

MACCY BIOCHAR MEMBER BULLETIN

No. 61 – 1 November 2024

Maccy Biochar is a Task Group of the Macclesfield Community Association Inc.

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73,406 litres biochar made; 35.41 tonnes of CO₂ removed.

Welcome to our 61st Member Bulletin. In this Bulletin please find our latest news items from here and further afield.

LOCAL NEWS:

Production Update:

Biochar production this season to the end of October now stands at 8,245 litres, representing a carbon drawdown of about 3.32 tonnes of carbon dioxide from the atmosphere. Opportunities for further production will cease on Nov. 15 with the early start to the fire ban season.

Macclesfield Strawberry Fete:

Sunday 24 November 2024.

Once again Maccy Biochar will have a stall at the Strawberry Fete so please make a note of the date and come along and see us and maybe buy some more biochar.



Looking back at 2019

Waldorf Mt. Barker School Garden Fete:

David Reynolds made a short presentation on biochar at the Waldorf School Fete on 26 October. Thanks again to David for representing Maccy Biochar at another public gathering and explaining to others why and how to make biochar and how to use it in the

garden as a slow release fertiliser when combined with your favourite organic fertiliser.

Mt. Barker Council – Environment & Sustainability Strategy Forum:

We have been invited to take part in this forum on 18 November to contribute ideas towards the development of the Council's new Environment & Sustainability Strategy covering waste, water, biodiversity, climate change and greening. Biochar can contribute in all these areas:

Waste: By reducing green waste.

Water: By adsorbing contaminants from waste water running into our creeks and rivers.

Biodiversity: By enhancing soil health so that soil microorganisms are encouraged and hence both flora and fauna are helped to thrive.

Climate Change: By reducing atmospheric CO₂ by capturing carbon from the atmosphere.

Greening: By helping to establish trees in difficult urban situations.

So let's aim towards making biochar a key pillar in the Council's new strategy. That would be a great outcome!

FROM "BIOCHAR TODAY":

Magnetic Biochar from Coconut Waste Improves Pesticide Detection in Food

"Researchers have developed a novel method for detecting pesticide residues in agricultural products using a modified QuEChERS process with biochar made from coconut clothing. This biochar, magnetized with Fe₃O₄ particles, was synthesized for the first time and incorporated into a quick and efficient pesticide extraction system.

The study focused on using this magnetic coconut clothing biochar (MCCBC) to improve the analysis of 12 pesticides, including organophosphorus insecticides and strobilurins, in common fruits and vegetables such as tomatoes, cucumbers, and apples.

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The method showed higher sensitivity, better recovery rates, and easier operation compared to existing techniques.” See more at:

<https://biochartoday.com/2024/10/21/magnetic-biochar-from-coconut-waste-improves-pesticide-detection-in-food/>

Zinc-Iron Bimetallic Biochar for Efficient Lead Removal from Wastewater

“A recent study published in the Journal of Environmental Management explores the effectiveness of walnut shell biochar (WBC) modified with zinc-iron bimetallic oxide (ZF@WBC) for removing lead (Pb(II)) from wastewater. Researchers used a combination of experimental analysis and density functional theory (DFT) calculations to investigate how well this modified biochar adsorbs lead.

The ZF@WBC, produced by impregnating walnut shell biochar with zinc and iron oxides at 600°C, displayed significantly improved adsorption properties. With a surface area of 375.97 m²/g, ZF@WBC’s capacity to adsorb Pb(II) was measured at 104.26 mg/g, over 2.5 times more than unmodified biochar. The study confirmed that chemisorption, primarily via surface complexation, ion exchange, and electrostatic attraction, is the dominant mechanism for lead removal.

Notably, ZF@WBC maintained over 70% lead removal efficiency even in the presence of interfering ions, making it a promising solution for practical wastewater treatment. This research highlights the potential of using agricultural waste, such as walnut shells, for creating environmentally friendly and effective biochar-based adsorbents to address heavy metal contamination in water systems.

This study contributes to the broader goal of sustainable wastewater management by leveraging biochar’s capacity to absorb pollutants while repurposing biomass waste.”

New biochar facility to transform almond shells into carbon-sequestering soil enhancer

“Treehouse California Almonds, in partnership with Sitos Group, is establishing a 25,000-square-foot biochar manufacturing facility in Delano, California. The \$9 million project will be the first commercial-

scale biochar operation directly connected to agriculture on the West Coast. Expected to be completed by the end of 2025, the facility will utilize almond shells from Treehouse’s operations, transforming agricultural waste into biochar through a slow pyrolysis process.” See more at:

<https://biochartoday.com/2024/10/29/new-biochar-facility-to-transform-almond-shells-into-carbon-sequestering-soil-enhancer/>

See more about Biochar Today at:

<https://www.facebook.com/BiocharToday/about>

Editor’s Note: In October 2022 ABC’s Rural News published an article covering pyrolysis of almond hulls to make biochar in our Riverland with much optimism expressed by the participants. You can read the article here:

<https://www.abc.net.au/news/rural/2022-10-01/biochar-industry-grows-in-australia-big-benefits-for-agriculture/101483868>

Two years later: What progress has been made? I will try and find some answers for you in the weeks ahead and report back to you.

Also: Australian company BioCare has announced a similar project for almond hull pyrolysis into biochar in SA. You can see the announcement here:

<https://www.biocareprojects.com/post/almond-shell>

Once again not much detail and no results available yet as far as I can tell. **Ed.**

COMMITTEE MEETINGS

Committee meetings are normally held on the 3rd Monday of the month (public holidays excepted) from 7:30 pm. in the Macclesfield Institute Supper Room. You are invited to come along if you have a biochar matter you would like to discuss or simply to meet us.

Next meeting: Monday 18 November 2024.

ENQUIRIES:

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*Making Maccy Carbon Neutral
Making Biochar for carbon capture and soil improvement*