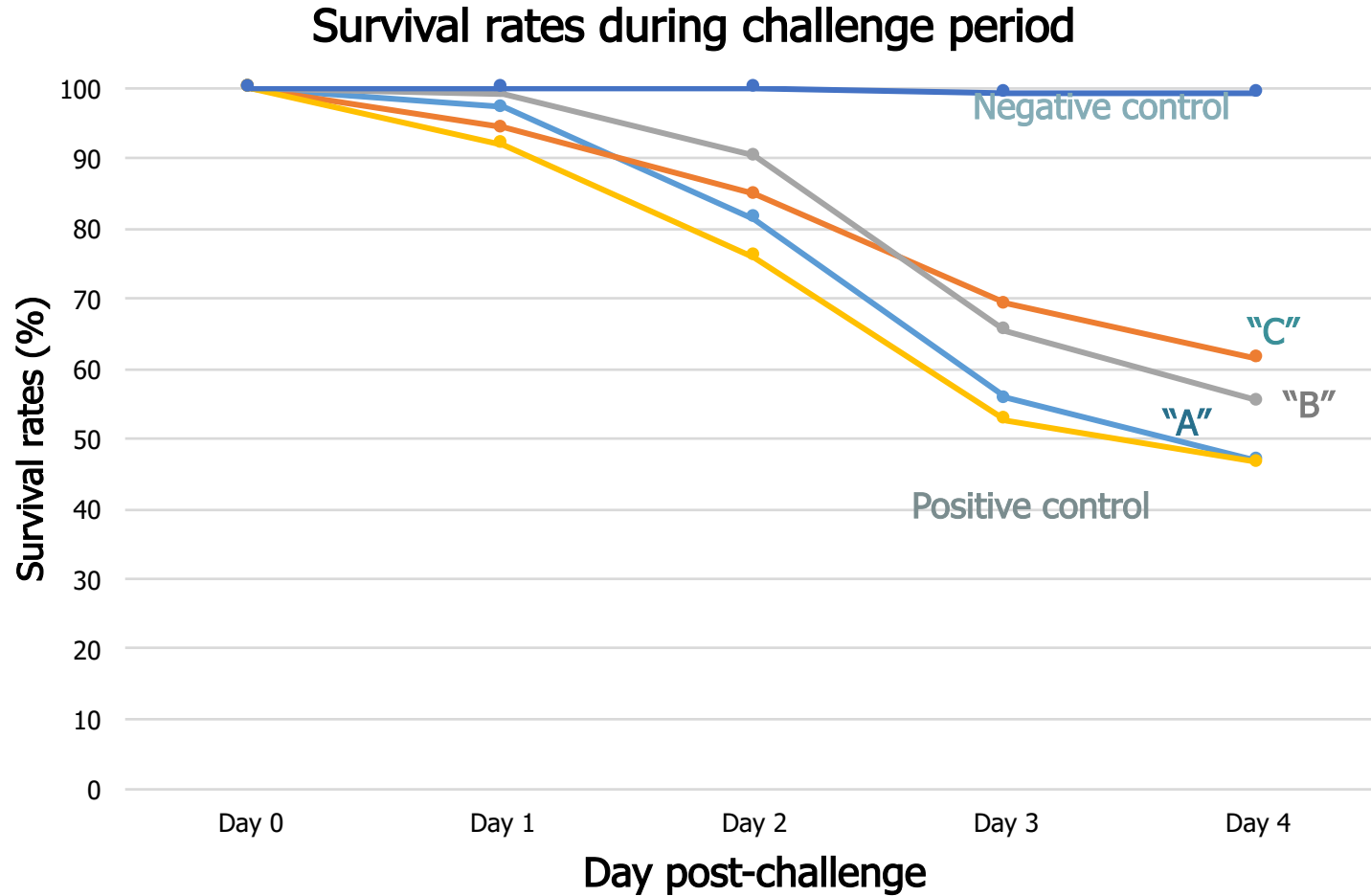
SERIOLA	Control	5% KBM
Growth (g)	709.79 ± 146.05	739.43 ± 110.42
Survival	100	100
FCR	1.76	1.66

Demonstrated - Trout



	Control	5% KBM	10% KBM
Protein efficiency ratio (PER)	2.42±0.04	2.49±0.02	2.44±0.01
Feed conversion ratio (FCR)	0.85±0.01	0.82±0.01	0.84±0.00
Survival (%)	96.2±0.9 ^b	98.9±0.9 ^{ab}	100 ^a

Shrimp: >30-40% Improved Survival



Scalability



Bench/Lab
1L
(2014-15)



Pilot
1500L
(2015 -16)



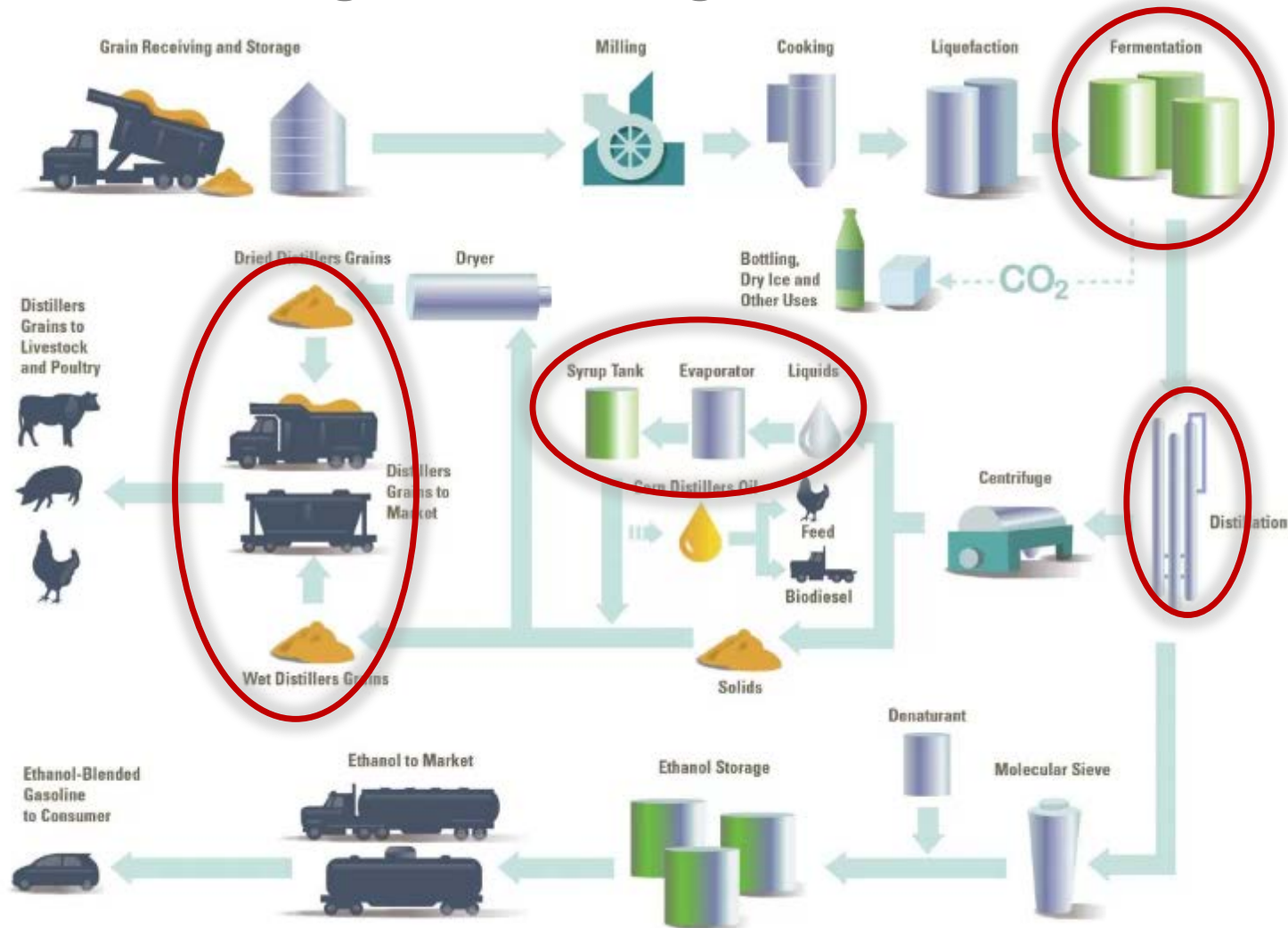
Pre-Commercial/Commercial
Up to 20,000 = 50,000L⁺
(2017-18⁺)

Manufacturing Strategy



Commercial Manufacturing

Co-locating with existing biorefineries



From Feed to Fork



> 45 panelists



>70 panelists

Product Summary

	KBM203	KBM324	KBM500
Protein			
Prebiotic / Survival			
Carotenoids			
Pigments			

What's Ahead



Product Development:

Continuation of protein-plus platform



Manufacture

Scale-up:

10X (2017) → 25x (2018) → 100X (2019)



Customer
service

Commercialization:

Sales through partnerships

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