



Meer halen uit de biologische kringloop

NOTE Assessment of the input materials for biological treatment in Flanders (BE)
Date 13.01.2025

1. Introduction

In 2022, Vlaco carried out a detailed screening of the input materials for biological treatment in Flanders. This screening was based on the input registers from both the composting and AD plants of the working year 2020.

For the treatment via composting (end product = compost), mainly green waste and vfg-waste from households is used. For 2020, this was respectively 690.000 tonnes of green waste, 290.000 tonnes of vfg-waste and 11.000 tonnes of other biowaste. No sludge from food/feed industry is entering a composting process in Flanders.

For the treatment via anaerobic digestion (end product = digestate), the following amounts were treated: 612.000 tonnes of manure, 172.000 tonnes of energy crops and 1.528.000 tonnes of biowaste, originating from food/feed and biobased industry (total input = 2.312.000 tonnes in 39 AD plants).

This note focuses on the 1.528.000 tonnes of biowaste: what materials are those and how many is available/applied ?

2. Description of the biowaste for anaerobic digestion

Biowaste group	Examples/subcategory	Tonnes	Percentage of biowaste input
Low risk: agricultural waste	Potato leaves/peelings, wheat, grains, cocoa shells, tobacco leaves, ...	390.600	24,2%
Medium risk: food / feed processing and biobased industry	Solid biowaste	207.300	12,8%
	Liquid biowaste	456.000	28,3%
	Biowaste from depackaging	49.400	3,1%
	Sludge: flotation sludge, biological sludge from on-site water treatment of food/feed and biobased industry (known origin and proved with analyses)	350.000	21,7%
Higher risk	Waste treatment industry, chemical industry, oleochemistry (quality proved with analyses)	160.000	9,9%

The amount of sludge from food/feed and biobased industry is at least 350.000 tonnes, meaning 21,7% of the biowaste input in Flemish AD installations. From the 39 AD plants, all treated at least



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one of the inputs that are registered under one of the following EWC codes: 02 02 04, 02 03 05, 02 04 03, 02 05 02, 02 06 03, 02 07 05 (sludge from on-site effluent treatment of food/feed industry).

3. Analytical assessment of input materials quality

According to Flemish regulation on biowaste treatment, the input materials from medium risk and high risk need to be regularly analysed on the following parameters before they can be used in a composting or AD plan as input material:

- Heavy metals: As, Cd, Cr, Cu, Hg, Pb, Ni, Zn
- Organic pollutants: PAH(16), PCB, mineral oil (C10-C40), chlorobenzenes
- PFAS (17 compounds)

The following legal limit values¹ apply for input materials:

HEAVY METALS		
Arsenic	20	mg/kg DM
Cadmium	6	mg/kg DM
Chromium (total)	150	mg/kg DM
Copper	800	mg/kg DM
Mercury	1	mg/kg DM
Lead	300	mg/kg DM
Nickel	100	mg/kg DM
Zinc	1500	mg/kg DM
PAH		
Sum PAH(16)	20	mg/kg DM
PCB		
Sum PCB(7)	0,6	mg/kg DM
MINERAL OIL		
C10-C20	560	mg/kg DM
C20-C40	5600	mg/kg DS
PFAS		
Sum PFAS(17)	15	µg/kg DM

Input materials that don't show compliance with the above limit values, are not allowed to be used as input for biological treatment processes (composting and anaerobic digestion) from which the resulting compost and digestate are used as organic fertiliser or soil improver.

¹ Flemish regulation on the sustainable management of material cycles and waste (VLAREMA)