

Gut microbiome and blood markers after habitual herbal tea consumption

Introduction

In the United Kingdom, an estimated 90,000 people die from diet-related disease each year. Western diets are associated with an increase in the prevalence of noncommunicable diseases.

The obesity epidemic has a direct impact on resources, particularly in rural and remote regions, which are already stretched thin.

Giving science-based solutions to people with weight-related problems can help improve their long-term connection with food, as well as reduce other health issues. This might result in increased confidence, emotional resilience, and a variety of other personal advantages, providing value to community resilience/prosperity, and enhancing people's own wellness and happiness.

Trial description

TeTrimTeas are producing quality, science-based botanical/herbal teas aiming to improve health and wellbeing, growing/sourcing as many of the ingredients locally and organically, to reduce food-to-fork miles within the decarbonisation and sustainability agendas in Wales.

TeTrimTeas would like to test their herbal green tea blends with honey, improving on existing Chinese formulation, as a 'health tea'. The recruited healthy human cohort will be randomised into one of three intervention teas. TeTrimTeas would like to explore if consumption of the teas for 21 days has an impact on digestion and potentially help control weight gain and impact on eating choices. High resolution metabolomics and lipid panels will be used to investigate the chemical composition of capillary blood samples. Changes in the gut Microbiome will be explored using stool samples.

Potential Health Tea properties

- Anti-obesity effect - green tea and its catechins, lower body weight, tissue fat, and blood fat.
- Control the level of anabolic hormones such as sex steroids, insulin, and IGF-I which are responsible for stimulating fat cell growth which levels are controlled by green tea consumption.
- Anti-diabetes effect – lowers blood glucose levels which improves short- and long-term diabetes-related complications.
- Anti-cancer effect – antioxidants in green tea scavenge the reactive oxygen species which suppresses the formation of some types of cancers.

Tea components

Herbal tea components have been sourced ethically and as locally as possible and are included in the teas in their raw, dried forms, i.e., leaf, seed, fruit, depending on the nature of the ingredient.

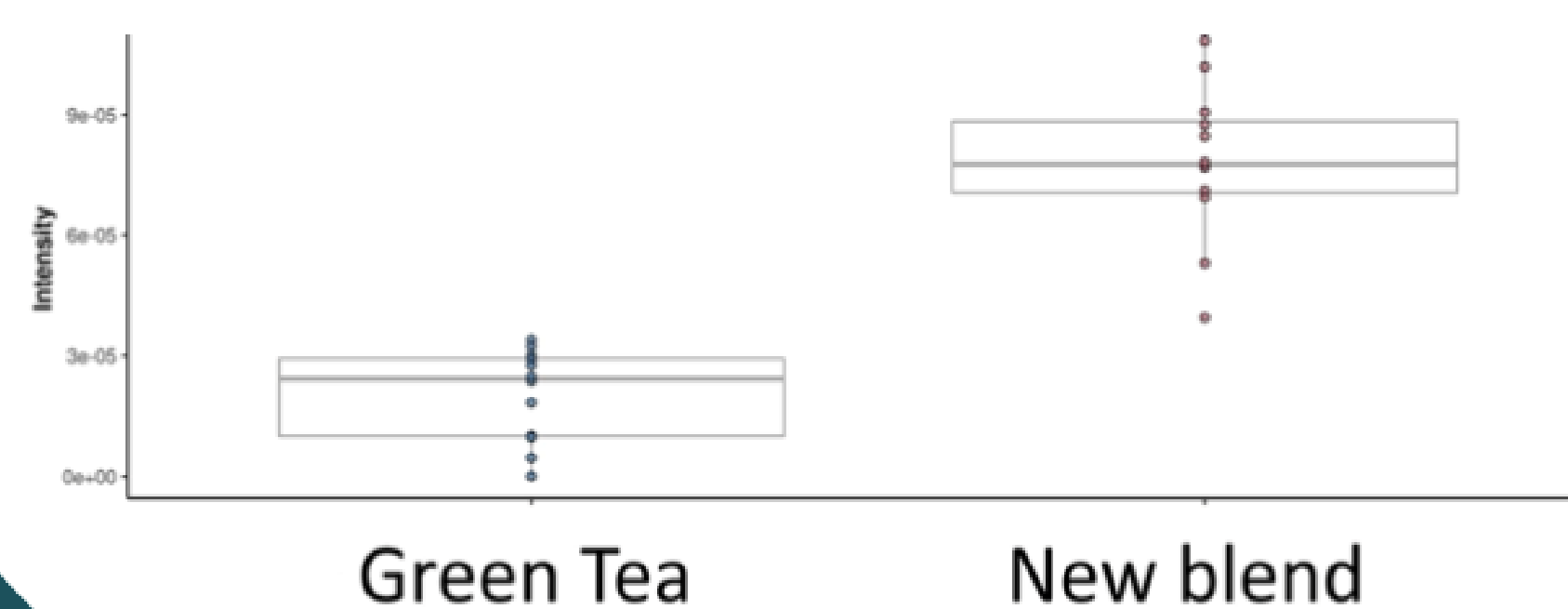
Components have been processed and blended in different proportions to create different herbal blend iterations.

High-resolution metabolomic fingerprinting.

Key health-promoting elevated signals in the new herbal tea blend.

Including:

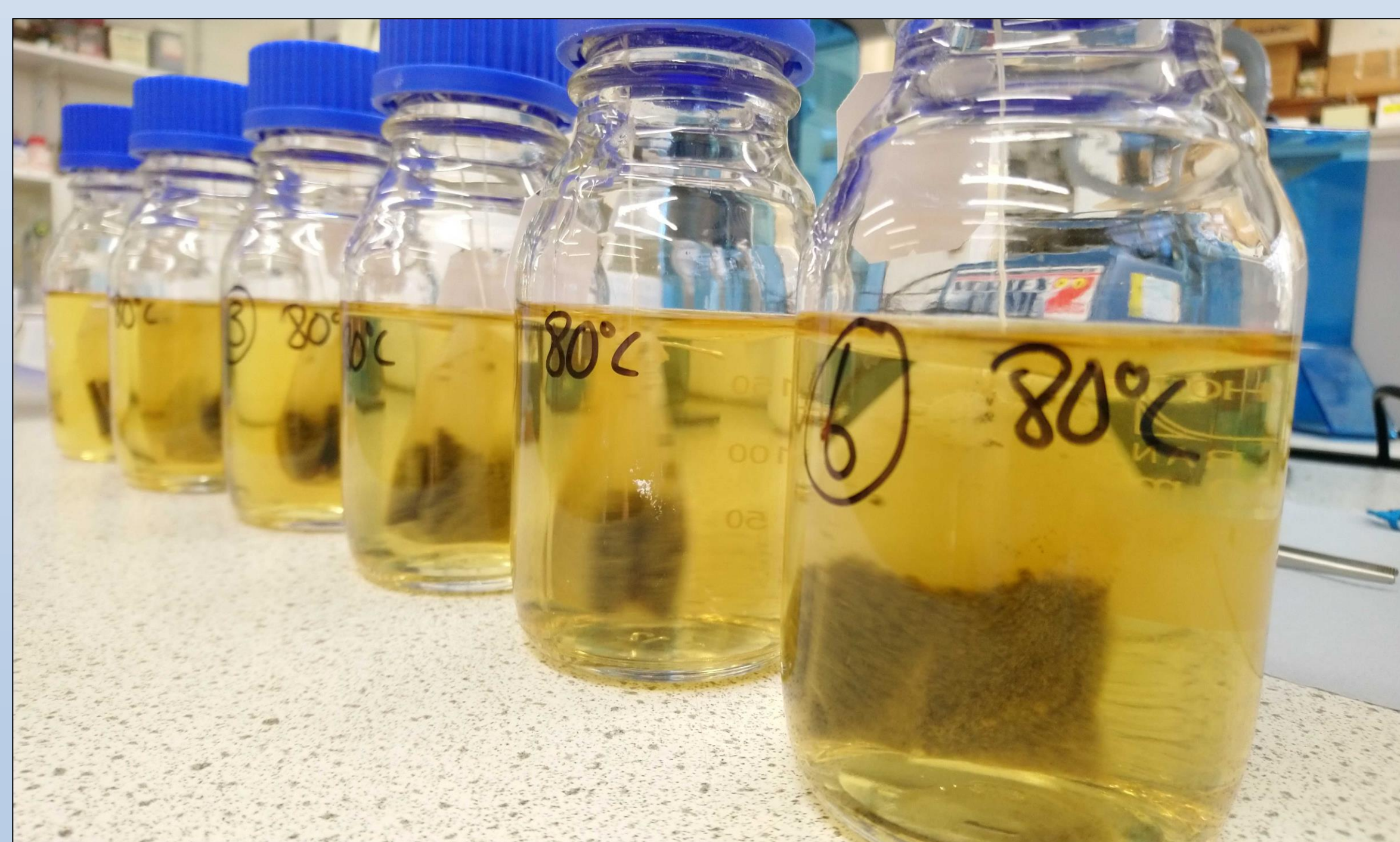
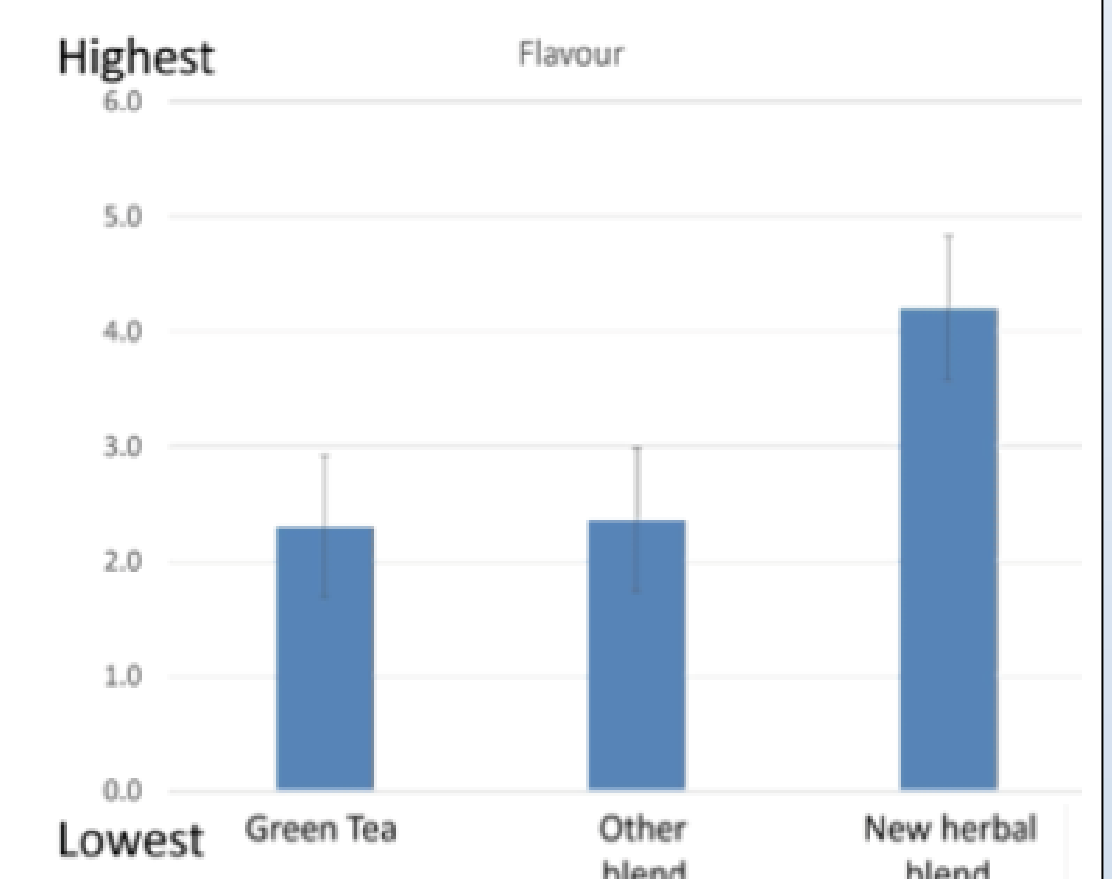
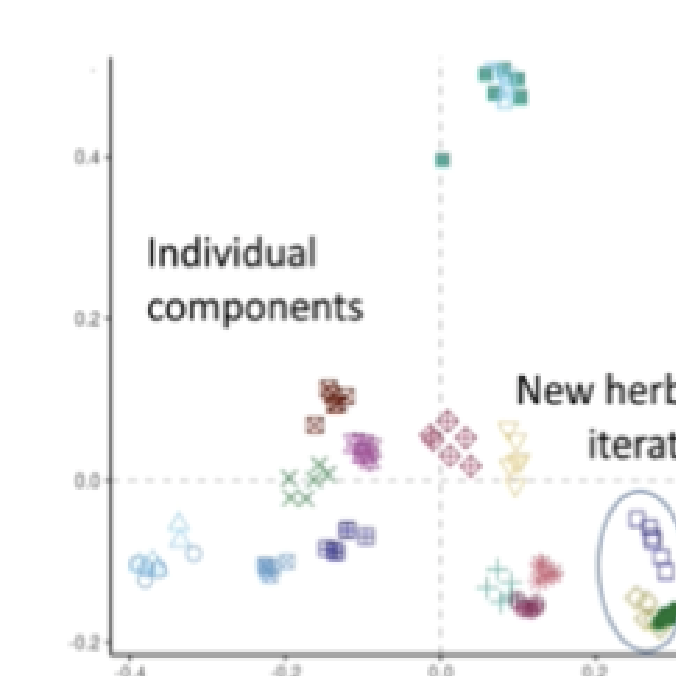
- Anthraquinone and anthraquinone derivatives
- Monosaccharides glucose / fructose, oligosaccharides/ disaccharides
- Green tea catechins



Sensory analysis and flavour profile analysis

A sensory trial was conducted by AberInnovation.

The appearance, aroma, texture/mouthfeel, flavour and aftertaste of the new herbal blend was better than green tea and another blend.



Blood & stool collection and analysis

Capillary blood will be collected before and after completion of the tea trial. The volunteers will be fast prior to blood collection to prevent dietary influence on analysis of metabolic and lipid content.

Faeces will also be collected at the same time for analysis at Swansea University for changes in blood microbiome. This will be achieved by sequencing bacterial DNA to look for changes in species present.



Supported by

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