

# Presentation of the Kompostgüteverband Österreich

6.11.2014

## Contents

Presentation of the Kompostgüteverband Österreich .....	1
1. Quality Assurance Organisation .....	2
Board of Directors.....	3
Quality-label commission of Kompostgüteverband.....	5
2. Quality requirements and monitoring system by KGVÖ .....	7
The quality assurance system comprises the following elements.....	7
Main elements of the KGVÖ QAS are: .....	7
Sanitation requirements .....	8
Quality classes .....	8
Law	8
3. Activity report 2012 .....	9
Plant inspection .....	10
Laboratory qualification system .....	10
List of approved laboratories .....	10
Compost quality .....	10
Market report.....	11
4. Requirements for composting plants.....	11

## 1. Quality Assurance Organisation

Due to the current development in 1994, in the field of recycling of organic waste in Austria a proponent committee was constitute to establishing the “Kompostgüteverband Österreich”.

The goal of the association should be, marking in Austria produced high quality compost products with a compost quality-label. The label should promote marketing, based on objective quality standards (e.g. ÖNORM S 2200).

On occasion of a first general briefing on 02.03.1994 representatives of municipal and private compost plant operators have called for the establishment of the association.



*Figure 1: Quality label of KGVÖ*

## Board of Directors

### Chairman:

Dipl.-Ing. Erwin Binner  
Universität für Bodenkultur,  
Department für Wasser - Atmosphäre - Umwelt  
Institut für Abfallwirtschaft  
1190 Wien, Muthgasse 107  
Tel.: 01/318 99 00 - 0  
Fax: 01/318 99 00 - 350  
E-Mail: [erwin.binner@boku.ac.at](mailto:erwin.binner@boku.ac.at)

### Vice Chairman

Ing. Andreas Zöscher  
Mürzverband  
8605 Kapfenberg, Linke Mürzzeile 20  
Tel.: 03862/227 40 - 0  
Fax: 03862/265 03  
E-Mail: [mv.kapfenberg@muerzverband.at](mailto:mv.kapfenberg@muerzverband.at)

### Treasurer

DI Hans Herbert Klein  
Abwasserreinigungsanlagen - Betreiber GmbH  
6322 Kirchbichl, Klärwerkstraße 1  
Tel.: 05332/88263  
Fax: 05332/88263-14  
E-Mail: [leitung@arab-kirchbichl.at](mailto:leitung@arab-kirchbichl.at)

### Secretary

DI Wojciech Rogalski  
Magistrat der Stadt Wien, Magistratsabteilung 48  
1050 Wien, Einsiedlergasse 2  
Tel.: 01/58817-0  
Fax: 01/58817-99  
E-Mail: [rog@m48.magwien.gv.at](mailto:rog@m48.magwien.gv.at)

### Vice secretary

Mag. Gerhard Ziehenberger  
Saubermacher Dienstleistungs AG  
8073 Feldkirchen bei Graz, Hans-Roth-Str. 1  
Tel.: 059/800-8001  
Fax: 059/800-5599  
E-Mail: [g.ziehenberger@saubermacher.at](mailto:g.ziehenberger@saubermacher.at)

Advisory Council

O. Prof. DI Dr. Peter Lechner  
Tel.: 0664/3189900  
E-Mail: [peter.lechner@boku.ac.at](mailto:peter.lechner@boku.ac.at)

Advisory Council

Dr. Gudrun Gstraunthaler  
Abfallbeseitigungsverband Westtirol  
6426 Roppen, Industriegebiet 2  
Tel.: 05417/5177  
Fax: 05417/5177-16  
E-Mail: [gg@abv-westtirol.com](mailto:gg@abv-westtirol.com)

Advisory Council

DI Dr. Karl Hagspiel  
Trinodis OG  
6850 Dornbirn, Am Kehlerpark 1, TOP 40 B  
Tel.: 05572/204741  
E-Mail: [karl.hagspiel@b-u-e.eu](mailto:karl.hagspiel@b-u-e.eu)

Advisory Council

DI Guntram Alge  
wpa Beratende Ingenieure GmbH  
6850 Dornbirn, Schulgasse 22/B15  
Tel.: 05572/54003-21  
Mobil: 0664/262 41 66  
E-Mail: [guntram.alge@wpa.at](mailto:guntram.alge@wpa.at)

Managing Direktor

Ing. Horst Müller  
Müller Abfallprojekte GmbH  
4675 Weibern, Hauptstraße 34  
Tel: 07732/2091-0  
Fax: 07732/2091-44  
E-Mail: [horst.mueller@mueller-umwelttechnik.at](mailto:horst.mueller@mueller-umwelttechnik.at)

Quality-label commission of Kompostgüteverband

Dipl.-Ing. Erwin Binner  
Universität für Bodenkultur  
Department für Wasser - Atmosphäre - Umwelt  
Institut für Abfallwirtschaft  
1190 Wien, Muthgasse 107  
Tel.: 01/318 99 00 - 0  
Fax: 01/318 99 00 - 350  
E-Mail: [erwin.binner@boku.ac.at](mailto:erwin.binner@boku.ac.at)

Ing. Andreas Zöscher  
Mürzverband  
8605 Kapfenberg, Linke Mürzzeile 20  
Tel.: 03862/227 40 - 0  
Fax: 03862/265 03  
E-Mail: [mv.kapfenberg@muerzverband.at](mailto:mv.kapfenberg@muerzverband.at)

Mag. Gerhard Ziehenberger  
Saubermacher Dienstleistungs AG  
8073 Feldkirchen bei Graz, Hans-Roth-Str. 1  
Tel.: 059/800-8001  
Fax: 059/800-5599  
E-Mail: [g.ziehenberger@saubermacher.at](mailto:g.ziehenberger@saubermacher.at)

Dr. Gudrun Gstraunthaler  
Abfallbeseitigungsverband Westtirol  
6426 Roppen, Industriegebiet 2  
Tel.: 05417/5177  
Fax: 05417/5177-16  
E-Mail: [gg@abv-westtirol.com](mailto:gg@abv-westtirol.com)

Nowak Annemarie, öffentlich-rechtlicher Vertreter  
Abfallwirtschaft und Strommanagement  
1110 Wien, Johann Petrak Gasse 7  
Tel.: 01/4000-48941  
Fax: 01/4000-48950  
E-Mail: [annemarie.nowak@wien.gv.at](mailto:annemarie.nowak@wien.gv.at)

Univ. Prof. Dr. Peter Lechner, wissenschaftlicher Vertreter  
Tel.: 0664/3189900  
E-Mail: [peter.lechner@boku.ac.at](mailto:peter.lechner@boku.ac.at)

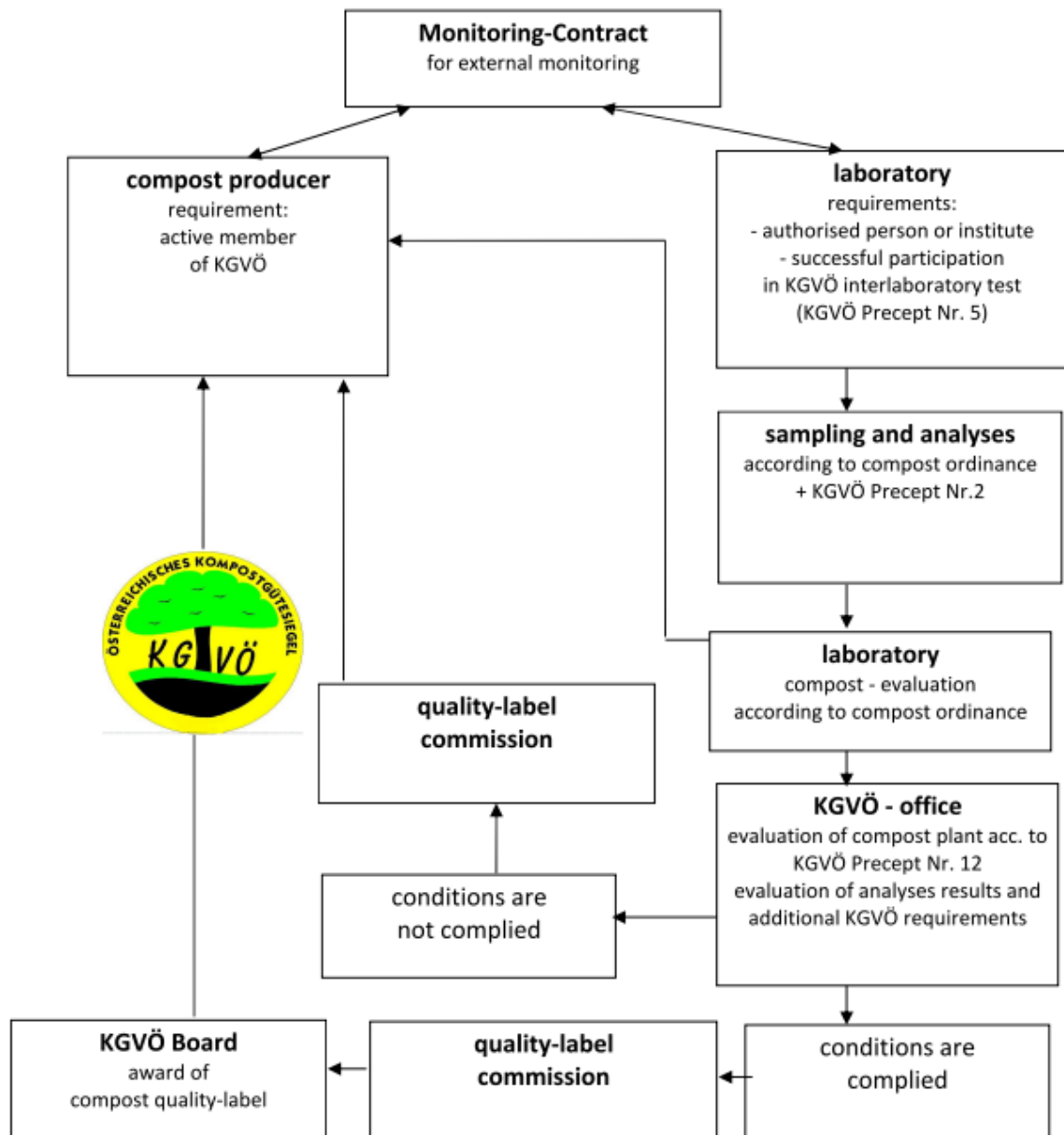


Figure 2: Course of Quality Assurance by KGVÖ

The following figure shows the formation of the quality-label commission of the KGVÖ.

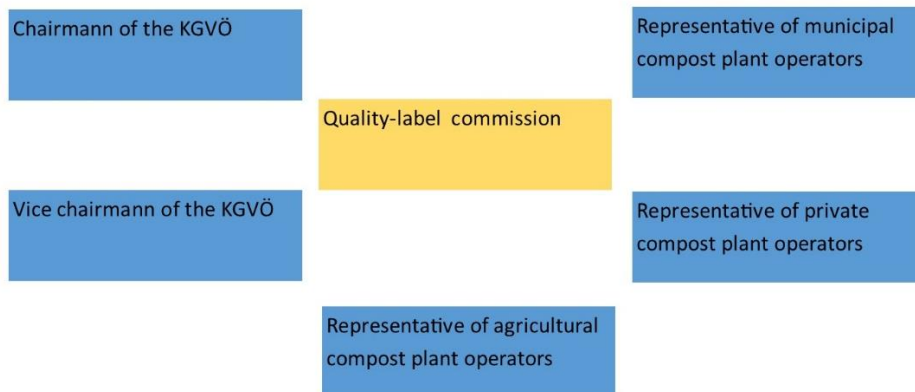


Figure 3: Formation of the quality label commission

## 2. Quality requirements and monitoring system by KGVÖ

The quality assurance system comprises the following elements:

- external monitoring: continuous and independent control of product quality; documentation by a product certificate;
- internal monitoring: control and documentation of the treatment process by the plant operator;
- on-site visit by the appointed quality manager;
- quality criteria: standardisation of the product quality;
- quality label: characterisation of the product quality;
- compulsory declaration: description of the essential product characteristics and constituents;
- application guidelines: information on correct application;
- furnishing proof and the documents required by the plant operator to show treatment according to the compost characterisation

Main elements of the KGVÖ QAS are:

- suitable input materials in accordance with the compost prescription;
- operation control by plant visits of independent quality managers;
- control by independent sampling and by declaration in analysis report;
- independent analysis and declaration of the product quality 1 - 12 times a year (depending on the amount of input material), according to the quality guidelines,
- control and sanctions by an independent quality-label commission;
- certification with product declaration according to the:
  - application requirements based on the compost characterisation;
  - application requirements due to good practical use

## Sanitation requirements

In Austria it is only allowed to sell compost as a product, if production takes place according to the compost ordinance. Harmful influences on human beings, animals and plants, which may arise when compost is applied, must be eliminated during the biological treatment process.

For verification of sanitation several variants of the temperature-time regimes are available.

Table 1, Sanitation requirements

Minimum Temperature	Duration - Records
<b>Open and enclosed Windrows (including halls) +/- forced aeration</b>	
55 °C	Automatic, continuous recording with probe; minimum temperature to be met over a time span of 4 hours, each after 5 mechanical turnings; total recording period: 10 days
55 °C	Discontinuous recording at least once per working day*; minimum temperature to be met on all recording days, within a total recording period of 10 days; at least 3 mechanical turnings
60 °C	Discontinuous recording at least once per working day*; minimum temperature to be met on 3 x 3 recording days, within a total recording period of 14 days; at least 2 mechanical turnings
65 °C	Discontinuous recording at least once per working day*; minimum temperature to be met on 2 x 3 recording days, within a total recording period of 14 days; at least 1 mechanical turning
<b>Enclosed and in-vessel systems with forced aeration (e.g. boxes, tunnels)</b>	
55 °C	Automatic continuous recording with probe; minimum temperature to be met over a time span of 4 days within a total period of 10 days
65 °C	Automatic continuous recording with probe; minimum temperature to be met over a time span of 3 days within a total period of 10 days

\* The automatic, continuous recording with probes is permitted

## Quality classes

According to Austrian Compost Ordinance (2001) compost is classified into three quality classes, depending on the heavy metal content. The three classes are A+, A, B.

Table 2: Quality classes of composts

heavy metal	A+	A	B
Cd mg/kg DM	0,7	1	3
Cr mg/kg DM	70	70	250
Hg mg/kg DM	0,4	0,7	3
Ni mg/kg DM	25	60	100
Pb mg/kg DM	45	120	200
Cu mg/kg DM	70	150	500
Zn mg/kg DM	200	500	1800

## Law

Compost Ordinance (2001):

<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20001486>



### 3. Activity report 2012

2005 to 2012 the input into composting plants with KGVÖ quality label was approx. 148.106 Mg. In 2012 there were 8 composting plants producing compost with the KGVÖ quality label. Inputs ranged from the smallest plant of approx. 1.800 Mg/a to the biggest plant of approx. 104.200 Mg/a.

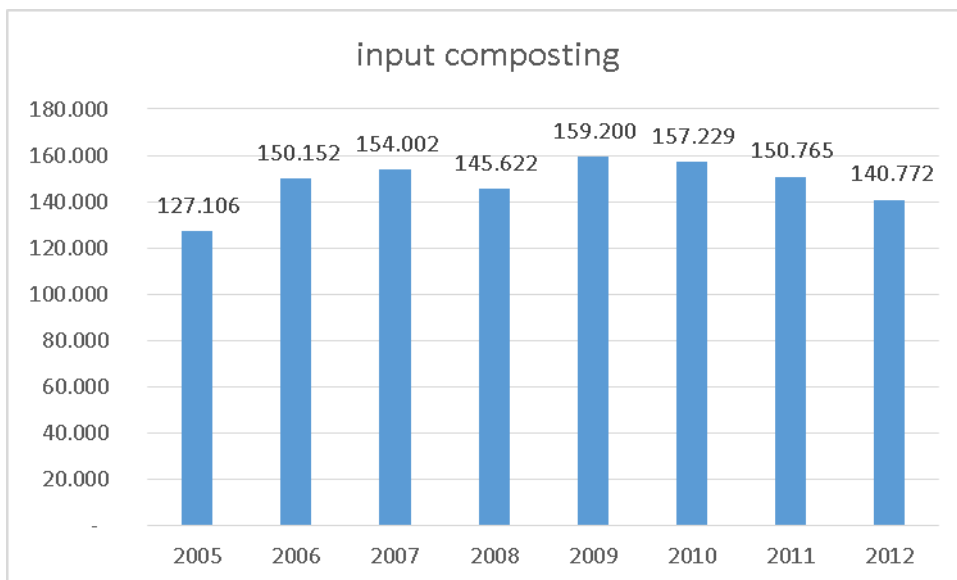


Figure 4: Input of compost plants with quality assurance by KGVÖ from 2005 until 2012

The compost production from 2005 until 2012 was 56.913 Mg per year. Four different types of compost were produced: quality compost A+, quality compost A, quality sewage sludge compost and sewage sludge compost B.

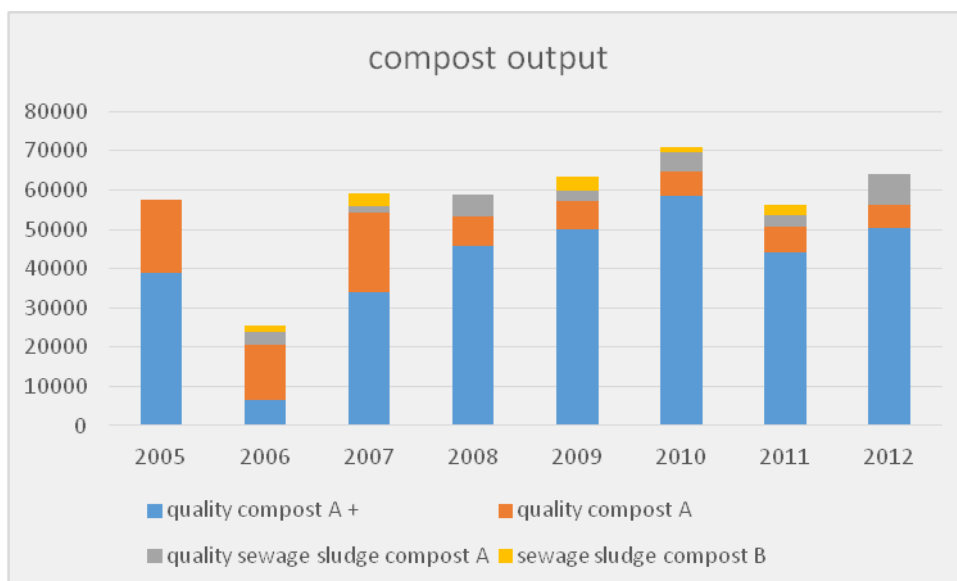


Figure 5: Compost production from 2005 until 2012

### Plant inspection

Each compost plant is visited once a year by the managing director and the quality manager. The annual inspection contends:

- actualising the "Regelblatt 12" (precept 12);
- checking the documentation;
- examination of analysis results;
- examination of the compost plant.

### Laboratory qualification system

Compost plants with the KGVÖ quality-label must have a monitoring contract with a laboratory, which is listed in the KGVÖ precept Nr. 5. Every four years a ring test is organized, and the laboratories, which pass the ring test, are listed in the KGVÖ precept Nr. 5.

### List of approved laboratories

The approved laboratories are listed in the KGVÖ precept Nr. 5 and on the KGVÖ homepage. 9 laboratories have passed the last ring test in the year 2013, thus only these 9 laboratories are allowed to analyse compost for the KGVÖ quality label.

### Compost quality

The result of the compost analyses of KGVÖ members from 2012 yield:

Table 3: Compost quality

Quality compost		Sewage sludge compost	
A+	A	A+	A
17	7	-	5

An actual overview about product quality in the year 2013 is given in the following table with the average and range of values.

Criteria: Compost 2012	Mean	25%quantile	Median 50%quantile	75%quantile	95%quantile
<b>Nutrients:</b>					
Nitrogen,total (N) [%DM]	1,7	1,50	1,7	1,87	2,1
Phosphate,total(P <sub>2</sub> O <sub>5</sub> )[%DM]	1,38	0,54	0,62	1,23	5,04
Potassium, total(K <sub>2</sub> O)[%DM]	1,41	1,19	1,45	1,69	1,80
<b>Physical criteria:</b>					
Bulk density [kg/l FM]	0,71	0,67	0,71	0,75	0,84
Dry matter [%]	61,60	54,70	62,71	69,49	75,42
Impurities > 2 mm [%DM]	0,015	0,00	0,01	0,014	0,0428
<b>Biological criteria:</b>					
Plant response (15% rel.)[%]	88,78	879,50	96,00	100,00	106,40
Plant response (30% rel.)[%]	81,17	74	82	98,00	100,00
<b>Chemical criteria:</b>					
Electrical conductivity [mS/cm]	2,19	1,70	1,97	2,48	4,08
pH	7,41	7,17	7,35	7,68	8,23
C/N ratio	13,43	12,67	13,24	14,00	15,76
<b>Hygiene:</b>					
Seeds [per litre]	0,072	0	0	0	0,594
Loss of ignition [%]	39,92	34,20	37,70	43,65	52,47

Carbonate CaCO <sub>3</sub> [%DM]	11,62	8,24	9,75	12,21	31,20
<b>Heavy metals:</b>					
Lead Pb [mg/kg DM]	30	22	31	36	47
Cadmium Cd [mg/kg DM]	0,346	0,26	0,31	0,39	0,59
Chromium Cr [mg/kg DM]	26	19	21	32	46
Copper Cu [mg/kg DM]	54	39	44	60	91
Nickel Ni [mg/kg DM]	20	14	16	20	43
Zinc Zn [mg/kg DM]	188	145	160	197	415
Mercury Hg [mg/kg DM]	0,17	0,135	0,16	0,19	0,26

### Market report

There are many different ways to sell compost. A huge amount of compost is used as organic soil amendment in agriculture. Another type of use is landscaping. Also a big amount of compost was sold to garden owners as fertiliser for their lawns and flowers.

## 4. Requirements for composting plants

Compost plants with the Austrian compost quality-label have to observe the KGVÖ precepts Nr.1-12 additional to the Austrian compost ordinance.