

Today's Webinar Will Begin Shortly:

Top Technology Innovations Driving Growth in the Food and Beverage Industry

QUESTIONS?

Use the questions box on your screen

AUDIO ISSUES?

Use the global dial-in number in your confirmation email



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Agenda

- 1 | **A river of choices**
- 2 | Innovations to make your offering stand out in the flow
- 3 | Momentum from B2B to B2C
- 4 | Conclusion



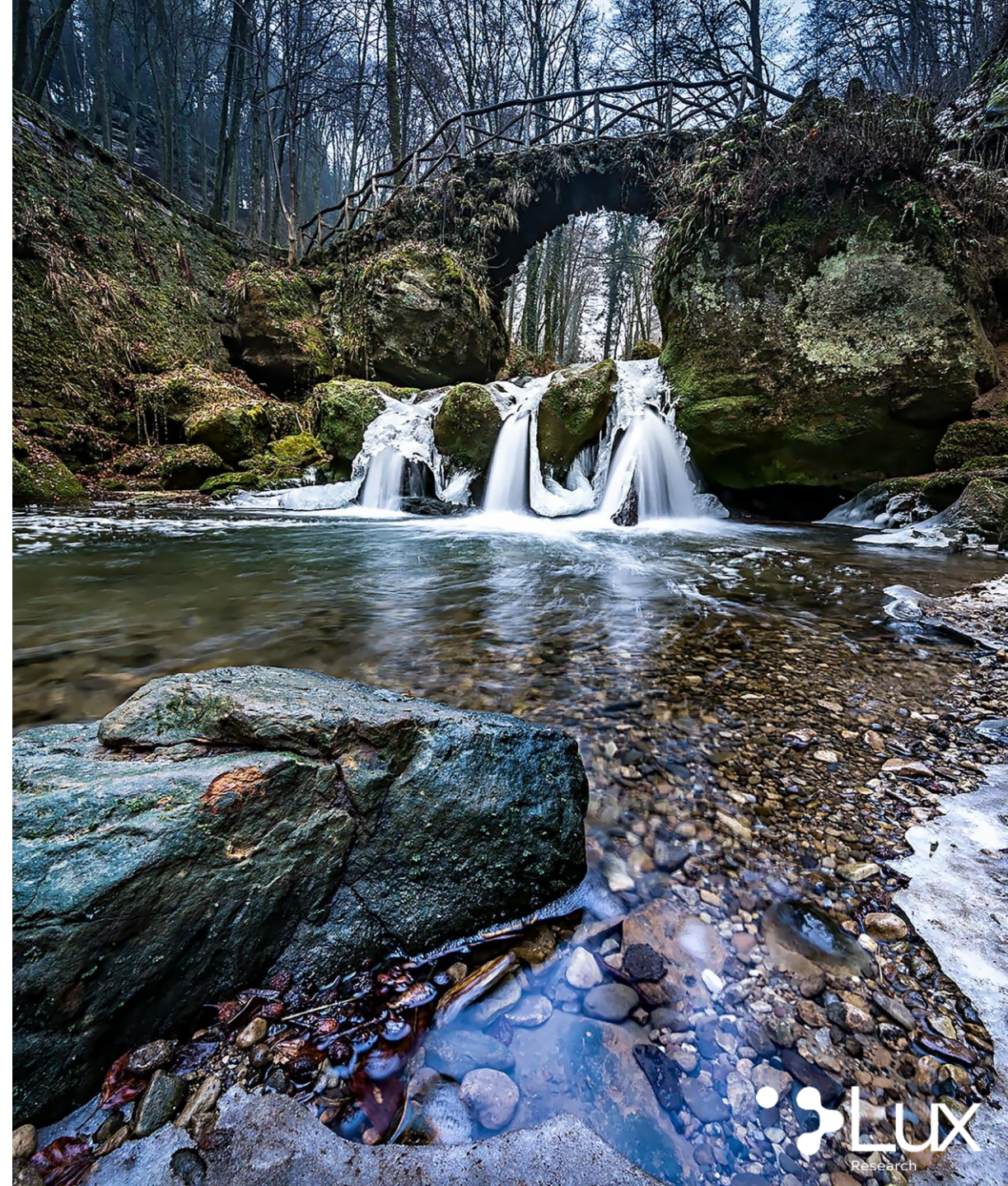
A river of choice



Within that river of choice there is a flow (industry) that carries resources (products) to consumers.

Success in a river of choice

The food and beverage industry brings an ever-increasing diversity of products and ingredients to the market from an increasing diversity of sources. Consumers continuously select from the myriad solutions with an increasingly discerning eye for quality, outcomes, and cost among other attributes.



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LUX TAKE

Capturing opportunities through innovation among your competitors and the flood of well funded purpose built and often more agile developers is exceptionally challenging and requires implementation of a range of strategies.



Flooding choice aligns with key megatrends



Changing consumer preferences



Food security



Urbanization

The case of alternative proteins














1 PLANT PROTEINS

 BEYOND MEAT	 IMPOSSIBLE™	 MycoTechnology	 DAIYA FOODS	 Burcon
 PARABEL	 kite hill	 ecovative	 NUTRENA	 Merit
 alpha FOODS	 terviva™	 shiru	 plantible	 Improved Nature™
 prime roots	 JUST	 planted.		

2 INSECT PROTEIN

 Enterra	 ENVIROFLIGHT®	 Grubblly Farms	 Beta Hatch	 TENTATIVE
 ENTOMO	 ASPIRE	 CHAPUL	 HermetiaPro	 OBERLAND agriscience
 All Things Bugs	 Insect	 EAT BUGS	 AgriProtein	 innova
 FLYING SPARK	 HARCOL	 PROTIX	 Insect	

3 FERMENTATION-DERIVED PROTEINS

 WHITE DOG LABS	 Fynd	 AIR PROTEIN™	 SOLAR FOODS	 ENOUGH
 Mushlabs	 ML	 FUNGI	 THE PROTEIN BREWERY	 MYCORENA
 Quorn	 prime roots	 GELTOR	 Perfect Day™	 remilk.
 LEGENDARY FOODS	 change	 Better Dairy	 New Culture	 Imagindairy

4 CELL-BASED MEAT

 WILD TYPE	 Oryza Bio	 JUST	 NEW AGE MEATS	 VL
 Bicycle Foods	 mosa meat	 MEMPHIS MEATS	 MIRAI FOODS	 multus media
 Gelatex	 MATRIX	 ecovative	 Meatable	 SuperMeat
 ALEPH FARMS	 FUTURE MEAT	 AORF	 Bio.Tech. Foods.	 Hs
 FUTURE FIELDS	 BlueNalu	 Vital		

5 ALGAE

 bioprocessalgae	 MBIO	 veramaris	 GLOBAL ALGAE INNOVATIONS	 cellana
 QUALITAS HEALTH	 ZIVO SCIENCE	 TRITON ALGAE INNOVATIONS	 ALGENOL	 ALGAMA
 Corbion	 pondtech	 Alga		

Plant protein immersion

LUX Research PLANT PROTEINS TECHNOLOGY LANDSCAPE

1 CROP PRODUCTION

From top to bottom: corporates, small-medium enterprises, research institutes

2 INGREDIENTS

From top to bottom: corporates, small-medium enterprises, research institutes

3 FINISHED PRODUCTS

From top to bottom: corporates, small-medium enterprises, research institute

Note: The market map above is an alphabetical representation of the technology landscape by technology and organization type. Organizations were selected by, but not exclusively, patent activity, venture capital funding, and academic publications. Inclusion in the above market map is only an assessment of the activity by each organization and not a measurement of technology quality or leadership position.

Emerging choice
means
differentiation is
critical

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A scenic photograph of a waterfall cascading over mossy rocks in a lush forest. Three black circles with white borders are overlaid on the image, each containing white text. The circles are arranged in a triangular pattern: one on the left, one at the top center, and one on the right.

Alternatives

Functional
ingredients

Channels

Focus on three technology areas to drive growth in the F&B sector

ALTERNATIVES

Disruptive alternative ingredients align with consumer demands and sustainability areas

Existing

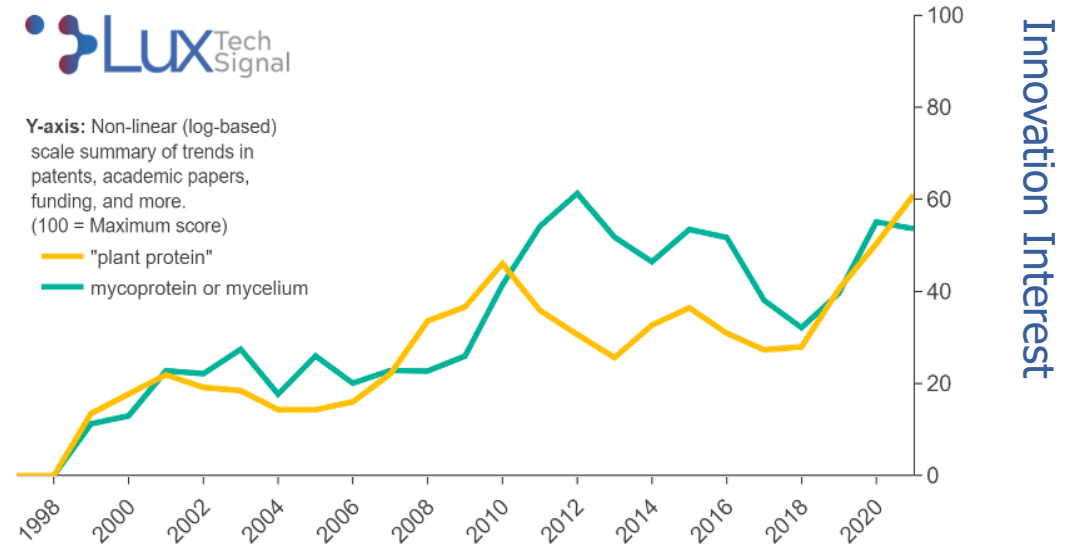
Alternative sources

Alternative production



Y-axis: Non-linear (log-based) scale summary of trends in patents, academic papers, funding, and more. (100 = Maximum score)

— "plant protein"
— mycoprotein or mycelium



DATA HIGHLIGHTS

\$500 million

The total amount of investment into mycoproteins in 2021, with 95% of that funding coming from venture



Functional ingredients

Ingredients that confer health impacts

Metabolic
impact

Immune
system
impact

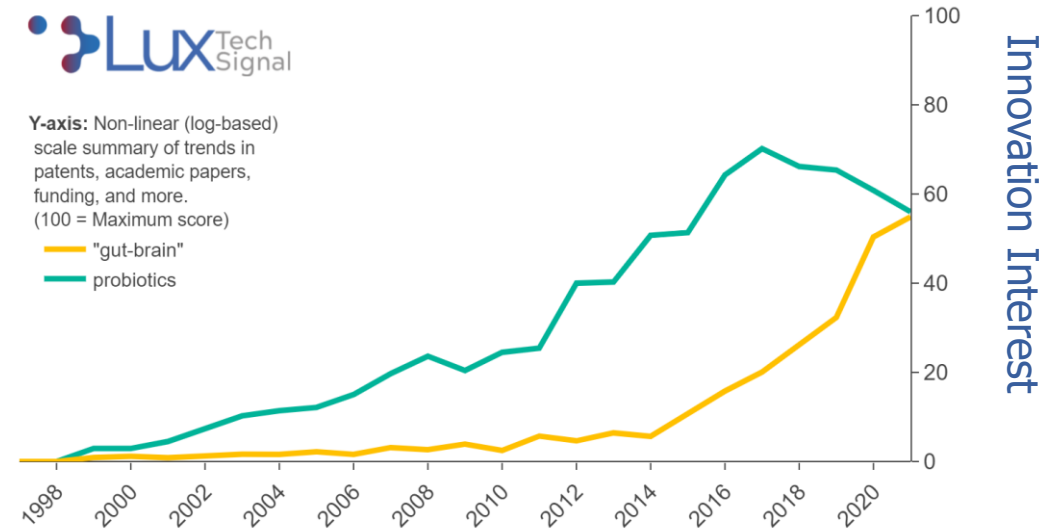
Cognitive
impact

Microbiome
impact



Y-axis: Non-linear (log-based)
scale summary of trends in
patents, academic papers,
funding, and more.
(100 = Maximum score)

— "gut-brain"
— probiotics



DATA HIGHLIGHTS

\$1.5 billion

The total amount of investment into probiotics from 2018-2021, mainly through acquisitions



CHANNELS

Personalization and digital platforms enable improved consumer reach

Personalization

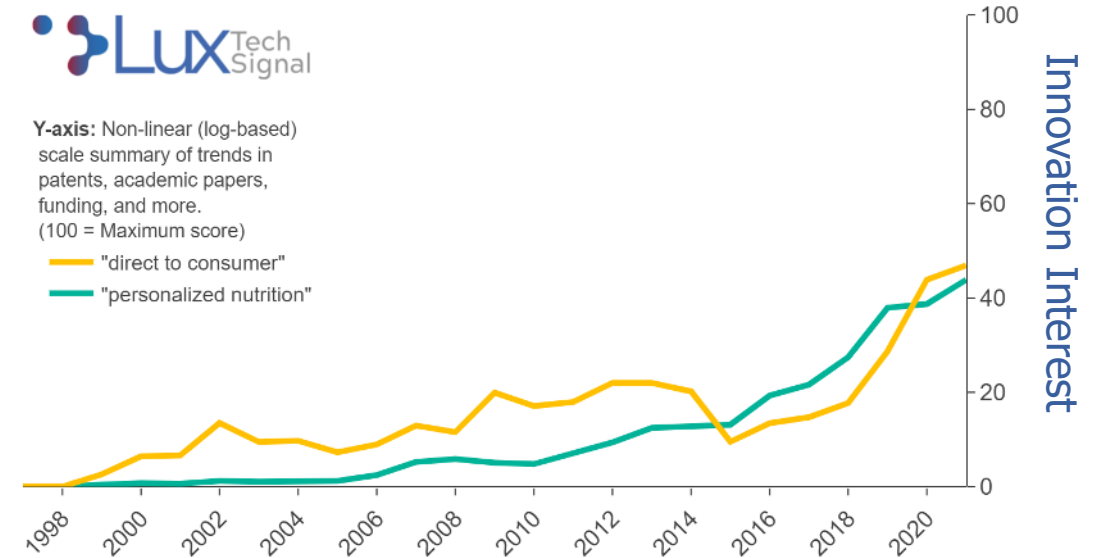
Digital sales platform

D2C sales



Y-axis: Non-linear (log-based) scale summary of trends in patents, academic papers, funding, and more. (100 = Maximum score)

— "direct to consumer"
— "personalized nutrition"



DATA HIGHLIGHTS

\$100 million

DSM invested \$100 million into launch of D2C personalized nutrition company Hologram Sciences in 2021



knowde



persona™
A Nestlé Health Science Company



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CASE STUDY

Unilever places its bets on diverse protein sources

WHAT

Unilever partnered with B2B mycoprotein provider "ENOUGH." This announcement follows its acquisition in the plant-based meat analog space and partnership with microalgae ingredient developer Algenuity

WHO



Alternatives

• LUX TAKE

The future of proteins will be a diverse mix; capitalize on near-term opportunities, but don't miss out on promising long-term options

CASE STUDY

Danone partners with Brightseed for novel functional ingredient

WHAT

Danone will leverage Brightseed's AI platform to identify functional ingredients from key plant sources, starting with soy. This will enable Danone to promote new health advantages in its plant-based dairy portfolio

WHO



• LUX TAKE

Engage with developers that have the ability to expedite ingredient discovery with proven health benefits.



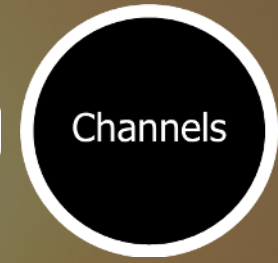
CASE STUDY

Lifenome's precision nutrition solution holds promise

WHAT

Offers personalized wellness based on AI recommendations informed by genomic data, through a precision nutrition pregnancy platform called 9Moons; recently won PepsiCo's fifth Greenhouse Accelerator program, receiving a \$100,000 grant.

WHO



• ➤ LUX TAKE

CPGs should explore opportunities to engage with startups which collect and analyze multiple consumer data streams, offering sales channels for personalization.

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Key Takeaways

1

Diversification drives food system competition

2

Expect a variety of solutions that will require timing to succeed

3

Interplay among innovation strategies is critical

Thank you

A link to the webinar recording will be emailed within 24-48 hours

UPCOMING WEBINARS

- **September 21st:** [The Hospital of the Future](#)
- **October 26th:** [An Innovator's Guide to Greenwashing](#)
- **November 23rd:** [Key Takeaways from COP26](#)
- **December 7th:** [The Lux Foresight Report: Implications and Innovations in a Post-COVID World](#)

UPCOMING EVENTS

- **October 5th & 6th or October 7th & 8th:** [Lux Executive Summit 2021](#)

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