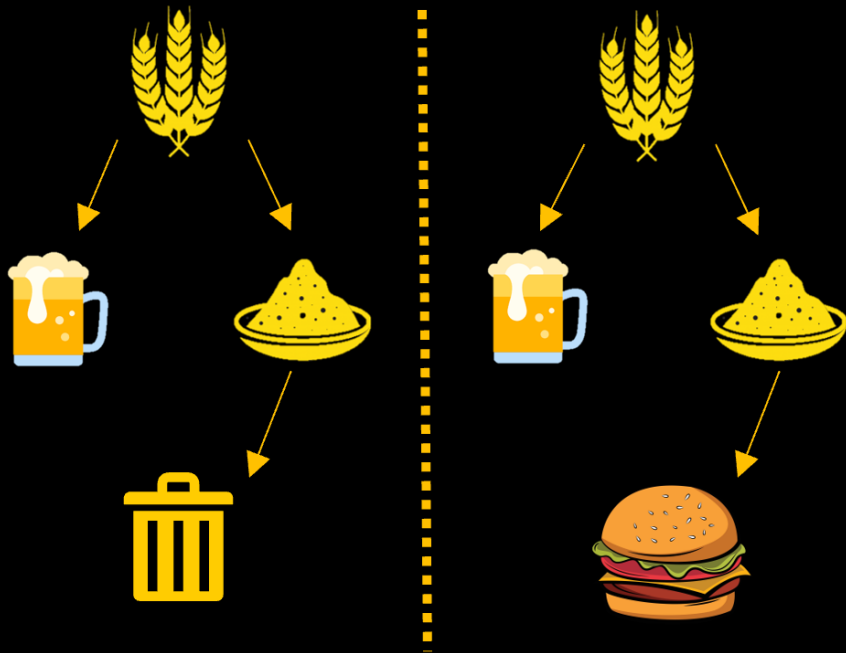


SPOT THE DIFFERENCE



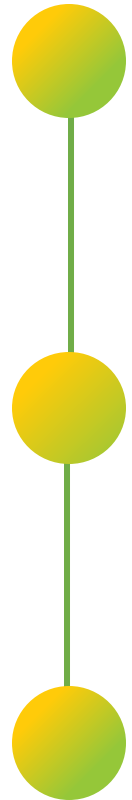
Upcycled Plan(e)t Based Proteins

by
Circular Food Solutions



CIRCULAR FOOD SOLUTIONS

Agenda

- 
- Upcycling of Food Side Streams
 - Producing Meat Alternatives from Brewer Spent Grain
 - Our Solution and Offering



We provide upcycling solutions for food side streams.



Our Mission

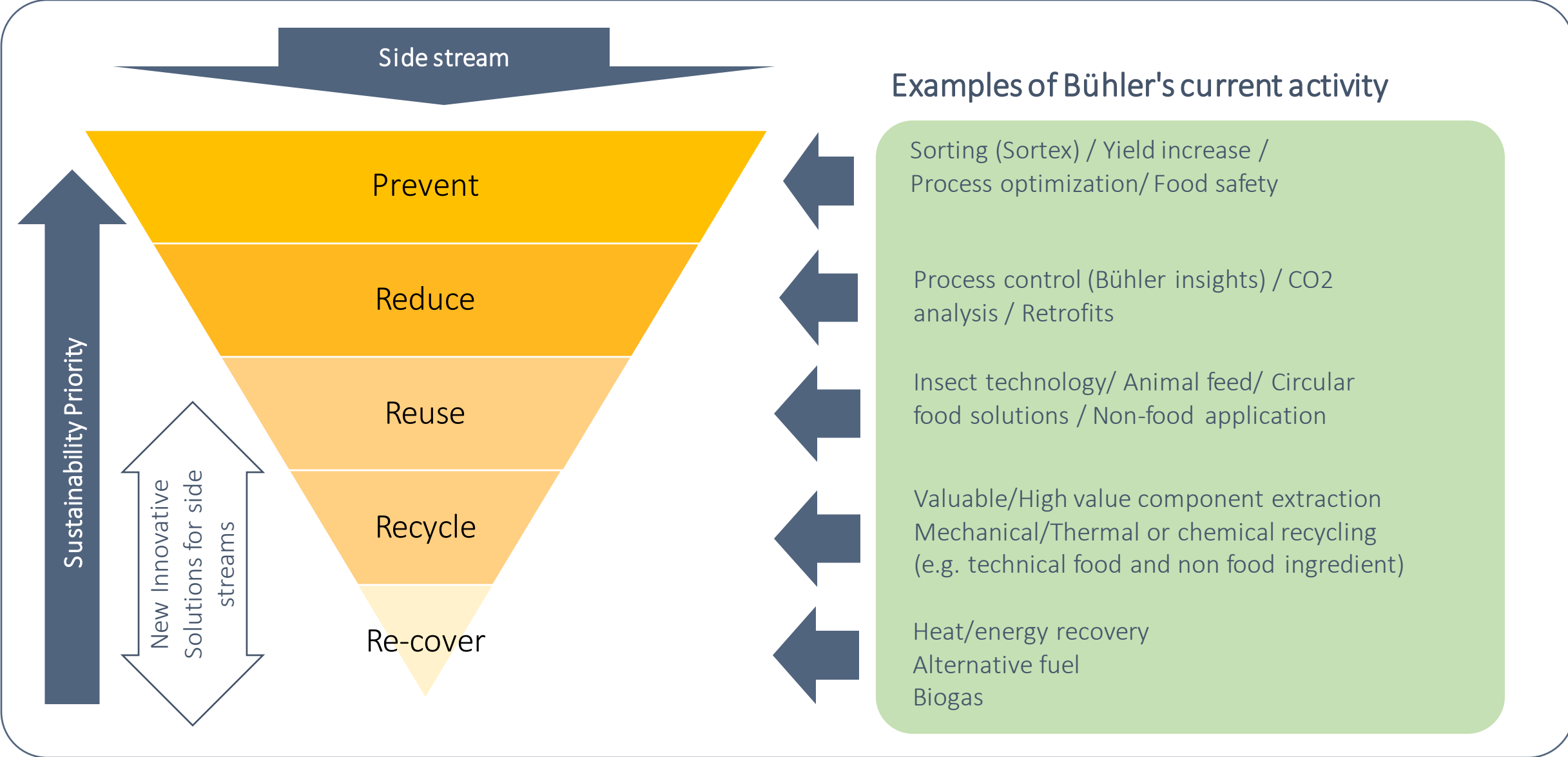
We enable the production of healthy & truly sustainable food products by reducing food waste & using upcycling as a technology..



Side Streams and Volumes - Globally

	Wheat & Rye	Rice	Soy	Corn	Barley	Rapeseed & Sunflower	Oat	Cocoa & Coffee
Types of By-Product	Husks, Bran	Straws, Husk, Bran, defatted rice bran, Germ	Husks, Okara, Soymeal	Corn stover, corncob, corn gem, condensed distillers soluble cornmeal	Spent & Grain Hopes Rootlets	Press cakes, meal	Hulls/ Husks, Bran Press cake	Pods, parchment husks, chaff Silver skin, coffee ground
Volume	750 MT / y	140 MT / y	300 MT / y	700 MT / y	500 MT / y	100 MT / y	20 MT/ y	20 MT / y
Valuable compounds	Lignin, Cellulose, Hemicellulose, Ash/Minerals, Protein, Lipids/oil, Phenolics, Starch, Antioxidants, Oligosaccharide (lactic acid extraction/succinic acid), Micro components							

Bühler's Side Stream Pyramid



Circular Food Solutions started in 2020 with Brewer Spent Flour



Healthy & great tasting products made with upcycled BSG



We managed to overcome the **Upcycling** hurdles.

Valorisation of food side streams that are not used for human food today.



Development of efficient upcycling technology



Use of upcycled ingredients as a source of proteins and fibers for meat alternatives



We make side-streams a gain, not a pain.

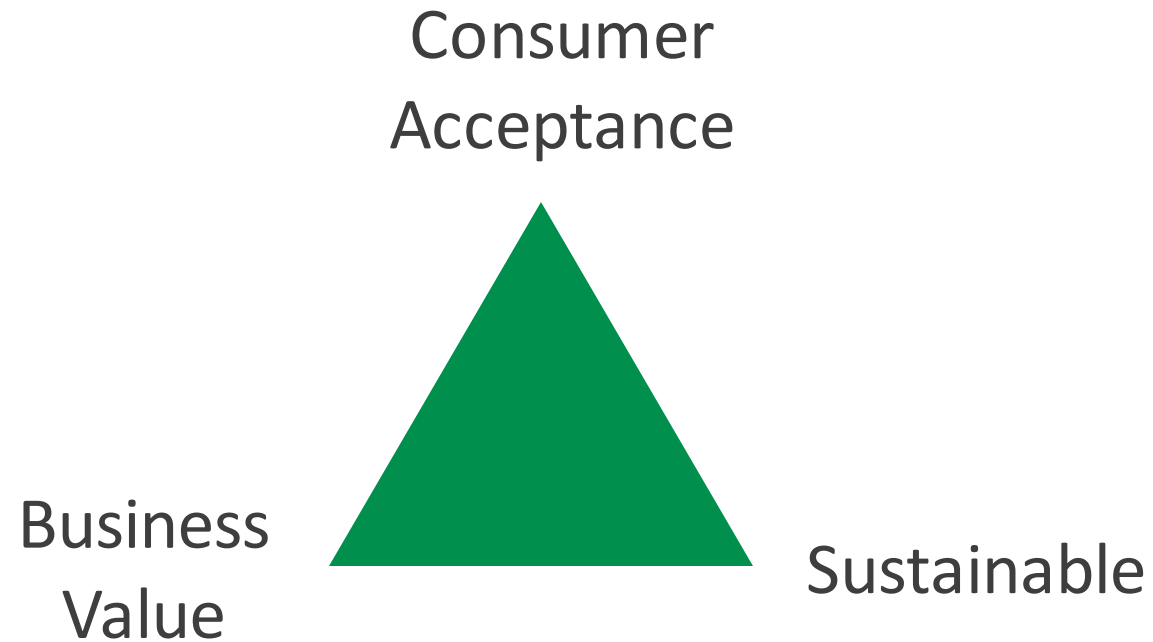


More than 1 bn tons of Side Streams generated per year





Upcycling of food side streams must create value



Producing Meat Alternatives from Brewer Spent Grain



We *upcycle* food side-streams into meat alternatives

Recover proteins from waste and re-use resources

Reduce the CO₂ Footprint and land use

Contribute to Circular Economy



Fresh Brewer's Spent Grain (BSG)



Plant-based meat. Why?



Feed 10 billion people
by 2050 safely & efficiently



Shift from animal to healthier
plant-based proteins

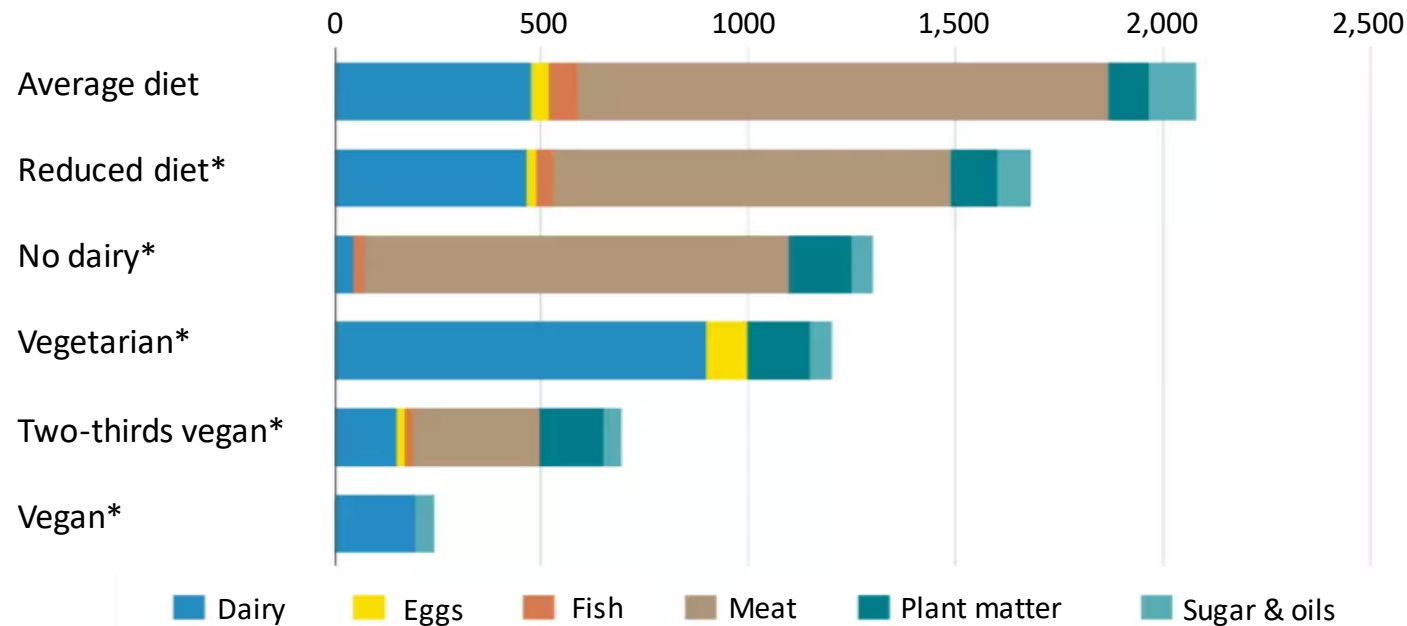


Reduce the CO₂ Footprint,
land use & use of antibiotics



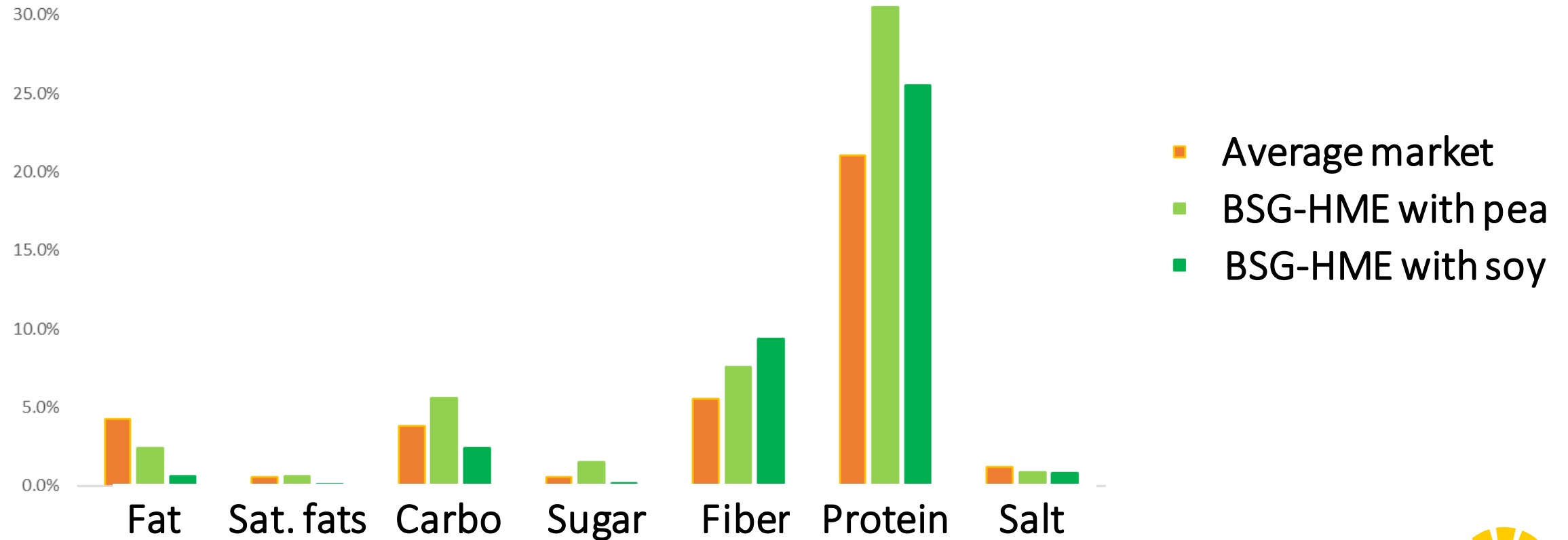
Alternative proteins are essential for a sustainable food system

Greenhouse gas footprint of different diet types
kg of CO₂ per person per year, United States



*Simulated diets to reach 2,300 calories per day

BSG-HME meat alternatives including upcycled BSG have a better **Nutrition Profile** compared to current products on the market



And there are many reasons why consumers are interested in **plant-based**.



Health Ambitions



Climate Crisis



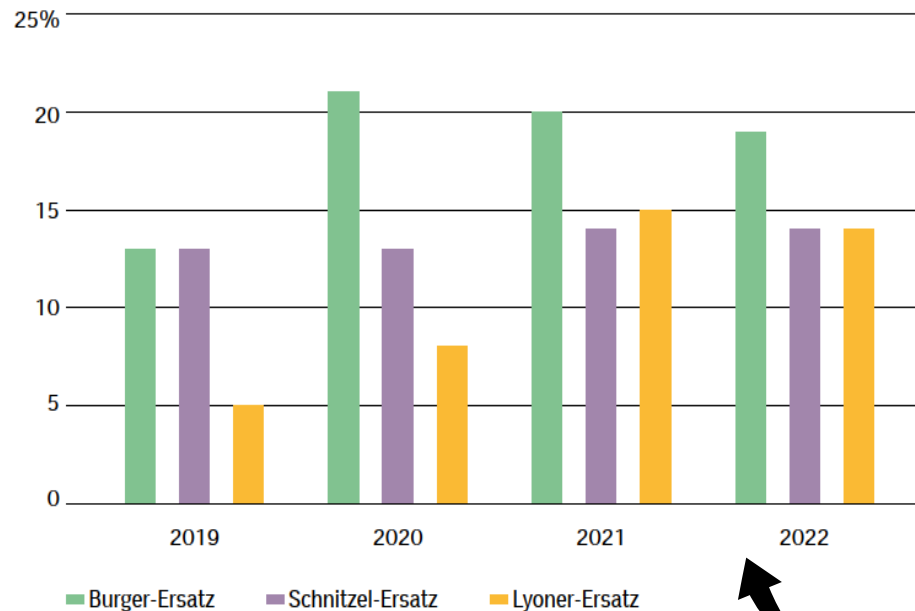
Animal Welfare



Price

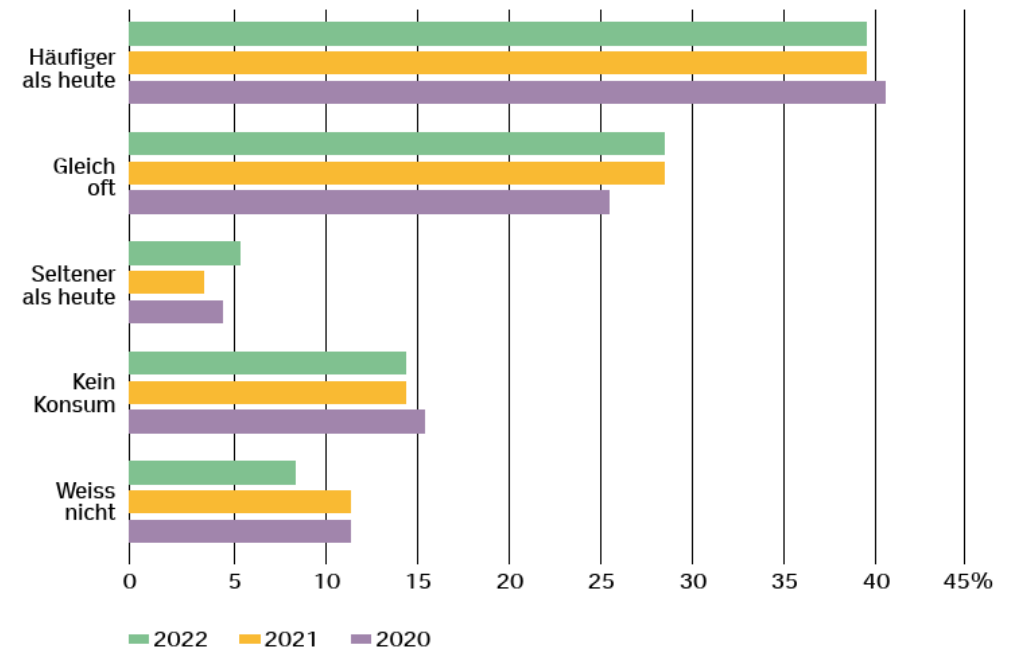
The plant-based revolution is **unstoppable**.

Share of vegan substitute products in total sales of the respective category – example Switzerland



20% of the total burger sales at Coop was from vegan substitutes.

Expected frequency of consumption in five years



40% of consumers still expect to increase their consumption of vegan products in the future.

Pricing Parity in Switzerland already achieved – July 2023



33.-/kg



32.22/kg





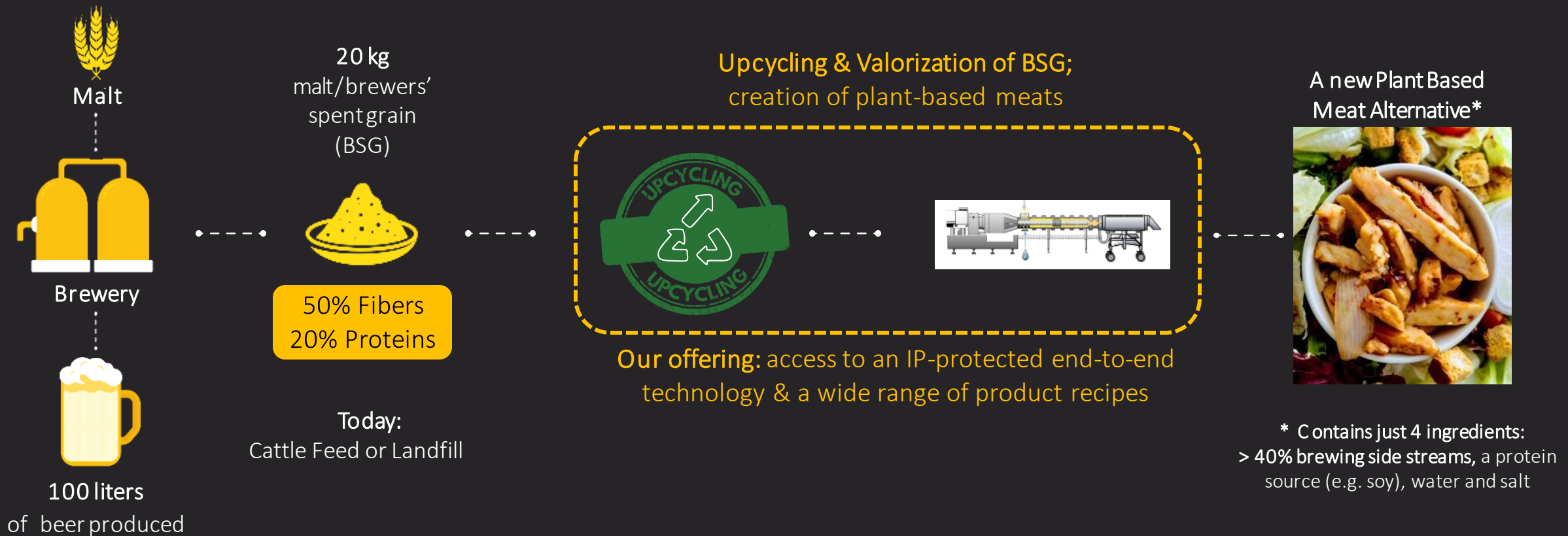
Our Solution and Offering



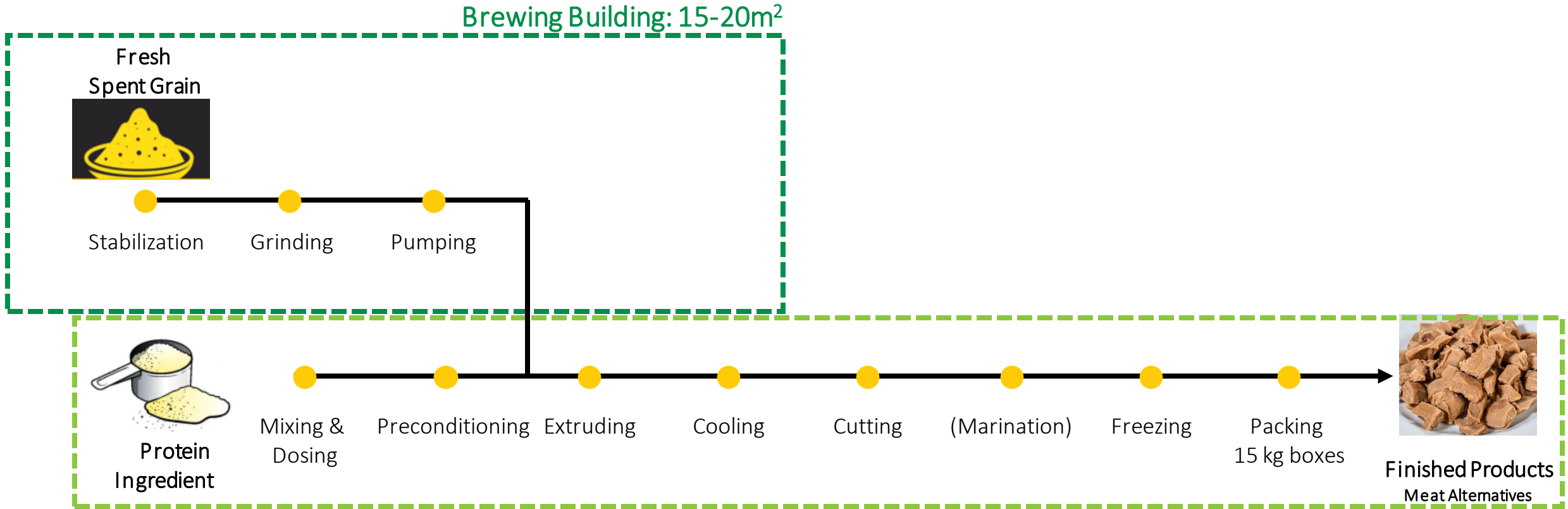
Our solution: technology to upcycle brewer's spent grain and create unique meat alternatives

UPCYCLING PROCESS

PATENT APPLIED



Production & Distribution Set-Up



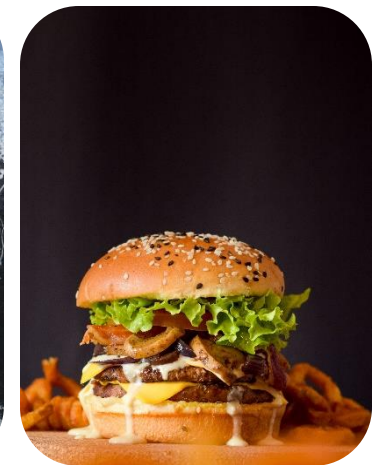
Extrusion Building: 350 – 400 m² (3 floors)

BSG plant-based meat can be easily transformed into a variety of local **finished products**.



Semi-finished product

From Semi-finished product to final consumer product



Healthy. Tasty. Go!

Why are BSG plant-based meats so special?



Great
taste & texture



A new, alternative fiber
& protein source



Healthy because
naturally rich in fibers



Regionally sourced and
globally scalable



Using **Upcycling** as a
technology



CIRCULAR FOOD SOLUTIONS

We **support** you through all project phases

We provide support through all stages of a side stream valorization project, from idea generation to production line construction until market launch



Upcycling Consulting Services
to explore the potential of
YOUR side stream



Realization of upcycling &
extrusion plants
(incl. usage rights of our IP)



Sales and R&D support
(such as market research,
samplings, tastings, etc.)

We are ready to expand to new markets. **Join us!**



Carsten.Petry@legria.ch

+41 79 730 69 26



Friedrich.Witschi@legria.ch

+41 79 291 70 88

www.circular-food-solutions.com/
www.linkedin.com/company/legria



CIRCULAR FOOD SOLUTIONS

Address: Gupfenstrasse 5 +++ 9240 Uzwil +++ Switzerland