

# MACCY BIOCHAR MEMBER BULLETIN

No. 23 - August 2021

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

Email: [maccybiochar@adam.com.au](mailto:maccybiochar@adam.com.au) Website: [www.maccybiochar.com](http://www.maccybiochar.com)

28,171 litres biochar made; 15 tonnes of CO<sub>2</sub> removed.

HELLO ALL.

Welcome to our 23rd Member Bulletin.

In this Bulletin we report on this year's production; some recent developments; and invite you to pause and reflect on our journey so far with Maccy Biochar.

## August 2021 PRODUCTION

Another dodgy month weather-wise for biochar! But we managed over 1000 litres (exact amount yet to be confirmed) which brings our total for 2021 to about 8000 litres.



Recent view of site with our new trailer.

## TOTAL PRODUCTION SUMMARY

The latest summary of our production and carbon capture as at 31/8/21 is shown below. This year's values are based on:

Dry bulk density of our biochar = 189 kg/m<sup>3</sup>.

Carbon content of our biochar = 84.3%.

SA emissions factor = 0.43 kgCO<sub>2</sub>/kWhr.

| MACCYBIOCHAR SCOREBOARD at 31/08/21 |                  |                     |       |        |        |
|-------------------------------------|------------------|---------------------|-------|--------|--------|
| YEAR                                | 2019             | 2020                | 2021  | TOTAL  | Units  |
| BIOCHAR PRODUCED                    | 1720             | 18451 <sup>2</sup>  | 8000  | 28171  | Litres |
| CARBON CAPTURED                     | 222 <sup>1</sup> | 2939 <sup>3</sup>   | 1230  | 4391   | Kg     |
| NET CO2 REMOVED                     | 0.775            | 10.048              | 4.225 | 15.048 | Tonnes |
| ELECTRICITY OFFSET                  | 1.520            | 23.369 <sup>4</sup> | 9.8   | 34.689 | MWhr   |

1. Re-calculated based on 3rd party biochar analysis dated 19/4/20

2. Includes 3180L from members.

3. Re-calculated based on 3rd party biochar analysis dated 28/1/21

4. Calculated based on Australian National Greenhouse Accounts Factors Oct. 2020 (SA: 0.43 kgCO<sub>2</sub>/KWh)

At the end of the year we will add in the values provided by members from their home production.

HILLS & FLEURIEU LANDSCAPE BOARD:



We recently submitted an application to the Hills & Fleurieu Landscape board for independent community group insurance cover under the policy between the Department of Environment & Water and the SA Government Insurers. I am pleased to announce that we have received confirmation from the Landscape Board that our application was successful and we now have public liability and accident insurance cover for the remainder of the 2021-22 financial year. We are now looking forward to cooperating with the Landscape Board to assist with meeting the challenges ahead using biochar wherever possible. This may be with tree planting programs, soil improvement or water filtration to name some obvious areas. The Board's draft 5 year plan is available to view at <https://www.landscape.sa.gov.au/hf/about-us/our-regions-plan>

## LET'S NOT BE ONE-EYED ABOUT BIOCHAR

The following words of wisdom are courtesy of biochar enthusiast Daniel Pidgeon who has kindly consented to part of his recent email to the IBI biochar group being reproduced here for our benefit. He said:

"Considering the incredibly complex and relatively unknown systems in the soil, plant, microbial, animal relationships, I wonder if a narrowed-in viewpoint will give a less complete answer. I think a fuller answer would lie in combining a few fields of study. I can't help but think that in the steps to increase plant growth, to increase living solar panel space, to increase sugars exuded into the soil, to increase carbon flow into the soil, to increase the microbial life, to increase humus, soil health, and soil carbon levels, to increase carbon cycling, and to decrease or reverse desertification and degradation would take more than



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just one thing. As much as I love what biochar can do.....If ever I get the chance to work on a place bigger than my suburban house block, it would likely be a degraded, arid landscape. I would plan on doing something like this, to multiply the outcomes, benefits and results:

1. **Make biochar on-site** with a **RoCC<sup>1</sup>** kiln (a new variation of the Kontiki kiln designed by Paul Anderson (Dr. Tlud)) or a ring of fire or top lit pile, from woody weed (after intensively running goats or pigs through it to help to clear it, while also getting some benefit from it), or dead wood from on the land.
2. **Enrich/inoculate it** with some of the science of Elaine Ingham and her **Soil Food Web<sup>2</sup>**, or David Johnson's **BEAM<sup>3</sup>** (I have just started two reactors, just after being (Covid) locked down, about 7 feet tall and four feet across. Just a big cylinder, but with ventilation shafts up the middle so nothing goes anaerobic, and irrigation, so nothing dries out.)
3. **Use a P.A. Yeoman's Keyline Plow<sup>4</sup>** to deeply rip on-contour grooves, to break compaction, and allow water penetration and underground storage of rain right where God made it fall, and also allow plant root penetration.
4. **Insert biochar into the rip**, to keep the slot open and permeable, allow infiltration, and keep microbial life in the right place.
5. **Plant, plant, plant.** Right along the slot, for maximum root growth ability, and plant benefit. Treat with a **Johnson-Su<sup>3</sup>** compost slurry right along the seed line, to get maximum microbial (bacterial and fungal) diversity immediately, right at the roots to benefit the plants, allowing them to build rhizospherical relationships with whatever microbial group that particular plant is benefited by and relates to best. Large diversity of plants. Take Elaine Ingham's advice and stick with plants of similar succession together. Or follow **Geoff Lawton's dryland permaculture** advice, with nitrogen fixing trees. Or **Mark Shephard** with his perennial alley cropping and agroforestry. Or **Gabe Brown** with his diverse cover cropping. Or **Colin Seis** with his Pasture Cropping ideas. Plant much, to increase solar energy uptake, to increase the flow of sugars into the soil, to take advantage

of **Christine Jones' Liquid Carbon Pathways**, to protect the soil from sun and rain...and also to get some kind of harvest from it. All the while building humus, cycling nutrients, water and carbon dioxide, building soil carbon in multiple ways naturally. Apparently, carbon is not sequestered long term in humus; but as long as the humus is maintained, (largely with plant exudates), then the carbon is cycled, maintained, and increases.

6. **Then run animals intensively.** Small paddocks, moved often, with long rest periods, as **Allan Savory** would suggest with his Holistic Management. Pruned plants, but not overgrazed. Manure right where you need it. Animals harvesting plants and then being themselves harvested, or else getting a feed before or after a plant crop is harvested, depending on what you plan, on what works better for you. Use animals as the mineral deficiency indicators, supply them with a (**Justin Rhodes style**) Mineral Feeder with a spectrum of necessary minerals for them to supplement what they are not getting from plants. Which will go through them, flushed out in their poo or pee, and be added to the soil, helping to replenish any lack. Biochar would also be available in the feeder for animals to self-medicate as needed, which would also go through the gut and be automatically enriched by their manure, which is then trampled and spread.

Having read of all of these methods which all claim in one way or another to either build soil carbon, or store it, I would love to try combining many of them to find out what the combined outcome is. I suspect it would come in more carbon beneficial than, for example, pickling and burying timber; likely cheaper, but with the added benefit of producing an income for the farmer, producing more nutrient dense, chemical free(-er?) food for the market, and actively reversing desertification and soil degradation.

When I read a lot of the CDR suggestions like burying pickled timber, I feel they are single tracked, single outcome, and can be bettered."

References:

1. <https://www.youtube.com/watch?v=lcw9JFSTyUE>
2. <https://www.soilfoodweb.com>

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

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3. <https://www.csuchico.edu/regenerativeagriculture/bioreactor/index.shtm>
4. <http://yeomansplow.com.au/>

Thanks Daniel for your thoughts, ideas, enthusiasm and wide reading. Hope you can get down to SA to see us soon!

## NEWS FROM YOUR COMMITTEE

### 1. Planting Day at Davenport Square:

We have agreed to donate biochar to use when planting up to 600 new seedlings in Davenport Square, Macclesfield as part of the Square upgrade. The planting day will be on Sunday 19 September.

### 2. Trailer upgrade:

Our new trailer is to be upgraded to accommodate one of our midi-kilns so that we can take it to other sites and make biochar on the spot, subject to the availability of water for fire safety and biochar quenching.

### 3. Quality control:

A measurement device is being selected that will allow us to easily measure pH, total dissolved solids, electrical conductivity and salinity of each batch of biochar that we make as we make it.

### 4. Willunga Workshop:

We will be conducting a biochar workshop at Willunga on Saturday 16 October in conjunction with the Willunga Environment Centre.

### 5. Hills Environment Centre day visit:

A visit from members of the Hills Environment Centre is being arranged so that they can see first-hand what we do and how we make biochar. It is hoped that they will be inspired to start up their own biochar group at Norton Summit or thereabouts soon after.

Committee meetings are normally held on the 2<sup>nd</sup> Monday of the month (public holidays excepted) from 7:30 pm. In the Macclesfield Institute Supper Room. Financial members are welcome to attend.

**Enquiries: Brian Lewis Mob: 041 148 0935**

## PAUSE AND REFLECT:

Let's take a minute to stop and look back at our journey over the last 2½ years. From mini-kilns for home garden use:



to our maxi-kiln:



and then to midi-kilns:



**And our journey has just begun!**

**Now we are about to enter a new phase where cooperation with our Landscape Board could well bring new opportunities to use biochar and help us to meet the challenges ahead.**

## COMMITTEE MEMBERS at present are:

**Brian Lewis** – Chairman, Treasurer & Newsletter.

**Kelvin Williams** – Deputy Chair.

**Fiona Williams** – Membership Secretary.

**Geoff Brockhouse** – Wood collection Team Leader.

**John Agnew** – Schools Liaison.

**Stephen Heading, Ivars Eglitis and Dean Hewlett.**

## EX-OFFICIO ADVISORS are:

**Greg Marlu** – Operations

**Meegan Semple** – Horticulture.

**Tony Huppatz** – Carbon credits.