

## **NutraCycle - a new and potentially disruptive solution to filling the fibre gap**

It was Hippocrates that said “let food be thy medicine and medicine be thy food”. Unfortunately, we have failed in this ambition by developing over the years a food production system that discards many of the nutrient rich parts of plants we should be utilising. One example of this is the dietary fibre present in hemicellulose side-stream products typically sent to animal feed. Consequently, today over 90% of adults lack over 50% of the soluble fibre or prebiotics they should be consuming in their diets on daily basis. This reality has led to poor gut microbiome health and naturally poorer human health since the microbiome has been proven to impact blood sugar and cholesterol levels, mineral absorption, immune system strength, and the risk of developing a long list of different metabolic and chronic diseases.



To address this soluble fibre deficiency in processed plant-based food & beverage products today, one can of course consume more fresh products or simply take a prebiotic supplement. Unfortunately, changing consumer behaviour is not an easy endeavour. Moreover, although functional prebiotic enriched food & beverage products and the use of gut health supplements have seen impressive growth in recent years, this has had only a marginal impact on the gut microbiome health of the broader adult population, due to price, availability, and a general understanding of the need. The reality is, quite frankly, gut microbiome health is becoming poorer, and more and more people are suffering health issues as a result.

What if, however, all processed plant-based products could become healthier products, and people could consume more prebiotics in their normal diet. This is a question that Carbiotix asked after working with the extraction of prebiotics from plant-based materials over ten years. This key question led to a revelation and the launch of NutraCycle in early 2024, a potentially disruptive onsite upcycling and fortification service targeting companies producing processed plant-based products.

NutraCycle allows food & beverage, ingredient, and feed companies processing plant-based materials to extract prebiotics, proteins, mono-sugars and other active ingredients from the side-stream hemicellulose fraction typically sent off-site as animal feed or upcycled into other products with low bioavailability ie. insoluble rich. These extracted ingredients are primarily used to fortify and functionalise existing and new products onsite, in principle, turning a plant-based product into a prebiotic, protein and active ingredient enriched plant-based product requiring less added sugars. Extracted products can also be dried and sold off-site as a new revenue source, and any insoluble fibres left over from the extraction process can be sold as material for bio-based packaging or bioenergy, thus utilising 100% of the starting raw material. Therefore, one can say NutraCycle leads to healthier products, increased profits, and an opportunity to become more sustainable.

The NutraCycle service lends itself to the side-stream hemicellulose fraction of any fruit, vegetable, cereal, legume, nut, berry, grass seed and other plant-based material, and Carbiotix provides support with regards to process design, product formulation, economic analysis, technology sourcing, process optimisation, and finding customers for offsite sales through key partners. The NutraCycle Network allows customers to avoid reinventing the wheel and leverages the collective knowledge and experiences of all NutraCycle customers, thus accelerating and optimising all key steps in setting up and operating a successful and profitable onsite upcycling and fortification process.

To learn more about NutraCycle and becoming a customer, contact us at [info@carbiotix.com](mailto:info@carbiotix.com).