CARBON GOLD®

Impact of biochar on crop yields in temperate soils

A summary of field trial data looking at application rates of biochar in temperate regions - and subsequent positive impacts on crop yield. As collated by Pro-Natura.

Type of crop	Location	Type of soils	Authors	Quantity of biochar (ton/ha)	Yield increases %
Canola	Saskatchewan, Canada	Brown loam	Pervej-Ahmed et al.	1	**20%**
Wheat	Postoia, Italy	Silty loam	Vaccari et al.	30	**33%**
Rice	Northern Italy	Aguic hapludalf	Lugato et al.	40	**36%**
Rice	Shenyang, China	Sandy loam	Zhang et al.	30	**40%**
Radish	NSW, Australia	Shromosol	Chan et al.	10	**42%**
Soyabean	Gifu, Japan	N/A	Tagoe et al.	3.8	**43%**
Barley	United Kingdom	Light soil	Gathorne-Hardy et al.	20	**43%**
Quinoa	Germany	Sandy loam brown earth	Kamman et al.	100	**44%**
Citrus	Matsuyama, Japan	N/A	Ishii et al.	83.5	**57%**
Maize	Yingtan, China	Ultisol	Peng et al.	2.4	**64%**
Sweet pepper	Israel	Commercial soilless mixture	Graber et al.	1%	**79%**
Choux	Nanjing, China	Fimi-orthic anthrosol	Jia et al.	30	**96%**
Maize	Tottori, Japan	Sandy soil	Uzoma et al.	15	**150%**
Wheat	NSW, Australia	Ferralsol	Van Zwietan	2%	**170%**

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A summary of field trial data looking at application rates of biochar in tropical regions - and subsequent positive impacts on crop yield. As collated by Pro-Natura.

Type of crop	Location	Type of soils	Authors	Quantity of biochar (ton/ha)	Yield increases %
Casava	Malang, Indonesia	Clay loam	Islami et al.	15	**32%**
Onion	Senegal	N/A	Pro-Natura	10	**50%**
Peanuts	Malang, Indonesia	Clay loam	Islami et al.	15	**54%**
Rice	Empretring, Indonesia	N/A	Zaitun et al.	10	**57%**
Rice	Houay-Khot, Nord du Laos	Upland	Asai et al.	8	**70%**
Maize	Llanos Orientales, Colombia	Savanna oxisol	Major et al.	8	**71%**
Maize	Vihiga, western Kenya	Highly degraded ultisol	Kimetu et al.	6	**71%**
Rice	Manuas, Brazil	Xanthic ferralsol / laterite	Steiner et al.	11	**73%**
Sugarcane	Okinawa, Japan	Shimajiri maji (clay)	Chen et al.	7.2	**78%**
Rice	Sungai Kakap, Indonesia	Acid sulphate soil	Masulili et al.	10	**93%**
Cotton	Midjil Mandal, Andrha Pradesh, India	Alkaline	Reddy	3.75	**100%**
Maize	Llanos Orientales, Colombia	Savanna oxisol	Major et al.	20	**140%**
Cowpea	Gifu, Japan	Sandy loam	Tagoe et al.	N/A	**146%**
Tomato	Kade, Ghana	Forest ochrosol	Effah et al.	7	**177%**
Cabbage	Siam Reap, Cambodia	Sandy acidic	Carter et al.	100	**750%**

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