

# SUSTAINABLE DIETS AND SUSTAINABLE PACKAGING FOR A BETTER WORLD

*Packaging for plant-based diets- Exploring the requirements of future packaging materials*

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**We, as consumers, are aware of which foods are good and bad for our health and the environment. But still, we tend to consume unhealthy food that comes in plastic packaging for various reasons. We also think twice to pay 5-6 bucks extra for low-impact packaging. Will this situation change? Will there be a dietary shift from animal-based to plant-based protein foods? Will there be a development of sustainable packaging for these sustainable foods?**

Food is important for all living beings on earth. Both animal and plant sources are used to make food. But plant foods are considered healthy and safe for the environment whereas eating animal foods cause many diseases, less safe for the environment and need more resources for production. Taking everything into account, change in diet from animal proteins to plant proteins is needed globally. Also, it is important to maintain minimal environmental impact throughout the life cycle of these products such as from production to consumption. Thus, development of sustainable packaging is important to reduce environment problems and food waste.

Although, developing sustainable packaging is a current challenge because it should have good barrier properties as the current plastic packaging. Also, different products such as animal-protein and plant-protein have different product requirements, supply chain conditions and consumption patterns. Thus, packaging for new plant-protein might need to fulfil new type of requirements. This master thesis explored consumers opinion towards animal and plant-based diets and their perception towards packaging requirements of these diets. It also investigated industry perception of

requirements of packaging materials for plant-based versus animal-based diets. This study used mixed methods such as survey and expert interviews to achieve the objectives. The survey was used to analyse consumer perception whereas the interviews were used to understand the industry perception.

From the results, it can be seen that the shift from animal-based to protein-based diet might be happening but due to unavailability in their region, taste and protein content consumers find it challenging to consume plant-proteins and often end up in eating animal-proteins. They also have a negative opinion on plastic packaging. When studying the differences in the requirements of packaging materials, the industrial experts say that currently often the same type of packaging is used for both animal-based and plant-based protein products and packaging depends on the specific product rather than solely on the protein source.

Finally, it can be concluded that current packaging materials are sufficient for chilled and frozen products but still there is a need for packaging development and optimisation for chilled products and products that are stored in room temperature to increase their shelf-life. Also, there is need for sustainable packaging with good barrier properties, low environmental impact and good recycling ability.

Sustainable food products packaged in sustainable packaging would be expected to result in a healthier and more pleasant living environment.