In the face of today’s challenge to make the healthy choice the easy choice, it is vital for the food industry and research organizations to pool knowledge and resources for multidisciplinary research. TiF Food and Nutrition, is a unique public/private partnership that generates vision on scientific breakthroughs in food and nutrition, resulting in development of innovative products and technologies that respond to consumer demands for safe, tasty and healthy foods.

“A PREDICTIVE MODEL FOR THE DUTCH POST-CONSUMER PLASTIC PACKAGING RECYCLING SYSTEM”

Introduction

“What is the impact of different improvement options (design, collection, sorting, recycling) for the post-consumer plastic packaging recycling chain on the quantity and quality of the washed milled goods?”

Design

A predictive model for the Dutch post-consumer plastic packaging recycling system (PPRS) has been made. This model shows the quantity and quality of the washed milled goods from the PPRS based on various parameters in this chain. The basic model is based on the recycling system as it was in 2014, as a starting point. This model is used to calculate the effect of improvement options in the chain, by changing specific parameters.

Main outcomes

• There are options to improve the quantity and quality of the washed milled goods.
• Technical improvement options will only flourish with the right business incentives within the recycling chain.

Discussion & implications

The improvement options with the biggest effect (per type of stakeholder):

Packaging industry: Design for recycling measures greatly improve the quality of the washed milled goods.

Collection services: The introduction of co-collection systems has improved the chain quantitatively, but these collection systems can also increase the concentration of impurities and hence lower the quality of the washed milled goods.

Sorting companies: Sorting policies can be changed to higher quality sorting products, with less contaminants. This results in larger quantities and higher qualities of washed milled goods.

Recycling companies: Further development of recycling technologies will lead to more circular recycling (e.g. bottle to bottle). For laminated packages (as in the Mix) alternative recycling options are needed.

Future research

The next step is to define policy directions for improving the performance of the PPRS. These directions could comprehend multiple improvement single options which can have a synergetic effect.

Design of future studies

To discuss:

• Which intervention strategies for the PPRS should we elaborate on?
• Which technical improvement options could contribute to these intervention strategies?