



World Biochar Certificate (WBC)

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WBC = EBC for the globe



Please cite as:
WBC (2023): World Biochar Certificate – Guidelines for a Sustainable Production of Biochar and its Certification.
Carbon Standards International, Frick, Switzerland, (<http://www.european-biochar.org>), version 1.0 from 15th
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www.european-biochar.org



Advantages of WBC

1. Valid all over the world, except EU and EFTA states
2. Strong requirements on biochar, incl. biomass feedstock, biochar properties, pyrolysis technology – sustainable production and no harm guaranteed!
3. Analytical parameters define the certification class of the biochar and its application (based on different national regulations, EBC and IBI)
4. WBC certified biochar can generate Carbon Sinks according to the EBC C-Sink Guidelines which are registered in our [Registry](#)



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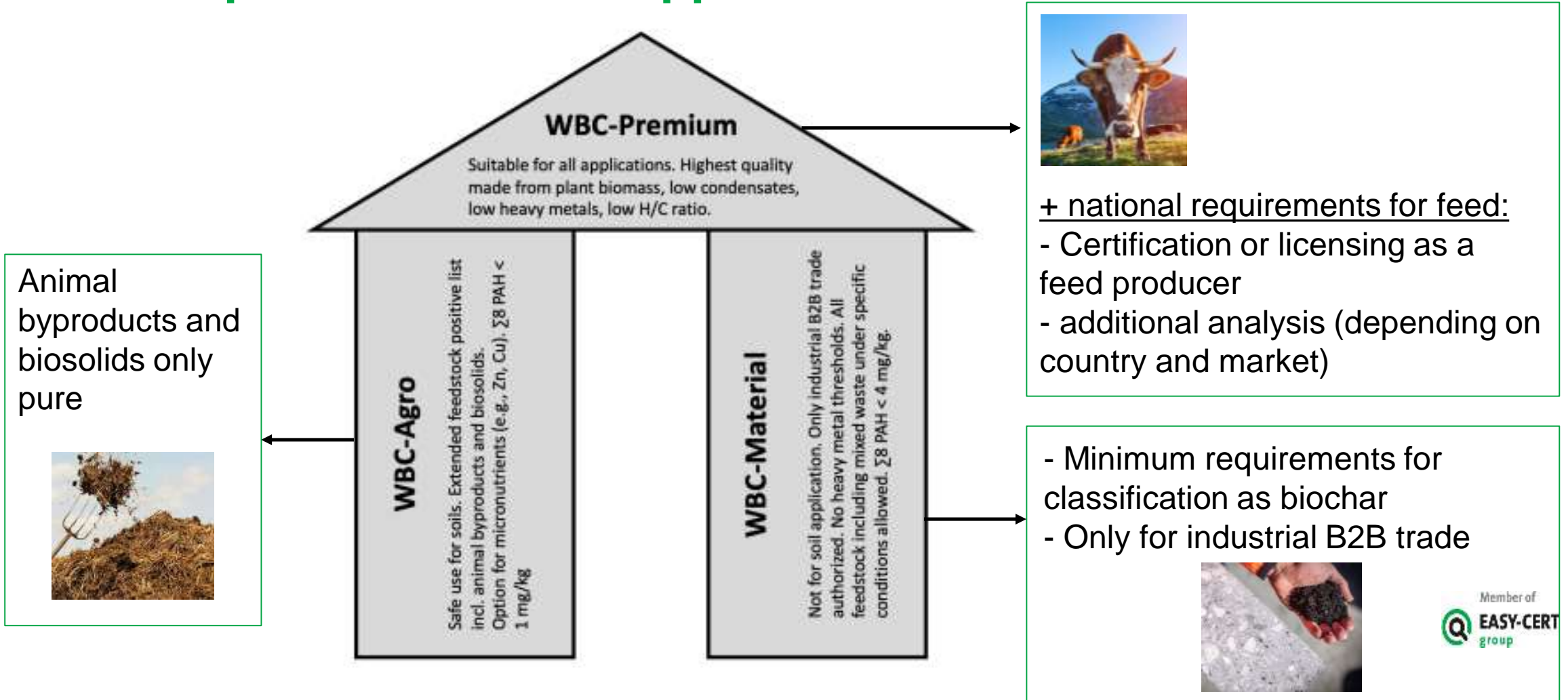
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Chapter 3: The WBC application classes





Chapter 3: The WBC application classes

	WBC-Premium	EBC-FeedPlus
Pb	120 g t ⁻¹ DM	10 g t ⁻¹ (88%DM)
Cd	1.5 g t ⁻¹ DM	0.8 g t ⁻¹ (88%DM)
Cu	140 g t ⁻¹ DM	70 g t ⁻¹ DM
Ni	50 g t ⁻¹ DM	25 g t ⁻¹ DM
Hg	1 g t ⁻¹ DM	0.1 g t ⁻¹ (88%DM)
Zn	420 g t ⁻¹ DM	200 g t ⁻¹ DM
Cr	100 g t ⁻¹ DM	70 g t ⁻¹ DM
As	13 g t ⁻¹ DM	2 g t ⁻¹ (88%DM)
16 EPA PAH	6 g t ⁻¹ DM	6 ± 2.4 g t ⁻¹ DM
8 EFSA PAH	1 g t ⁻¹ DM	1 g t ⁻¹ DM

Chapter 3: The WBC application classes

	WBC-Agro	EBC-AgroOrganic	EBC-Agro	EBC-Urban
Pb	300 g t ⁻¹ DM	45 g t ⁻¹ DM	120 g t ⁻¹ DM	120 g t ⁻¹ DM
Cd	5 g t ⁻¹ DM	0.7 g t ⁻¹ DM	1.5 g t ⁻¹ DM	1.5 g t ⁻¹ DM
Cu	200 g t ⁻¹ DM	70 g t ⁻¹ DM	100 g t ⁻¹ DM	100 g t ⁻¹ DM
Ni	100 g t ⁻¹ DM	25 g t ⁻¹ DM	50 g t ⁻¹ DM	50 g t ⁻¹ DM
Hg	2 g t ⁻¹ DM	0.4 g t ⁻¹ DM	1 g t ⁻¹ DM	1 g t ⁻¹ DM
Zn	1000 g t ⁻¹ DM	200 g t ⁻¹ DM	400 g t ⁻¹ DM	400 g t ⁻¹ DM
Cr	200 g t ⁻¹ DM	70 g t ⁻¹ DM	90 g t ⁻¹ DM	90 g t ⁻¹ DM
As	20 g t ⁻¹ DM	13 g t ⁻¹ DM	13 g t ⁻¹ DM	13 g t ⁻¹ DM
16 EPA PAH	declaration	6 ± 2.4 g t ⁻¹ DM	6 + 2.4 g t ⁻¹ DM	declaration
8 EFSA PAH	1 g t ⁻¹ DM	1 g t ⁻¹ DM	1 g t ⁻¹ DM	1 g t ⁻¹ DM

Chapter 3: The WBC application classes

	WBC-Material	EBC- Consumer Materials	EBC- Basic Materials
Pb	<i>no limit values for certification declaration,</i>	120 g t ⁻¹ DM	<i>no limit values for certification declaration,</i>
Cd		1.5 g t ⁻¹ DM	
Cu		100 g t ⁻¹ DM	
Ni		50 g t ⁻¹ DM	
Hg		1 g t ⁻¹ DM	
Zn		400 g t ⁻¹ DM	
Cr		90 g t ⁻¹ DM	
As		13 g t ⁻¹ DM	
16 EPA PAH	declaration	declaration	declaration
8 EFSA PAH	4 g t ⁻¹ DM	1 g t ⁻¹ DM	4 g t ⁻¹ DM



Chapter 4: Biomass feedstock

- Positive list of permissible biomasses ([LINK](#))
Only biomass allowed, derived from photosynthesis, no fossil carbon
- Mixed waste with fossil carbon possible if properly tracked, approved by CSI.
- Land management for primary agricultural products should preserve soil organic carbon.
- Forest wood: PEFC/FSC certified or regional standards; provide a dossier to verify no clearcutting.
- Manure must meet WBC-Agro and WBC-Materials standards, pyrolysis at $>500^{\circ}\text{C}$ for 3 mins.



Chapter 6: Biochar Sampling

- One representative sample per batch
- Sampling plan is required
- Use e-learning for EBC sampling
- Factsheet – EBC sampling training ([LINK](#))



Chapter 7: Biochar Properties

No minimum biochar organic carbon (C_{org}) content defined.

But CSI has the right to exclude biochar with properties highly atypical of specified feedstock, e.g. wood gasifier ash with only 30% C_{org} .



Chapter 8: Pyrolysis technology

8.1 Biomass pyrolysis must be operated in an energy efficient manner.

8.2 Pyrolysis gases must be recovered or burned.

8.3 Syngas combustion must comply with national emission limit values.

8.4 Biochar production must be carbon efficient and waste heat should be used.

Chapter 8: Pyrolysis technology

Utilization of waste heat:

- Excess heat must be utilized to at least 70%.
- Transitional period: max. 3 years
Within this period a solution for efficient waste heat recovery must be developed.
- Exception for heat recovery is possible in rare cases, e.g. mobile pyrolysis for debris and waste biomass pyrolysis.

Chapter 11: Labelling



Mandatory information on biochar:

- certification class
- Organic carbon content
- H/Corg – ratio
- pH
- Dry weight
- Volume
- QR-code (available in EBC Portal)



Chapter 12: Control, quality management and certification

Onsite inspection 1x per year and certification of biochar and C-sink by



www.ceres-cert.de



Chapter 12: Control, quality management and certification

CARBON STANDARDS international

Certification according to European Biochar Certificate (EBC) and World Biochar Certificate (WBC)

Certification process according to European Biochar Certificate (EBC) and World Biochar Certificate (WBC)

Process Flow – new operator
Time frame from inspection to certification, biochar and carbon sink potential can be sold after first certification.

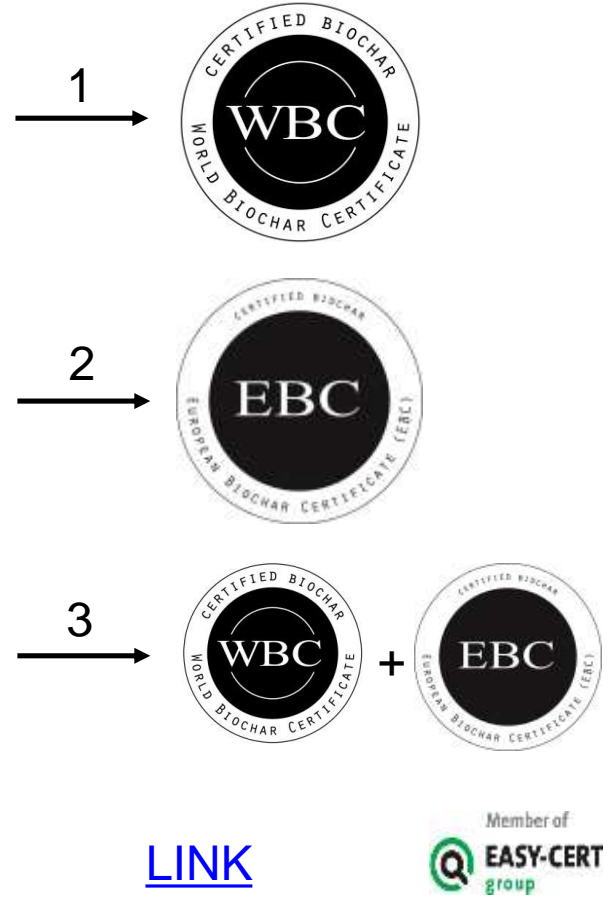
client registration

- operator: registration online on [EBC website](#)
- operator: registration form CSI
- operator: registration form and pre-payment CERES-CERT

client registration

- operator: registration form and pre-payment CERES-CERT

No direct recognition between WBC and EBC





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Thank you for participating!

