

M.Sc. (Food Sci.), Doctoral student

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Preparation of biomaterial-based solid foams by extrusion

The aim of my work is to produce solid foamy structures by extrusion cooking using biopolymers, which are usually considered as by-products of food industry. These products are e.g. brewer's spent grain (BSG) and whey protein isolate (WPI). I am interested in finding out what kind of effects different by-product biopolymers have on the physical properties (expansion, hardness, water content and water sorption properties) of extrudates and how those properties could be modified by changing extrusion parameters such as water content of the mass, mass flow, temperature profile and screw speed. Produced extrudates could be used as healthier snack products containing high amount of protein and dietary fibre, or as packaging materials depending on the composition of the extrudates.



Barley extrudates made by using the same extrusion parameters with different recipes.
Ingredients: barley flour and BSG;
barley flour, WPI and BSG;
barley flour, barley starch, WPI and BSG;
barley flour, barley starch and WPI.