

Thesis Proposals for the Master in Food Sciences for Innovation and Authenticity

Proposal 1: Market Research - which innovations will await us in the future in which product categories?

This thesis proposals can refer to three different product categories:

- Third generation vegan products: meat-like (taste and appearance) products based on protein isolates. This market is mainly dominated by large corporations such as Beyond Meat or Impossible Foods. These companies are doing very intensive research and are already able to replicate hemoglobin. However, as FruitSERVICE we also have some suppliers in our supplier pool, who supply us with such products.
For this product category the student could show the state of research regarding vegan products. The focus of market research could be on whether it is more important for the consumer that the product tastes and looks like meat, or whether the raw materials for the product are grown pesticide-free. After showing the state of the art it would still be possible to contact one of our suppliers and develop a pesticide free product in collaboration with the student.
- Cultured Meat: Due to the high population density in Asia and large cities in the USA, the demand for cultured meat products is already high. Meeting the meat demand is associated with high methane emissions from animals and therefore alternatives such as cultured meat are required. In the scientific work the student should evaluate the growth potential of cultured meat products in several geographical locations.
- All other vegan products: animal derived products (such as milk, eggs, fish, etc.) for which vegan alternatives are developed and produced. The student analyzes which alternative products are already on the market, which will be in the future and illustrates their growth potential (advantages and disadvantages).

Proposal 2: Development of an assessment model to evaluate innovations with regard to scaling potentials.

We work with a large number of suppliers who regularly approach us with new and innovative product ideas. In addition, in the course of our internally performed market research, we are constantly discovering new products. Without broad experience, it is very difficult to objectively evaluate the scalability of the products. The student develops criteria (marketability, taste, cost, etc.) which can be used to evaluate the scalability of the products and weights them. The goal is that the assessment model results in a score that shows the potential regarding the scalability of the article.

Proposal 3: Which plants are most suitable for growing in an aeroponic or hydroponic farm?

There is an enormous number of plants worldwide and most of them have not been researched yet. The goal of the master thesis is to identify plants that are suitable for aeroponic or hydroponic farming. In doing so, the agronomical feasibility and the economic efficiency will be considered. Furthermore, it will be shown for which industry (e.g. pharmaceutical, food, beauty, etc.) and which fields of application the plant can be used. The scientific work could be limited to high alpine plants, which at this moment can only be harvested seasonally (for example only in summer, because covered by snow in winter). Which high alpine plants are suitable for hydroponic or aeroponic farming and for which fields of application are they suitable?

Proposal 4: Which types of proteins are most suitable for which kind of product categories?

This Master thesis is related to intensive laboratory activities at the Free University of Bolzano. The student analyses which proteins are available and from which raw materials (for example soya, peas, algae, etc.) they are obtained. Which proteins are best suited for the production of food? The student defines the criteria by which he/she evaluates the suitability of the proteins for the food industry and tests their suitability in the laboratory if possible.