Netherlands Food and Consumer
Product Safety Authority
Ministry of Agriculture,
Nature and Food Quality

Alternatives to single use plastics:

Focus on biobased materials

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Single use plastic directive (EU) 2019/904

- Single use plastics do not fit into ‘A European Strategy for Plastics in a Circular Economy’
- An important aim is to reduce marine plastic litter
  - Replacement of plastic by different materials
  - Promote re-use
  - Promote recycling
  - Make producers responsible for collection of plastic litter

Effects of Single Use Plastic directive

- Different materials are being used, not all fit for purpose
- More biobased materials on the market – most of these materials are not regulated
- Greenwashing may occur (example: bamboo/melamine utensils)
- Re-use and recycling will increase, this may introduce new risks
- Balance between environmental goals and protection of public health

Overview

- RIVM project 2022: Alternative materials for single-use plastics
- RIVM project 2023: Re-use of food utensils
- NVWA investigation of biobased materials
- NVWA investigation of paper straws

RIVM project 2022: alternatives for plastic

1. What alternative materials are used on the Dutch market?
2. What substances may be present in these materials?
3. Which of these substances are of human toxicological concern?
4. Which alternative materials are prioritized for monitoring?

RIVM project 2022: alternatives for plastic

Fieldwork carried out in 2022:

- ‘Standard’ biobased materials: paper, paperboard, wood
- ‘Exotic’ biobased materials: bamboo, palm leaves, sugar cane,
- Bioplastics (mainly PLA)
- Coated paper and paperboard (‘this product contains plastic’)
- In between single- and multiple use plastics

RIVM project 2022: alternatives for plastic

Step 2 and 3 will be finished in 2022

Step 4 is requires more data

Step 3 is very important: input for further investigation

RIVM project 2023: Re-use of food-utensils

- Re-using food utensils may impose chemical, microbiological and physical risks
- In 2023, RIVM will carry out an inventory for
  - Straws
  - Cups for coffee-to-go
  - Takeaway food packaging
  - Cups and other consumables at festivals/parties

RIVM project 2023: Re-use of food-utensils

- Which materials are being used?
- Inventory of possible risks (literature review)
- Recommendation for investigation NVWA

NVWA investigation biobased materials

- In 2022 28 products were sampled
- Analyzed for:
  - Plant protection chemicals
  - PFAS
  - Metals and metalloids
  - General GC-MS screening

wheat straw

sugar cane bowl

bagasse cup

coconut boat

NVWA investigation biobased materials

- Results plant protection chemicals:
  - 10 out of 28 samples were positive
  - Traces of acetamiprid, carbendazim, cypermethrin, pyraclostrobin, chlorpyrifos, imidacloprid, permethrin (<0,07 mg/kg)
  - Bamboo bowl contained > 20 mg/kg carbendazim
- Results of metals and metalloids:
  - Al, B, Cr, Mn, Fe, Cu, Zn, Sr and Ba were detectable in almost all samples
  - Al, Mn, Fe, Zn and Ba in relatively high amounts (100-2600 mg/kg paper)

NVWA investigation biobased materials

- Results GC-MS screening:
  - plasticizers: phthalates, terephthalates, citrates
  - antioxidants
  - plant sterols (sitosterol, stigmastanol, campesterol)
- Results of PFAS are expected in December
- National FCM legislation on wood and cork will be extended to all natural materials

NVWA investigation paper straws

- End of 2021 NVWA received consumer complaints on nearby choking incidents concerning paper straws
- In February 2022 NVWA asked the general public for reports on incidents
- Total of 1300 reports; 400 reports concerned part of the paper straw in the throat of a child or person with a disability
- NVWA advised to supervise children and disabled persons when drinking with a straw
- Minister asked industry to find alternative for paper straws

NVWA investigation paper straws

- Sampling of paper straws, both included with drinks and normal straws
- Analyzed for:
  - PFAS
  - Metals and metalloids
  - General GC-MS screening
- Results expected beginning of 2023