OPTIMIZING THE CIRCLE FROM BIOWASTE AND BACK TO FOOD

Morten Brøgger Kristensen
Chief Technology Officer
mb@solum.com
AGENDA

1. Circular packing and collection of food
2. A circular solution for food waste
3. How the Aikan technology works
4. Perspectives of food waste handling in Denmark
PACKING OF FOOD OR FOOD WASTE

- CO₂ uptake (biobased material)
- Recycling with compost (biodegradable packeting)
- Food wrapped in bags or other packing
- CO₂ release (fossil fuel based packing)
- Recyclable plastics (plast)
- Loss in recycling system
- Linear treatment (Incineration)
- The waste collection system
THE GENERAL WASTE HANDLING REGIME
Aikan is a good example of circular economy

Agriculture produces food, that retail shops sell. Surplus from farms and retail shops goes back to Aikan. Food is sold to households. Biowaste is collected by municipalities and go to Aikan. Methane from Aikan is used as fuel for waste trucks and compost is used in agriculture to produce food.
FOCUSED ON A STRATEGY FOR WASTE TO MOVE UPWARDS

Avoid
Reduce
Reuse
Recover
Incineration with energy recovery
Dispose (Landfill)

Optimized recycling with energy recovery

Waste Hierarchy Strategy
THE AIKAN PROCESS

Solid organic matter is made soluble by microbial enzymatic degradation

Volatile organic matter is transformed to methane by bacteria

Resistant organic matter is sanitized and transformed into Compost
THE WASTE TREATMENT FLOW

Food waste received separately: either in plastic or in biodegradable materials

Plastic bags are screened out before processing. All other materials treated biological

Mixing with woody structure and opening biodegradable bags

Three weeks of biogas followed by four weeks of in vessel composting

One to three month of active aerated maturation

Screening of dry final compost on 10 mm screen
PLASTIC WRAPPED FOOD WASTE
OPENING OF BIODEGRADABLE BAGS, MIXING WITH STRUCTURE AND FEEDING TO PROCESS MODULES

From BioVækst in Holbæk
COMPOST SCREENING

10 mm screen, wind sifter and magnetic separator secure a high quality compost product with no plastics due to gentle pretreatment.
BACHWISE TREATMENT FOR STABILITY AND FLEXIBILITY
FROM CONSTRUCTION SITE JUNE 2019
PLANT STARTING APRIL 2020
Mainly controlled by pig farming and short time tenders from public incineration companies

- Thus wet anaerobic digestion systems and burning of reject

Biodegradable wrapping fits with food waste since

- plastic from food waste is greasy and it comes last when talking recycling
- Communication to the public is easy: you shall not throw your plastic with your food since it is collected in special bags

Compost from food waste makes very good sense for organic farmers, who are in lack of nutrients and wants a clean and circular fertilizer
THANK YOU FOR THE ATTENTION