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2s2: Food safety and risks in a circular system

The circular economy and associated risks from food waste

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The Netherlands has set as policy objective a 50% reduction in use of primary raw materials by 2030, and aims to achieve a complete Circular Economy (CE) in 2050. The Dutch Netherlands Environmental Assessment Agency (PBL) was assigned to monitor all CE-activities in The Netherlands and noted more than 85,000 CE initiatives in 2018, accompanied with 420,000 jobs. CE-activities were divided in the categories: biomass & food, construction, consumption goods, plastics, and the 'make' industry. They were further divided into different types of activities or R-strategies. Most of them are shared under recycling (R5) of consumption goods. This shows that CE is not new, but already a significant part of the current day economy. There are only few examples on CE-activities among food or food waste, but they sometimes include many tons of (raw) materials.

In this presentation, four examples of food (waste) associated risks are presented, that were examined by NVWA-BuRO. The first is on the risks associated to the supply chain of potatoes. In the past potato peels, in the process of preparing fries, were collected and used as feed for farm animals. Recently, potato peels are transformed into biofuel or plywood, thus contributing to a more sustained use of the potato peels. The downside of this will be explained. The second example is on the chemical and biochemical risks of breeding insects on former foodstuffs to feed farm animals or in some cases humans. The third example is on biobased food contact materials (FCMs), which can be made from food waste. The presence of organic substances and heavy metals in the biobased and virgin-made FCMs in relation to risks will be further explained. The fourth example is on the use of bamboo food contact materials such as cups, where the food safety risks of melamine and formaldehyde are explained.

There are thus huge challenges for the 'foodture', with the many new types of food, FCMs originating from all types of sources, including recycled ones, and the many chemicals and pathogens possibly involved. Key is that the major element of the European General Food Law and the General Products Safety Directive should remain to be respected, i.e., food, feed and consumer products should be safe, while the European legislation on Food

Contact Materials urgently needs an update, as is recently started upon request by the European Parliament.

Keywords: Food safety, circular economy, food contact materials