

Biochar: More than carbon sequestration – the Austrian context

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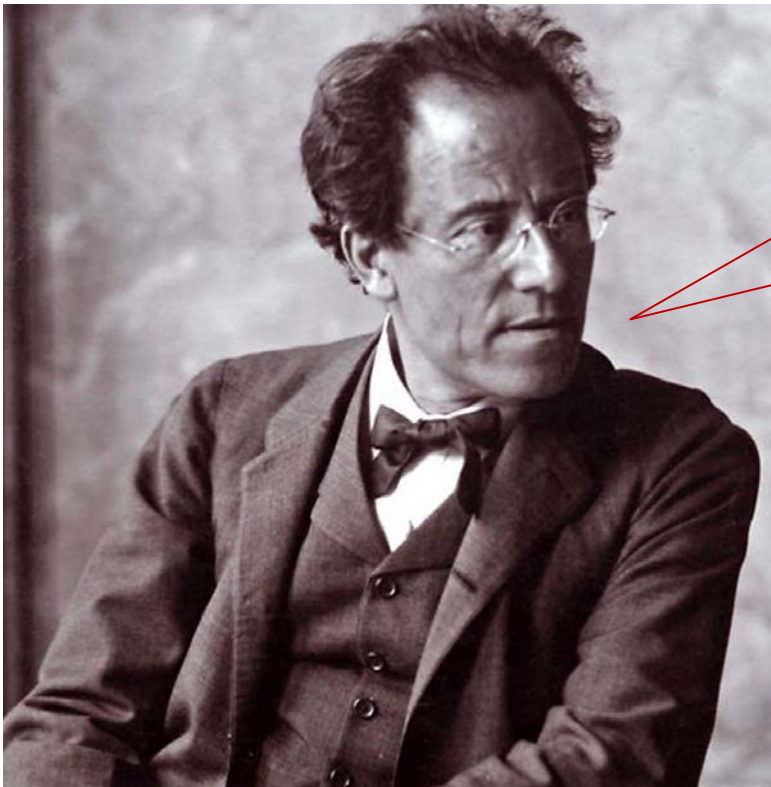
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Biochar boom all over the world. Also in Austria?



If the world perishes, move to Vienna; there everything happens 50 years later.

Hypothesis: Mahler was not right with respect to biochar

Gustav Mahler, Austrian composer and conductor (1860 – 1911)

Source: <http://www.bbc.co.uk/programmes/p01s98rl>

Charcoal burning is an Austrian tradition



Source: https://upload.wikimedia.org/wikipedia/commons/5/5c/Sl_Netphen-Walpersdorf_Kohlenmeiler_02.jpg

.... especially in the Alpine regions that supplied Vienna with charcoal



Source: Google Maps



Source: <http://www.reitanlage-badtennstedt.de/sennenhunde/zughunde.php>



50 – 60 km



Source: <https://www.wien.gv.at/>

Biochar & Austria nowadays?



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A happy relationship?



Biochar & Austria nowadays?



&



A fraught relationship?



Biochar & Austria nowadays?



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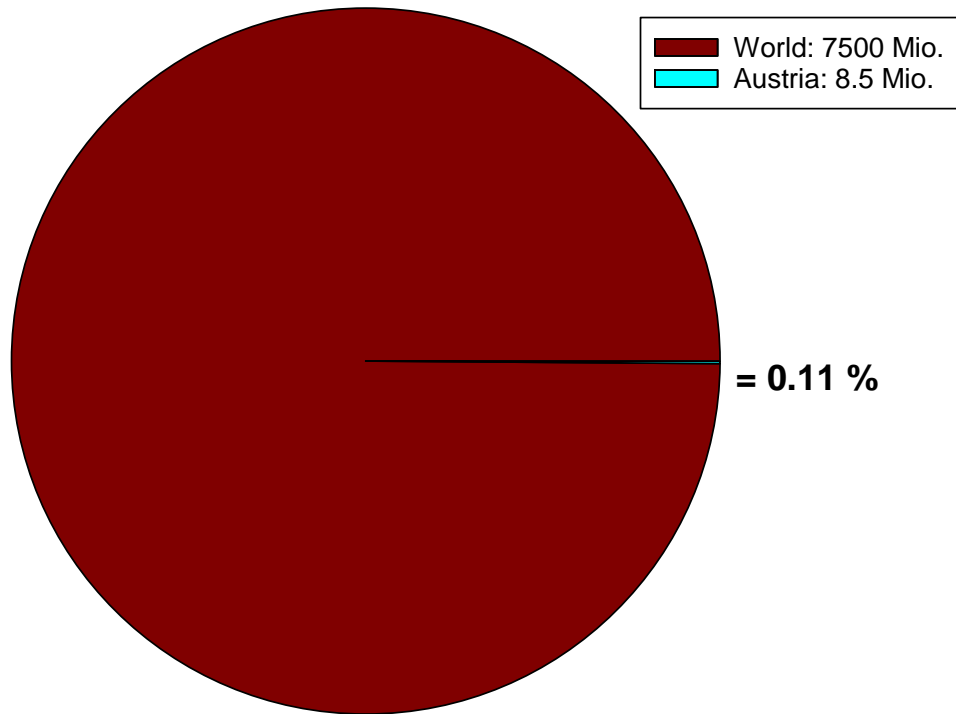


Or do they ignore each other?

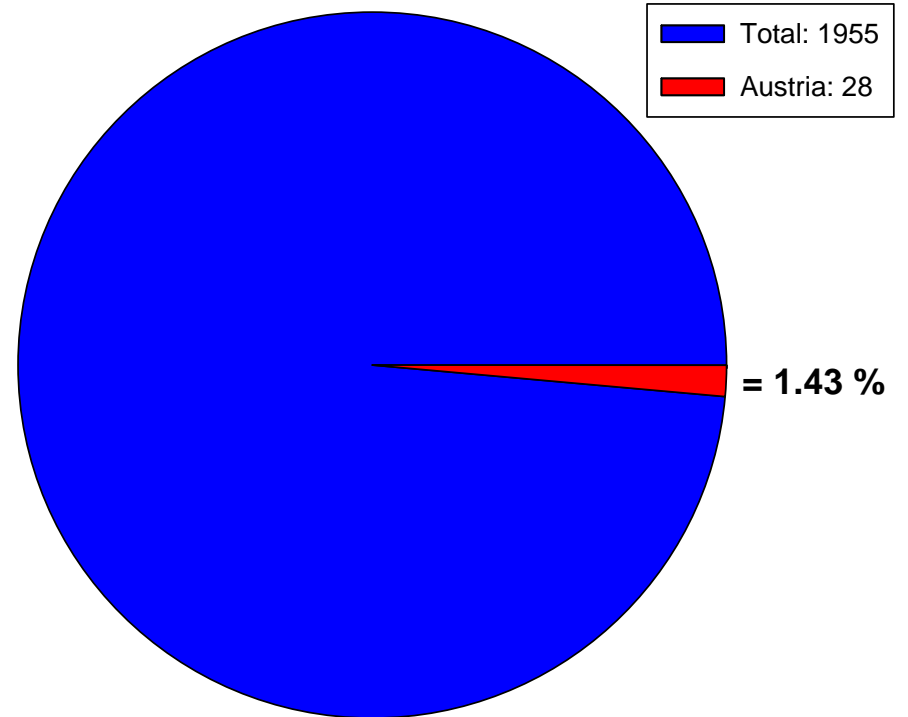


World population statistics Web of Science™ 1998 - 2016 2016

Population



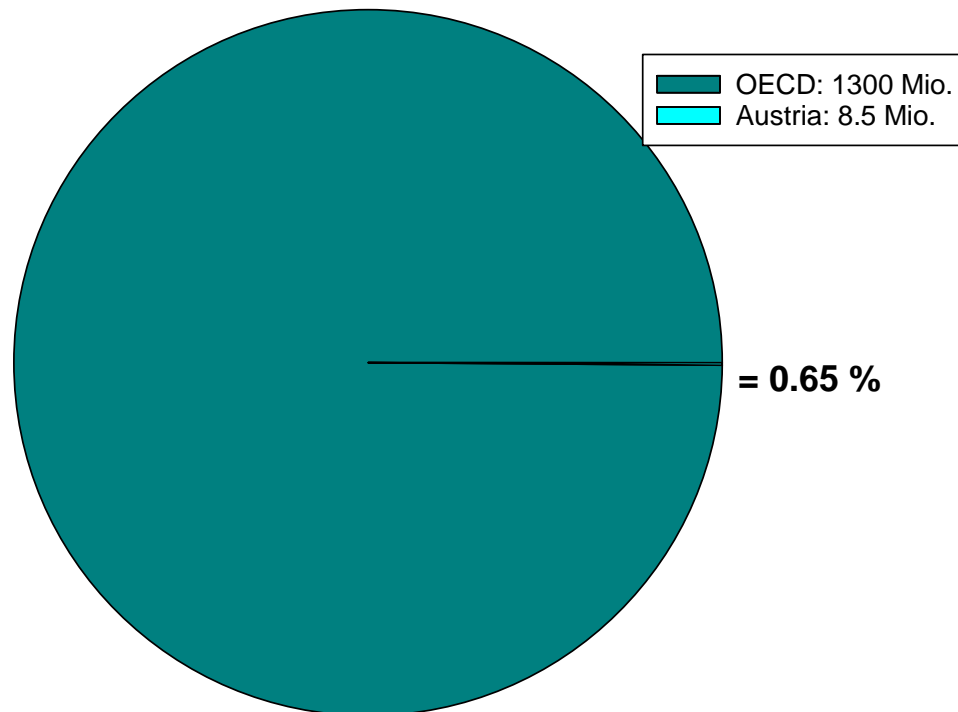
Articles with "biochar" as title word



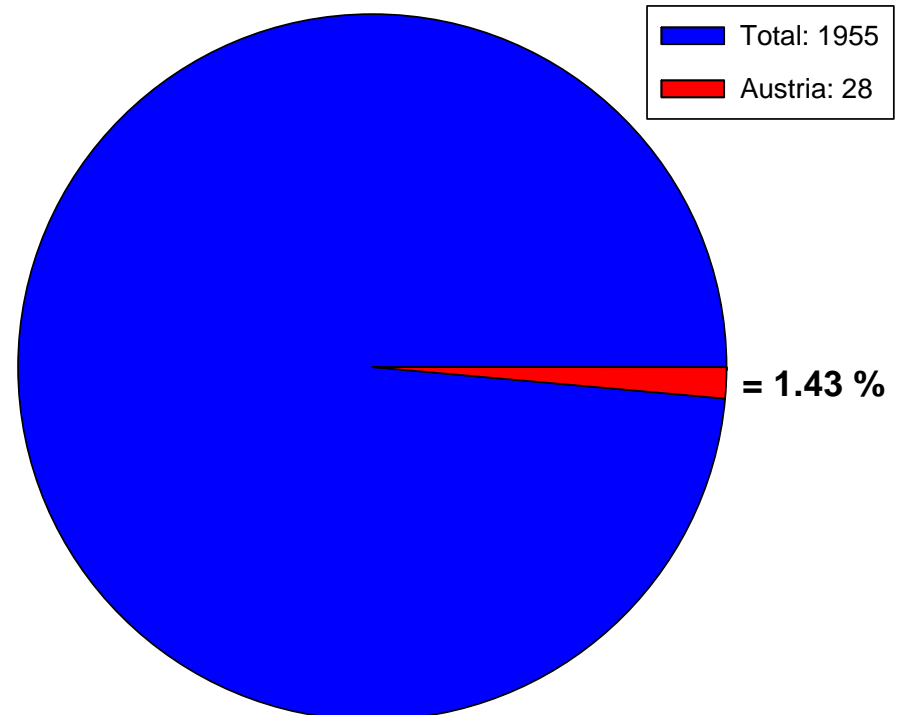
World population statistics 2016

Web of Science™ 1998 - 2016

Population OECD / Austria



Articles with "biochar" as title word

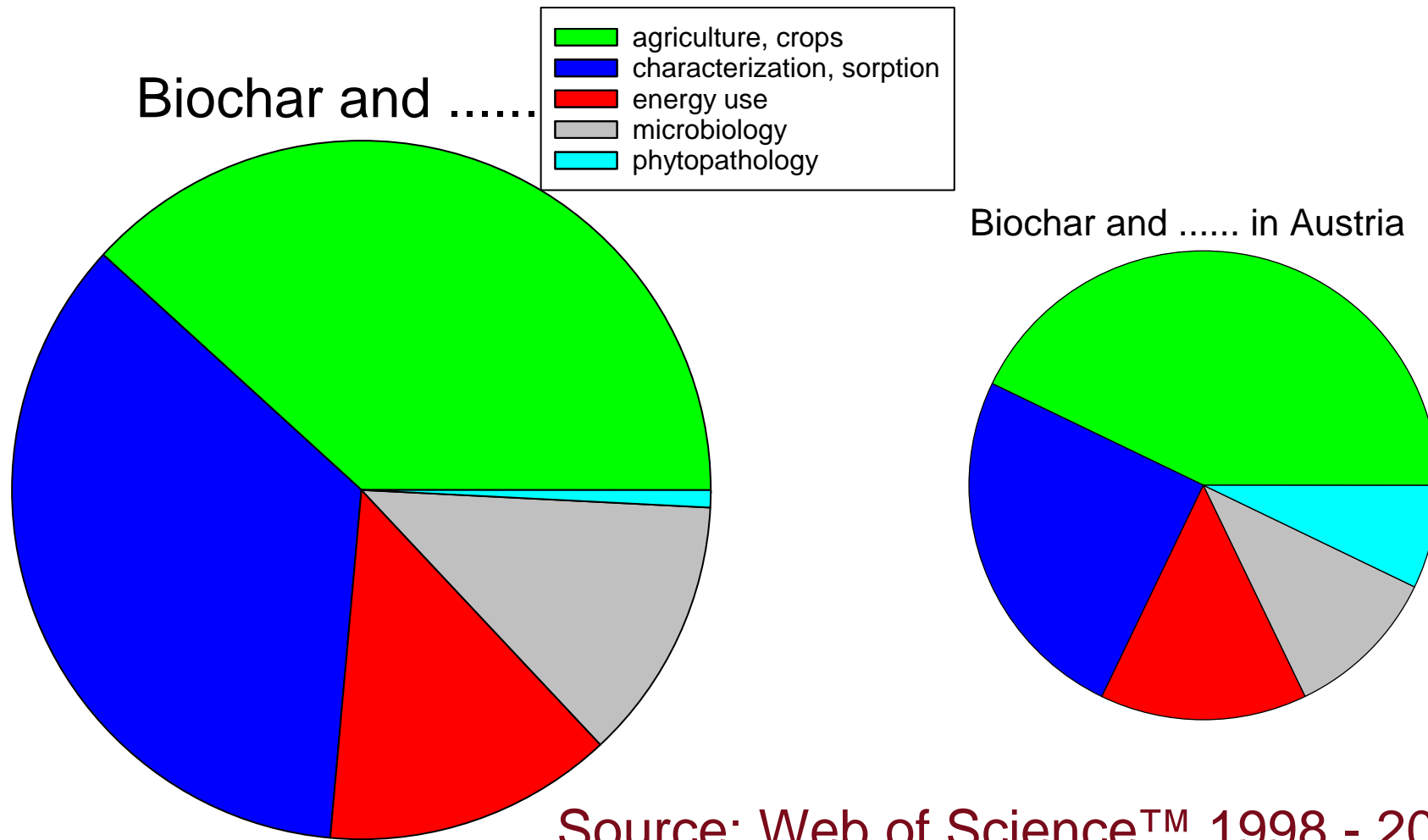


Austria seems not to lag behind

- **Hypothesis confirmed** (that G. Mahler was not right with respect to biochar)

But what are Austrian biochar researchers working about?

Topics studied in biochar research – globally and in Austria



Hotspots of biochar research in Austria



weinobstklosterneuburg.at
Unser Wissen trägt Früchte.



Universität für Bodenkultur Wien



SONNENERDE



Source: <http://www.mappery.com/maps-austria>

Applied biochar research in Austrian fields: farmers support science



Deep positioning (20 cm) of a biochar-slurry mixture

30 m³ slurry + 1 – 2 t biochar per ha

16 field experiments, mainly corn and pumpkin

Further information: Project ERKO, Ökoregion Kaindorf

Biochar as animal feed / pet feed



- A „feed char“ for
 - Pigs, cattle, chicken
 - Horses, cats, dogs
 - ...
- Recommended application:
 - 1 % of total feed

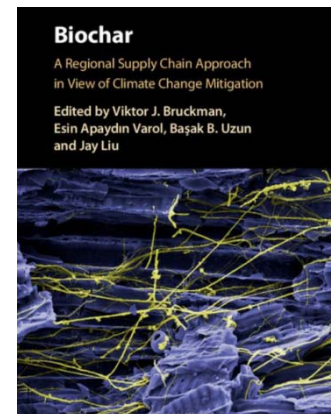


Source: <http://www.charline.at/>

Conclusion



not at least because of



Some Austrian specialities

- **Austrian standard for biochar quality, sampling and analytical methods close to completion**



VORSCHLAG

ÖNORM
S 2211-1

Ausgabe: 2015-11-23

199AG23_N0037_Vorschlag_prS_2211-1_2015-11-23

Pflanzenkohle

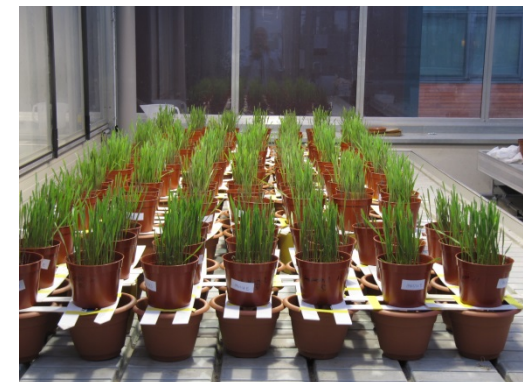
**Teil 1: Ausgangsmaterialien, Qualitätsanforderungen und
Untersuchungsmethoden**

Plant biochar — Part 1: ?? Quality requirements and test methods

- **Special report of the Austrian Advisory Council for Soil Fertility is being prepared about agricultural applications of biochar**

Outlook: future biochar research directions

- **Nutrient recycling:** Biochar from additional waste materials as secondary resource for N, P, micronutrients
- **Application techniques** for biochar
- Biochar as **growth substrate** / as interface of **C- and N-cycle**
- **Biochar for water filtering / wastewater purification**
- Biochar as **pollutant sorbent:** bespoke, surface-modified biochars for specific pollutant combinations; biochar composites





Thanks for your attention
(... and wishing you a
happy charring ...)

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