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2s2: Food safety and risks in a circular system

FOOD SAFETY ISSUES WHEN CLOSING THE LOOPS IN FOOD PRODUCTION

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In attempts to produce enough food for the global population, food production systems have become very efficient in terms of high yields and low production costs, while assuring high quality and safety. However, these intensive food production systems have led to side effects like decreasing sustainability, such as degrading soil, shortage of clean water, the use of veterinary drugs and hormones, chemical fertilizers and pesticides, and food waste, amongst others. Recently, these downsides of the intensive production systems in Europe were acknowledged by the European Commission (EC) and - in an attempt to restore the sustainability of food production in the future - the EC now advocates a transition towards more sustainable food production systems. In its Green Deal, the EC describes her policy to achieve sustainable food production: food waste should be reduced, the use of chemical pesticides and of fertilizers should be reduced and by- and side streams should be reused within the food system. Regarding food waste, a hierarchy is used: the first priority is to prevent food waste, the second one to re-use waste, the third one to recycle food waste (e.g. use it as ingredient in animal feed), the fourth one to recover waste (e.g. through composting, energy can be recovered from waste), and the last and fifth priority is to dispose waste. This proposed waste management system should, however, not lead to negative impacts on animal and human health or the environment. Strategies to reduce food waste and to re-use by- and side-streams of feed and food production can result into the accumulation of chemical, physical or microbiological hazards. These could be known food safety hazards or new hazards that were not encountered in the (linear) food production system before. To date, little information is available on the possible side effects of the proposed transition towards sustainable food production on food safety. Effects can be expected in plant production, animal production, aquaculture, water and packaging. This presentation will present the available data and information on possible food safety risks related to circular food production systems.

Keywords: food safety, food security, circular food production, sustainability, risk management