

COMPOST IS A PRODUCT IN AUSTRIA – 8 YEARS EXPERIENCE BY THE AUSTRIAN COMPOST QUALITY SOCIETY!

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1 INTRODUCTION

In the year 2001, after 5 years of intensive discussions and negotiations of governmental, non governmental and private institutions the Austrian compost-ordinance was established. Compost, produced from defined input materials, which fulfils the quality requirements of the compost – ordinance is a product which can be sold on the market under the condition, that the quality-class, content of main-/trace-elements and user recommendations are visible for the consumers.

The compost-ordinance was the first and not the final step to the end of waste solution in Austria. Since 2001 a lot of Austrian standards and technical reports have been revised. An important example for the need of ongoing adaption of the regulation is the implementation of the EU animal by-product regulation and its requirements by the definition of “good practice of composting” by a directive from the Federal Ministry of Agriculture, Forestry, Environment and Water Management.

Nevertheless compost is a product the conditions for the use of compost have to be proper. One negative example to hinder the use of compost is the Austrian fertilizer-ordinance. There the fertilizers and components, which can be brought to the market under this regulation, are defined. The regulation is from 1994 and allows as mixing component for pot plant substrates and soil improvers only compost from green areas. Compost of green areas is neither defined in the compost-ordinance nor in the definition of good practice of compost nor in the different standards. Hitherto it's impossible to use quality-compost for the before mentioned products when one of the input materials is source separate collected bio waste. A not at all satisfying solution for this problem was found by establishing standards for “earths” instead of “substrates” for pot plants, etc. and to define the use of these earths in the federal waste management plan as utilization.

One existing problem is the ban of compost for fertilizing sugar beat in Austria and another fact to question are the stringent limits for heavy metals for organic farming in Europe. It's not understandable to define compost as valuable resource for organic, main-nutrients, trace-elements, etc. and to set quality requirements which cannot be fulfilled in many cases even by using clean input materials. An opposite example is the use of phosphorous-fertilizers for organic farming. The limit for Cadmium in these fertilizers is 90 mg/kg P₂O₅ and much higher than the allowed content in class A compost which is not allowed for organic farming.

Many steps to establish compost as a product have been done. The target should be a common European solution with intensive efforts for proper conditions to use compost on soils in all member states.

2 COMPOST IS A PRODUCT

In 2001 a compost – ordinance was established in Austria which enabled the production of high quality compost as a product. The main achievement was to use defined and source separate collected waste-fractions as input-materials and to gain an “end of waste” status during composting by documentation of all mixing – partners and the whole composting process. Compost as a product can be sold on the market with easy to fulfil requirements for the documentation about the use of it. The producer has to inform about nutrients and heavy metals, the classification (B, A or A+, table 1) and recommendations for restricted use if for example the salt content is too high for the use as mixing components in pot substrates.

TABLE 1 Classification for compost

Parameter	Guidelines class B	Thresholds class B	Thresholds class A	Thresholds class A+
Cd	---	3,0 mg/kg DM	1 mg/kg DM	0,7 mg/kg DM
Cr	---	250 mg/kg DM	70 mg/kg DM	70 mg/kg DM
Hg	---	3,0 mg/kg DM	0,7 mg/kg DM	0,4 mg/kg DM
Ni	---	100 mg/kg DM	60 mg/kg DM	25 mg/kg DM
Pb	---	200 mg/kg DM	120 mg/kg DM	45 mg/kg DM
Cu	400 mg/kg DM	500 mg/kg DM	150 mg/kg DM	70 mg/kg DM
Zn	1200 mg/kg DM	1800 mg/kg DM	500 mg/kg DM	200 mg/kg DM

2.1. Background

In Austria the first steps in composting have been done in the middle of the 1970s. The idea was to reduce the amount of waste for land filling by aerobic treatment of mixed waste. The result was so called waste-compost with a lot of positive properties for the use on soil. One problem for the acceptance by consumers was the high content of glass- and plastic-particles even after screening it with 6 to 8 mm. Another hinder was the very low acceptance by the farmers because of glass-/plastic-particles and the discussion about heavy metals and other pollutants in “waste-compost”. In the years around 1980 a lot of research work was done by the producers of compost by the “university of soil science” and also by governmental institutes for soil and agriculture. The result have been standards for compost – analyses, quality – criteria, compost use on land and as a last standard quality criteria for input materials. At the end of the 1980s composting of mixed waste was step by step substituted by composting of source separate collected bio waste and green waste.

2.2. Steps to a compost ordinance

In the year 1996, one year after the compost quality society was founded, a long discussion between the agricultural and the environmental section of the ministry of agriculture, forest, environment and water affairs ended by the decision that a compost ordinance within the waste framework can be established. The first intention was to include compost regulations into the fertilizer law but there was no interest of agricultural experts to support the use of compost. Hitherto the fertilizer regulation restricts the use of compost to produce pot plant substrates or soil improvers. Only green waste compost is allowed as source for the production of soil improvers or substrates according to the fertilizer regulation.

The section for environmental affairs of the Austrian ministry found a legal way to develop a compost – ordinance within the Austrian waste – framework directive and so the first negotiations for a future solution were possible.

One important basis for the compost – ordinance were the different standards which were established during nearly 20 years standardisation work in working groups of the “Austrian Standards Institute”.

2.3. Effects of the compost ordinance

Until 2001 the permission for composting plants usually was based on environmental and water protection facts. Because input as well as output materials had the status of waste the balance of these materials was checked by the local authorities. The use of compost as “waste fertilizer” was allowed under the federal soil protection laws and was in most cases according to the regulations for sewage – sludge.

Since the compost – ordinance is valid the permission of the compost plants has additionally to be based on the different waste fractions which are allowed for producing compost as a product. Therefore it is important that any change of input material is controlled and to accept it only if it is in line with the requirements of the compost ordinance.

Following the new approach a lot of legal frameworks had to be changed. So for example the waste-register-ordinance, the waste-identification-ordinance, the federal waste-management-plan, etc. had to be revised to enable compost to be a product.

2.4. Future aspects for compost as a product

There have to be fulfilled a lot of requirements of the compost ordinance. Especially the documentation of input materials and the composting process produces a lot of data which has to be presented whenever the authority wants to have a look at it. Normally random supervisions can be done by the ministry or the local government. One way was to establish a quality assurance system which is voluntary for operators of compost plants. The rules for the QAS are defined in two standards (norms) and one technical report. The best way for compost plants to show the authority that the legal requirements are fulfilled and the compost quality is high is to take part in a QAS like the Austrian Compost Quality Society with its annual audits and to show the quality label which is a distinction for operating the plant well. To make documentation and audition as easy as possible during the last two years a lot of work was done to establish an electronic data base. In 2009 the data for a mass-balance for input- and output materials have to be uploaded to the database for the first time. The system is called "eBalance". In the future it is planned to enhance the system by "eCompost" for delivering all data required by the compost ordinance and "eCertificate" for electronic compost certificates visible for laboratories, compost plants, authority and QAS. Every participant in the electronic system has its own account and data are only visible by authorisation.

3 CONCLUSIONS

The Austrian solution to enable the use of compost, derived from defined waste fractions, as a product on the market was a big effort for the related sections of the ministry, for the operators of the compost plants and for the QAS organizations. After 7 years of practicing the new system the fortunes are visible. High quality compost can be used for many purposes without special restrictions. The acceptance of compost by farmers as well as consumers is high and the price development for mineral fertilizers during the last years should be a basis for interesting compost prices for the producers. To advance the use of compost by clear regulations for production and use helps to gain all the advantages caused by compost like increasing humus in soils, carbon sequestration, substitution of mineral fertilizers, increasing the regional economy and last but not least to reduce the amount of waste which has to be disposed.