



Closing the fibre gap

How resavour is
closing the fibre gap

resavour



The fibre gap

80% of the world do not eat enough fibre

The fibre gap refers to the difference between how much dietary fibre people are recommended to eat and how much they actually consume. Globally, **80% of the world estimated to not eat enough fibre**. The recommended amount is 26–34g per day, while in Singapore, adults consume on average only about 13–16g of fibre per day, which is 50% or less of their daily requirements [1].

This shortfall matters because fibre plays a critical role in maintaining overall health. It supports digestion, regulates blood sugar levels [2], promotes weight management, reduces risks for heart disease, and nourishes the gut microbiome [3]. The addition of fibre (both insoluble and soluble) in the diet has been associated with the management of several chronic health issues, including constipation, heart disease, Type 2 diabetes [4], and even certain types of cancer, such as breast cancer and colorectal cancer [5, 6].

A “silent” nutrition crisis?

The fibre gap remains a “silent” nutrition crisis, partly because modern diets are heavy in processed foods that strip out natural fibre. At the same time, many people don’t consume enough whole fruits, vegetables, legumes, and whole grains—foods that are naturally rich in fibre. Additionally, there is still a general lack of awareness around how to include more of it in everyday meals.

resavour vs the fibre gap

At resavour, we believe **everyday snacking** can be part of the solution. We believe that nutrition should not be complicated, and that our food production systems can be optimised to extract the best nutrition without having to compromise on convenience.

We collect high quality byproducts such as brewer’s spent grain from breweries, coffee grounds from coffee producers and citrus peels and give them a second life – transforming them into **high-fibre staples and treats** (with a lower glycemic index that won’t spike your blood sugar) [7].

We call this waste-to-wonder.

We process them to retain their nutrition, so that each snack gives you up to **10X more fibre than its conventional counterparts**, making it easy and enjoyable for people to add more fiber into their diets.

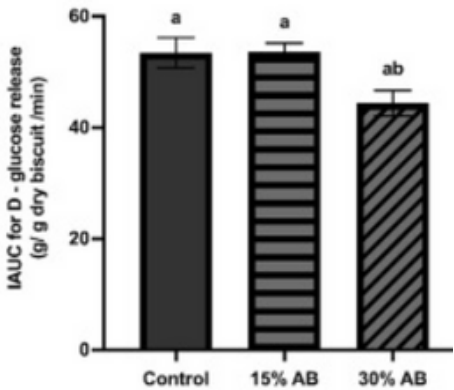


Figure A: Incremental AUC for d-glucose release for control cookies versus those enriched with 15% and 30% BSG

Figure A (above)[8]: Cookies containing 30% of BSG were found to release less sugar.

Table B (left)[8] : compared to standard wheat biscuits, BSG-enriched cookies were found to contain a higher amount of phenolic compounds – antioxidants which help protect your body against diseases[9].

Anti-oxidant equivalent (mg/100g Dry Biscuits)	Type of BSG biscuit		
	Control	15% AB	30% AB
TPC (GAE mg/100g Dry Biscuits)	30.28±4.98 ^a	36.56±2.52 ^a	40.72±3.70 ^a
ORAC (TE mg/100g Dry Biscuits)	226.26±59.70 ^a	300.19±57.38 ^a	331.02±51.87 ^a
FRAP (Fe2+ mg/100g Dry Biscuits)	41.65±7.42 ^a	66.11±4.42 ^{ab}	86.70±8.43 ^b

Table B: TPC: Total phenolic content; GAE: gallic acid equivalent; ORAC: Oxygen radical absorbance capacity; TE: Trolox equivalent; FRAP: Ferric reducing/antioxidant power; AB: Autoclaved Brewer’s Spent Grain substituted biscuit; ROB: 4% R. oligosporus fermented Brewer’s Spent Grain substituted biscuit[8]

Reference: Wang, X., Xu, Y., Teo, S.Q., Heng, C.W., Lee, D.P.S., Gan, A.X. and Kim, J.E. (2023). Impact of solid-state fermented Brewer’s spent grains incorporation in biscuits on nutritional, physical and sensorial properties. LWT, 182, p.114840. doi:https://doi.org/10.1016/j.lwt.2023.11484



Our ingredients:

We incorporate upcycled food byproducts into our products. These byproducts are often discarded as food waste, despite being rich in fibre, protein, antioxidants, and flavour.

Spent Barley Grains



Rich in dietary fibre and protein[10], spent barley grains support healthy digestion, curb appetite, and help regulate blood sugar[11]. The fibre improves bowel function and slows glucose absorption, while protein boosts satiety—together aiding weight control and long-lasting fullness [12].

Used in cookies, granola, bread, chips, energy bites.

Spent Coffee Grounds



Rich in fibre, lipids[13], and natural caffeine, spent coffee grounds lower the glycemic response and improve antioxidant activity in baked goods[14]. The fibre slows sugar uptake; caffeine offers sustained energy—perfect for keeping you full and alert without sugar crashes.

Used in cookies, granola, breads.

Spent Orange Fibre



Packed with pectin (a soluble fibre) and Vitamin C, spent orange fibre support healthy cholesterol and gut bacteria. It enriches fibre, phenolic compounds and antioxidants [15] to promote digestive support with a citrusy boost. Supports gut health and digestion!

Used in cookies.

Additional enhancers:



Nut Butter



Dates



Coconut



Honey



Seeds & Nuts





Sourdough



Cookies



Granola & Energy Balls



Banana Bread

Why resavour?

Delicious by design

- No compromise on taste or texture
- Unique flavour profiles from upcycled ingredients

Functional nutrition for easy wellness

- Rich in fibres for gut health and metabolic support
- Free from artificial preservatives and sweeteners

Sustainably made

- Made with food byproducts upcycled within Singapore
- Reduces raw materials required for manufacturing and byproducts disposed for incineration
- Reduces greenhouse gas emissions*

Baked with purpose

- Produced locally in collaboration with marginalised communities
- Empowers ex-offenders, single mothers, and vulnerable youth with training and employment

Our products are non-GMO, no preservatives, no artificial sweeteners -- suitable for lacto-ovo-vegetarians

Made in SFA, NEA -licensed facilities

*calculated by our in-house team / based on internal formulation

References:

- [1] Sing Health (2025) 'High Fibre Diet', Sing Health, link: <https://www.singhealth.com.sg/patient-care/conditions-treatments/high-fibre-diet>
- [2] Barber, T.M., Kabisch, S., Pfeiffer, A.F.H. and Weickert, M.O. (2020). The health benefits of dietary fibre. *Nutrients*, 12(10), p.3209. doi:<https://doi.org/10.3390/nu12103209>.
- [3] Rodriguez, C.I., Isobe, K. and Martiny, J.B.H. (2024). Short-term dietary fiber interventions produce consistent gut microbiome responses across studies. *MSystems*. doi:<https://doi.org/10.1128/msystems.00133-24>.
- [4] Mao, T., Huang, F., Zhu, X., Wei, D. and Chen, L. (2021). Effects of dietary fiber on glycemic control and insulin sensitivity in patients with type 2 diabetes: A systematic review and meta-analysis. *Journal of Functional Foods*, [online] 82, p.104500. doi:<https://doi.org/10.1016/j.jff.2021.104500>.
- [5] Samami, E., Starkweather, A., Lyon, D.E. and Kelly, D.L. (2025). Associations between dietary fiber, the gut microbiota, and health outcomes in breast cancer survivors: A scoping review. *Clinical Nutrition Open Science*, 61, pp.174–189. doi:<https://doi.org/10.1016/j.nutos.2025.03.012>.
- [6] Annie, Y., Tao, L., Chen, G. and Kong, L. (2025). The Association of Dietary Fiber Intake with Colorectal Cancer and Related Risks: A Literature Review of Recent Research. *Journal of Agriculture and Food Research*, pp.101999–101999. doi:<https://doi.org/10.1016/j.jafr.2025.101999>.
- [7] Zhang, G., Wang, D., Ding, Y., Zhang, J., Ding, Y. and Lyu, F. (2024). Effect and mechanism of insoluble dietary fiber on postprandial blood sugar regulation. *Trends in food science & technology*, 146, pp.104354–104354. doi:<https://doi.org/10.1016/j.tifs.2024.104354>.
- [8] Wang, X., Xu, Y., Teo, S.Q., Heng, C.W., Lee, D.P.S., Gan, A.X. and Kim, J.E. (2023). Impact of solid-state fermented Brewer's spent grains incorporation in biscuits on nutritional, physical and sensorial properties. *LWT*, 182, p.114840. doi:<https://doi.org/10.1016/j.lwt.2023.11484>
- [9] Muscolo, A., Mariateresa, O., Torello Giulio and Russo Mariateresa (2024). Oxidative Stress: The Role of Antioxidant Phytochemicals in the Prevention and Treatment of Diseases. *International Journal of Molecular Sciences*, 25(6), pp.3264–3264. doi:<https://doi.org/10.3390/ijms25063264>.
- [10] Whorms, G. (2021). Nutritional benefits of Spent Grains. [online] The Spent Goods Company. Available at: <https://spentgoods.ca/nutritional-benefits-of-spent-grains/>.
- [11] Saberian, H. et al. (2024) 'Brewers' spent grain as a functional ingredient in bakery, pasta, and cereal-based products', *Future Foods*, 10, p. 100479. doi:[10.1016/j.fufo.2024.100479](https://doi.org/10.1016/j.fufo.2024.100479).
- [12] Naibaho, J., Wojdyło, A., Korzeniowska, M., Laaksonen, O., Föste, M., Kütt, M.-L. and Yang, B. (2022). Antioxidant activities and polyphenolic identification by UPLC-MS/MS of autoclaved brewers' spent grain. *LWT*, 163, pp.113612–113612. doi:<https://doi.org/10.1016/j.lwt.2022.113612>.
- [13] Choe, U. (2025). Valorization of Spent Coffee Grounds and Their Applications in Food Science. *Current Research in Food Science*, 10, pp.101010–101010. doi:<https://doi.org/10.1016/j.crfs.2025.101010>.
- [14] Koay, H.Y., Azman, A., Mohd Zin, Z., Portman, K.L., Rusli, N.D., Mamat, H., Aidat, O. and Zainol, M.K. (2023). Assessing the impact of spent coffee ground (SCG) concentrations on shortbread: A study of physicochemical attributes and sensory acceptance. *Future foods*, 8, pp.100245–100245. doi:<https://doi.org/10.1016/j.fufo.2023.100245>.
- [15] Almoumen, A., Mohamed, H., Subash, A., Al-Marzouqi, A.H., Ayyash, M., Al, A.S. and Kamal-Eldin, A. (2025). Fortifying bread rolls with date fruit fiber: Effects on dietary fiber, antioxidant capacity, mineral content, and glycemic response. *NFS Journal*, pp.100229–100229. doi:<https://doi.org/10.1016/j.nfs.2025.100229>.
- [16] Ullah, H., Esposito, C., Piccinocchi, R., De Lellis, L.F., Santarcangelo, C., Minno, A.D., Baldi, A., Buccato, D.G., Khan, A., Piccinocchi, G., Sacchi, R. and Daglia, M. (2022). Postprandial Glycemic and Insulinemic Response by a Brewer's Spent Grain Extract-Based Food Supplement in Subjects with Slightly Impaired Glucose Tolerance: A Monocentric, Randomized, Cross-Over, Double-Blind, Placebo-Controlled Clinical Trial. *Nutrients*, [online] 14(19), p.3916. doi:<https://doi.org/10.3390/nu14193916>.

