



SATW Forum

Composting and methanisation of biowaste with biobased polymers in Switzerland

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- Director of the Swiss composting and methanization association Biomasse Suisse since 2017
- Member of the bioplastics roundtable
- Director of 4 industrial biowaste composting and fermentation plants from 2000-2012 (parts of the axpo-kompogas conglomerate)

- The Swiss national association of
 - Industrial composting plants
 - Industrial anaerobic digestion plants
 - Agricultural anaerobic digestion plants
- About 100 members
- Main activities
 - Training
 - Supporting members (knowhow, politically)
 - Lobbying
 - PR and communication

Introducing the Swiss Biowaste Collection System

- National level
 - Basic rules, promoting separate collection of biowaste, setting limits for e.g. impurities
- Cantonal level (26 cantons), municipalities (2255)
 - From total neglect to total engagement
- Collection systems
 - No separate collection
 - Only garden / yard green waste
 - Garden waste with kitchen peelings
 - All organic waste

- Conventional plastic and bioplastic bags are both allowed
- They are both used in similar situations, e.g.
 - Bags for packing fruits and vegetables in supermarkets
 - Bags sold at the checkout of supermarkets
 - Bags for packing any product in any sort of shops

Introducing the Bioplastics Roundtable (1)

- Initialised 2001 by the Swiss federation of cities
- An informal group, meeting twice a year, normally 20 to 25 persons attending
- Open to everyone interested in bioplastics

Introducing the Bioplastics Roundtable (2)

- The roundtable includes
 - Federal office for the Environment
 - Federation of Swiss Cities
 - Four waste management / recycling / environmental associations
 - The largest major distributors / wholesalers
 - PET Recycling association
 - Swiss Plastics association
 - Producer of raw material
 - Producer of bioplastic products
 - Bioplastics dealers
 - Plastic recycling company
 - Horticulture products manufacturer

Introducing the Bioplastics Roundtable (3)

Die Teilnehmer des Runden Tisches BAW (BAW = biologisch abbaubare Wertstoffe) Les participants de la table ronde MBD (MBD=matériaux biodégradables) I partecipanti della Tavola rotonda MBD (MBD=materiale biodegradabili) The partners of the bioplastics roundtable				
 Bundesamt für Umwelt BAFU	 BioApply	 Coop Schweiz	 Kommunale Infrastruktur des Städteverbandes und des Gemeindeverbandes	 Kompostforum Schweiz
 Biomasse Suisse	 Swiss Plastics, Kunststoff-Verband Schweiz	 Pet-Recycling Schweiz	 Praktischer Umweltschutz Schweiz	
 Manor	 Migros Genossenschafts-Bund	 Novamont SpA	 Pacovis AG	 Permapack AG
 Innorecycling AG	 Max Schwarz AG	 Swiss Recycling	 MP Multipack AG	 InnoPlastics AG

See more at www.evaluation-bioplastics.ch

Who lobbies for what? (1)

Partner	Main interest or concern
Federal environmental authorities	Compost and digestate without impurities for healthy soils
Federal energy authorities	As much energy as possible produced by anaerobic digestion
Association of Swiss Cities	Waste collection services without problems
Biomasse Suisse	High quality products without impurities and a high energy production
Bioplastics industry	Increasing the turnover, a good reputation

Who lobbies for what? (2)

Partner	Main interest or concern
Major dealers, fraction 1	Bioplastics has a negative ecobalance / life cycle assessment; no admission or when unavoidable
Major dealers, fraction 2	Admitted when products are designed according to roundtable consensus
Major dealers, fraction 3	Don't care for nothing
Plastic recycling companies	PET Recycling and other plastics recycling: Great fear of impurities

Result of the lobbying within the roundtable

- Consensus was found
 - First consensus 2004, 2nd version 2008, 3rd edition 2013, 4th edition 2016 (*edition 2013 available in German, French, Italian and English*)
- Enforceability
 - The consensus is not compulsory
 - Federal authorities are working on an positive list for admitted organic waste, partially based on the consensus 2016



Consensus on product descriptions for biodegradable materials in Switzerland Version: 12.04.2013

Detailed regulations / terms / abbreviations

What	Details
Bio-PET or Bio-PE	Standard plastics made partly or entirely from renewable raw materials which can be recycled in the same way as existing fossil fuels e.g. material recycling for PET drinks bottles
Bioplastics	Plastics made from renewable raw materials and/or bio-degradable
EN 13432	European standard which describes the testing methods for proving compostability (bio-degradability, disintegration, compost quality; there is no standard for the fermentation process)
Grid print	Description for packaging/products which can be recycled as part of the green waste chain: <ul style="list-style-type: none"> • Whole packaging/product (printed on front & back sides, one side) with grid print • Transparency of bags (not opaque, for visual content checks) • Lines crossed at 90 degree angle, line thickness 2-5 mm, line colour white/ green or free colour choice; lines clearly visible • Max. distance between lines of 4 cm • Grid print as lines or as written text (e.g. using the word 'kompostierbar', 'biodégradable' (compostable, biodegradable)) • Logo/lettering/advertising can take up max. 30% of overall space The Evaluation Bioplastics Committee should be contacted in cases of doubt.
MSWI	Municipal Solid Waste Incineration
PLA	Polylactic acid, a biopolymer often made from corn
TVA	Technical Ordinance on Waste, SR 814.600 ; currently under revision
VTNP	Ordinance on the elimination of animal by-products, SR 916.441.22
BAW	Biodegradable materials (German abbreviation)

There are several composting labels in accordance with EN 13432; Dincertco (www.dincertco.de) and Vincotte (www.vincotte.be) are 2 examples which are widely used in Europe. For the rubbish bag pictogram and more, see www.swissrecycling.ch/dienstleistungen.

Evaluation of Bioplastics Committee

If you require a more in-depth recommendation, you can order a product evaluation (CHF 2,500 for standard evaluations based on existing EN 13432). Evaluation is carried out by a small committee (incl. non-disclosure agreement). No evaluations are currently being carried out because the federal authorities are planning to issue a list of permitted input materials by decree. Exception: assessment of the planned layout of products for CHF 1,200 (see table of product types).

Members of the evaluation committee include:

- [Association of Swiss Composting and Methanisation Plants](#), Daniel Trachsel, Tel. +41 31 858 22 24, info@kompostverband.ch
- [Kommunale Infrastruktur](#), specialist organisation of the Swiss municipal authorities and the Swiss association of local authorities, Alex Bukowiecki, Tel. +41 31 356 32 42, info@kommunale-infrastruktur.ch
- [Swiss Recycling](#), umbrella organisation for recycling systems, Patrik Geisselhardt, Tel. +41 44 342 20 00, info@swissrecycling.ch

Should you have any further questions, the committee is happy to help. Please visit our website first: www.evaluation-bioplastics.ch.

- Introduction
 - EN 13432 certificates don't automatically mean acceptance in the biowaste chain
 - *Bioplastics are not welcome in field-side composting, will be forbidden by national regulation*
 - *The same goes for unattended collection points*
 - *In general, the treating plant has to decide whether it allows its municipalities the acceptance of bioplastics; the decision depends on the population structure and the experiences made*



Main contents of the consensus (2)

- Three main groups of bioplastics
 1. Bioplastic bags with printed grid generally admitted in the biowaste collection
 2. Bioplastic products of any kind only admitted in closed batches and on previous agreement with a treatment plant
 3. Bioplastics to be incinerated

For details see www.evaluation-bioplastics.ch

Main contents of the consensus (3)

- Layout of products generally admitted in the biowaste collection
 1. White grid on the whole product, max. 30% advertisement
 2. EN 13432 certificates printed
 3. Clear communication; preferred:
 - “*from renewable raw material*” **instead of**
 - “*compostable*” or “*biowaste collection*”

For details see www.evaluation-bioplastics.ch

White grid examples



Negative layout examples



- Conventional bags, sold at checkout of supermarkets
 - “100% Recycling-Plastic”
 - Landed en masse in biowaste

Revision of the consensus by the roundtable

- Acceptance of bioplastic plant pots (close vote!)
- Not revised e.g. for compostable...
 - coffee capsules / tea bags (*several producers*)
 - Nappies (*several dealers*)
 - bags for dog excrements / cat's litter box
 - beverage bottles (*several dealers*)
 - cigarette packs (*one producer*)
 - Boots (*two producers*)
 - Clothes (*one producer, several dealers*)
 - USB-Sticks (!) (*one dealer*)

- Almost single testing base in daily business; unrealistic long duration of the composting process, not including methanisation
- Contact 2016 with DinCertco: revision takes some 10 years; 2018: EN 15985
- Raw material
 - Oxo-biodegradable: Never admitted
 - PLA: problems in mesophile methanisation
 - Others: the roundtable has decided not to take position on ecological aspects, includes the proportion fossil – biobased in raw material

- Waste ordonnance
 - Packed biowaste is only allowed in biowaste treatment when packaging is biodegradable
 - Planned guideline allows input according to the nature of the raw products used

Practical experience with bioplastics (1)

- Positive example
- Negative example



Practical experience with bioplastics (2)

- Positive example
- Negative example



Practical experience with bioplastics (3)

• Impurities 2016

• Impurities 2017

Untersuchungsbefund

Untersuchungsbefund

2016 > 2017: one exclusive reason for the difference:
food leftovers in bioplastic bags are allowed

	Gew.-% d. TM	cm ² /l FM
Fremdstoffe, gesamt	0,005	0,16
- Anteil Folien	0,000	
- Anteil Hartkunststoffe	0,005	
- Anteil Glas	0,000	
- Anteil Metall	0,000	
- Anteil Sonstige	0,000	

Links: Glas und Metall

Rechts: Folien und Hartkunststoff

Abbildung: Visuelle Darstellung der Fremdstoffe in 1 l Untersuchungsprobe
Maßstab: 1 cm² entspricht 0,8 cm²

Bearbeitung durch: INFU mbH Geschäftsbereich PLANCO-TEC, Neu Eichenberg

	Gew.-% d. TM	cm ² /l FM
Fremdstoffe, gesamt	0,396	29
- Anteil Folien	0,219	
- Anteil Hartkunststoffe	0,102	
- Anteil Glas	0,024	
- Anteil Metall	0,051	
- Anteil Sonstige	0,000	

Links: Glas und Metall

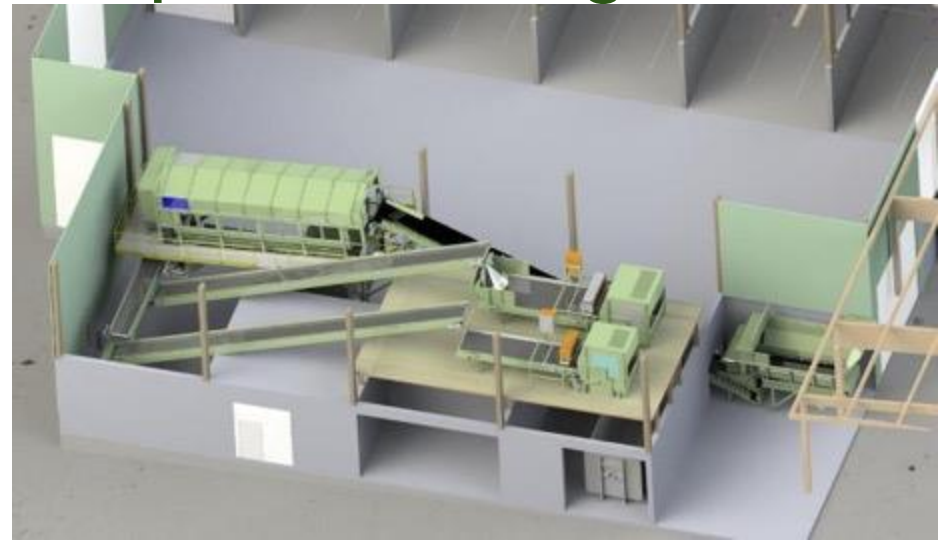
Rechts: Folien und Hartkunststoff



Abbildung: Visuelle Darstellung der Fremdstoffe in 1 l Untersuchungsprobe
Maßstab: 1 cm² entspricht 0,8 cm²

Practical experience with bioplastics (3)

- Input lake Geneva area since 2013
- Technological action, invest € 4 Mio. in optical sorting



What to do against impurities (1)

- Ban conventional plastics
 - Works +/- in neighbour countries, the fossil plastics lobby is too strong in Switzerland
- Force all involved to design bioplastic products according to the consensus
 - A step into the right direction
 - Free world trade makes enforcement impossible
 - In masses of input, grid material can't always be distinguished from conventional plastic

What to do against impurities (2)



What to do against impurities (3)

- Penalize those who ignore the rules
 - Traffic light system, stickers on containers
 - Needs active involvement of the municipality
 - Quite successful, except in densely populated areas



What to do against impurities (4)

- Impurities detector
 - Detects metal as an indicator of impurities
 - Successful in Germany with impurities up to 6%; (still) lower quota in Switzerland



current
detectors

What to do against impurities (4)

- Impurities detector



What to do against impurities (4)

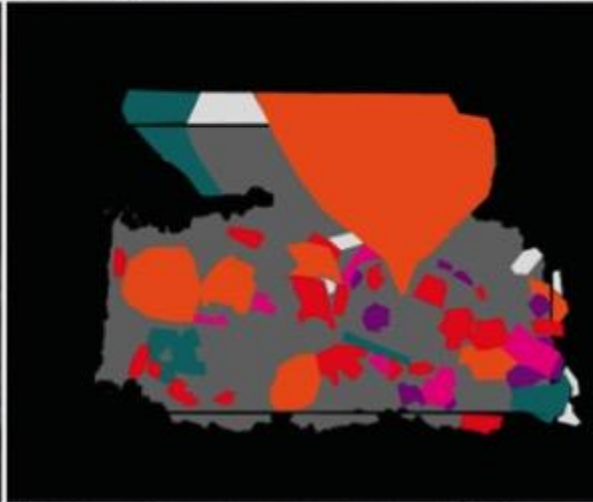


What to do against impurities (4)

Real



Mensch



Maschine



Recommendations for the bioplastics industry (1)

- Key message
 - The biowaste recycling industry fights for its right to exist
 - *Impure final products have to be burnt instead of closing the cycle of organic material*
 - *If you have to incinerate the final product, it's easier to skip the process of composting / fermentation: the separate collection of organic waste can be abandoned*
 - *The industry ceases to exist*
 - Don't fight against the industry; take their concerns seriously

Recommendations for the bioplastics industry (2)

- Think of what happens with your products after their use
 - When used by consumers, clearly instruct the disposal channel, clearly mark the whole product in a branch-wide uniform way
 - Rather campaign with “made of renewable raw material” than “compostable” to reduce the incitement to misthrows
 - Only campaign with “compostable” for products that in a general perception naturally go into this disposal channel (e.g. no bottles or USB-Sticks)

Recommendations for the bioplastics industry (3)

- Favour business-to-business
 - E.g. agreement between packaging industry and wholesalers: prepacked food completely from bioplastics material; no disposal problems when unsold products go to the biowaste industry
 - Don't campaign the customers with bioplastic benefits, campaign the retail market with easier and cheaper disposal of expired groceries

Recommendations for the bioplastics industry (4)

- Build up an own system of retrologistics
 - Your industry overcomes competitive barriers and organizes its own bioplastics waste disposal logistics
 - *e.g. compostable coffee capsules or tea bags will never be accepted in the municipal biowaste collection: They are too small to ever be distinguished from conventional capsules; collect them at the sales points upon agreement with a treating plant*
 - *Bioplastics waste of any kind can be collected in such a system*
 - The bioplastics industry and the biowaste industry can finally live together in peace

Thank you for your attention

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