



QAS activity Report 2018

Kompost & Biogas Association Austria

The Austrian Compost & Biogas Association (KBVÖ) is the umbrella organisation of 5 provincial organisations situated in Tyrol, Styria, Upper and Lower Austria and Carinthia which are in operation since the early 1990ies. From the very beginning their scope was to provide competent extension work and planning and operational assistance to the composting industry as well as accompanying the communication with authorities.

The KBVÖ represents more than 460 compost and biogas plants covering all provinces of Austria. The KBVÖ is a member of:

- ECN (European Compost Network)
- EBA (European Biogas Association)
- ELSA (European Land and Soil Alliance)
- Dt. Fachverband Biogas (German Biogas Association)
- ÖGUT (Austrian Association for Environment and engineering)
- ÖWAV (Austrian Water and Wastemanagement Association)
- Fachvereinigung Bayerischer Komposthersteller e.V. (Federation of bavarian compost manufacturers)

With those organisations we share the aim to strengthen the decentralised compost and biogas production. We give a distinct preference to this strategy against centralised, large scale concepts entailing long distance transports or incineration of organic waste.

Since March 2005 KBVÖ operates the programme management biogas as part of the Austrian initiative klima:aktiv. Based on funds allocated to this programme the envisaged activities can be realised.

As the decentralised concept is mainly based on the idea that the treatment of separated organic waste is done by farmers. This contributes on one hand to an efficient recycling of the organic resources in the region of its origin and on the other hand the so-called agricultural composting scheme secures also the rural economies by creating additional income for the farmers.

With respect to composting technologies we promote a controlled process management in open windrow systems with the aim to minimise negative environmental impacts and emissions.

All members signed a self-obligation to comply with all regulatory requirements (water protection, state of the art of composting, compost application according to GAP rules, compost ordinance etc.).

Quality assurance

In Addition to the legal obligations the KBVÖ provides a mandatory comprehensive quality management and quality assurance scheme for its members. It is based on the Austrian standards (ONS2206-1 und -2, sowie auf der technischen Richtlinie ONR192206).

The legal frame for compost is embodied by the compost ordinance 2001 as well as the Abfallwirtschaftsgesetz 2002 (waste management law). More-over there are different standards

which address the composting, as the QA ÖNORM S22006-1 and -2, the ONR192206, but there are also regulations as the minimum standards for open windrow composting and the guideline state of the art of composting. The permitted input materials for composting can be found in the compost ordinance, also the frequency of the external quality monitoring depending on the amount in m³ of produced compost.

The procedure of the quality assurance of the KBVÖ is included in the agenda, rule sheet 12 of the association. The handling of deficiencies as well as the documentations of plant visits is also part of the agenda, rule sheet 12. The frequency of plant visits by the external auditor depends on the input amount into the compost plant, like mentioned in the following table.

Table 1: Frequency plant visits (source: agenda of the KBVÖ)

Input t/a (rounded) Bulk weight 0,5 t/m ³	Quantity of plant visits
< 500	1* in 3 Jahren
500 – 1.499	1* / Jahr
1.500 – 4.000	3* in 2 Jahren
> 4.000	2* / Jahr

Each compost plant – as a member of KBVÖ and depending on the yearly throughput – is controlled on a regular basis. Composting plants which produce less than 150 m³ compost per year, are controlled or certified on a voluntary basis. All other plants are controlled with unannounced on-site visits. Within the external on-site inspections are also the material fluxes assessed for their plausibility. The on-site inspection is carried out by a contracted company which prepares the inspection report including recommendations for the quality committee with respect to eventually necessary adaptations, sanctions or approval of the related plant. The quality committee decides on sanctions, awarding or withdrawal of the KBVÖ quality label.



image 1: Quality label (old version, new is in progress)

The so-called external quality approval is the regular sampling and analysis of a compost batch by an acknowledged laboratory. A list of acknowledged laboratories which have to participate in compost ring tests on a regular basis is published on the homepage of the KBVÖ (www.kompost-biogas.info).

The illustration 1 shows the quality label but this is in order to be revised. Acknowledged and quality certified facilities may present the QA sign of the KBVÖ at the site of the plant and use it within their product presentation and branding as well as on their media.

On the reference date 1st of July 2018 there are 266 compost facilities members of the KBVÖ. Thereof are 123 plants located in Upper Austria, 54 in Styria, 48 in Lower Austria, 25 in Tyrol, 9 in Carinthia, 4 in Burgenland, 2 in Vienna and one each in Salzburg and Vorarlberg. The size of facilities varies between very small plants to plants with 20.000 to input material.

186 (without Tyrol) of the total 266 compost plants have been inspected and controlled according to the KBVÖ control scheme in 2017. With the exception of a voluntary participation, facilities with less than 150 m³ per year compost produced were not included in the external QAS in 2016. The control of this system as well as the entry of the data is done by the responsible management officer. 95% of the on-site controls were positive.

Suitable waste materials and its quality requirements, final product criteria for quality compost, compost, sludge compost are ruled by national legislation (above all by the Austrian Compost Ordinance).

It includes also requirements regarding:

- Compost designation and specification
- Waste materials (waste codes) with approved origin
- Type and frequency of quality measurements for certain input materials
- Type and schedule of records and documentation
- Receipt control.

In Austria the quality requirements of input materials for composting, the products like quality compost, compost or quality sludge compost are defined and regulated.

Of the in the quality assurance scheme participating plants were about 210.000 to compost produced in the year 2016. Thereof 150.000 to were labelled as quality compost A+, 13.500 to as quality compost A and 42.000 to as quality sewage sludge compost. The remaining 5.000 to were other (sewage sludge) composts.

The whole takeover amounted to slightly more than 554.000 to in 2016. Thereof about 212.300 to are biowaste (SN 92401, 92150, 92499), 247.000 to green waste (SN 92105, 92102, 92116, 92110, 92201, 92410, 92106) and 62.000 to municipal quality sewage sludge. The rest consists of other input materials (food and semi luxury food of plants, fruit- and vegetable leftovers, flowers, earth, plant ashes etc.)

In 2016 42 of the QA committed plants treated exclusively green waste and remnants (including solid and liquid dung). 20 of the member plants treated sewage sludge in 2016.

The common composting technique in Austria is the open windrow composting.

The following table shows the values of parameters of the compost plants, 135 analyses of 2016 were taken into account.

table 2: Distribution of parameters from the external quality control 2016

			Average	Median	25% Quantil	75% Quantil	95% Quantil
<i>Organic substance</i>	<i>dry</i>	%	33,18	32,60	26,01	38,70	50,79
<i>conductivity</i>		mS/cm	2,19	2,00	1,44	2,70	4,14
<i>pH-value</i>		-	7,56	7,62	7,36	7,82	8,12
<i>Moisture</i>		g/l	762	830	750	890	1022
<i>Density</i>							
<i>Dry substance</i>		%	59,31	59,67	52,50	67,33	73,26
<i>Fibre</i>		%	0,05	0,01	-	0,08	0,19
<i>Plastics</i>		%	0,01	-	-	-	0,08
<i>Metals</i>		%	0,03	-	-	0,04	0,13
<i>Glas</i>		%	0,02	-	-	-	0,13
<i>Nitrogen</i>		%	1,69	1,52	1,31	1,84	2,29
<i>C/N</i>		-	12,29	12,00	11,00	14,00	17,00
<i>Carbonate</i>		%	11,05	10,30	5,77	13,73	22,63
<i>Potassium</i>		%	1,07	1,06	0,81	1,33	1,66
<i>Phosphate</i>		%	0,56	0,40	0,27	0,54	1,51

<i>Lead</i>	mg/kg	24,35	21,50	18,10	26,20	45,20
<i>Cadmium</i>	mg/kg	0,49	0,47	0,39	0,58	0,77
<i>Chromium</i>	mg/kg	26,40	24,20	21,00	29,74	41,06
<i>Copper</i>	mg/kg	46,79	41,30	31,00	53,40	101,60
<i>Nickel</i>	mg/kg	20,93	19,40	16,00	23,20	37,00
<i>Mercury</i>	mg/kg	0,17	0,13	0,10	0,20	0,39
<i>Zinc</i>	mg/kg	166,60	155,00	120,30	184,00	326,40

From 100 of the 136 analysis the plant tolerance was monitored:

table 3: Distribution of parameters regarding plant tolerance

compost addition		Average	Median
15%	Germinal rate in %	70	97
30%	Germinal rate in %	68	92
15%	fresh plant substance %	72	100
30%	Fresh plant substance %	66	92
15%	Germinal delay in days	0	0
30%	Germinal delay in days	0	0

For the quality assurance of 2016, 163 compost plants got the quality label. 106 plants did not match the requirements and thus were not certified. In the years 2017 and 2018 six first evaluations were carried out.

On the 5th of March 2018 the last QA council meeting took place, the next one is planned for the mid of August 2018. For the first time the so called internal audit took place on the 19th of June 2018.

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QS-Beauftragte
Kompost & Biogas Verband