

Kuwait Biochar Initiative (KBI)

Dr. Hana'a A. Burezq, Founder & Chairperson KBI Newsletter Volume 1 No 3 September 2021

KBI is Official Sustaining Member of International Biochar Initiative



Meet with KBI Chairperson

Dr. Hana'a A. Burezq earned PhD degree from Manchester University UK. She is Research Scientist with 20 years experience in Research for development at Desert Agriculture and Ecosystems Program, Kuwait Institute for Scientific Research. Her enthusiasm in research is to work both in qualitative and quantitative contexts and in innovative manners.



Dr. Hana'a A. Burezq

Biochar - Black Diamond Soil Conditioner

A game changer for sustainable agriculture residues management, environmental protection, crop intensification for food security and combat desertification in Kuwait

Date Palm Residue to Resource — BIOCHAR

Date palm (*Phoenix dactylifera* L) is important tree favored to grow in desert climatic conditions through irrigation. In Arab countries 82.35 million productive date palm trees are grown on 880,760 hectares area representing 1.25% of the total cultivated area (70.18 million hectares). Each tree produces 20 kg date palm frond through regular pruning with average biochar recovery of 35% from dry fronds. Therefore, there is a huge potential to produce biochar through pyrolysis process from unattended residues, which otherwise end into landfills, occupying prime and scarce arable land and polluting the environment. Biochar production technology can be deployed in any farm where agriculture residue as feedstock is available, such as a unique biochar production equipment is located at KISR Station for Research and Innovation, Sulaibiya. Biochar has the potential to support high-intensity sustainable agriculture. Preliminary results showed that up to 60% increase in fresh biomass of alfalfa with the use of biochar soil conditioner in research work completed in 2020. Biochar is stable carbon, which decomposes very slowly, thus providing sustainable carbon offset "soil carbon sequestration".

Dr. Hana'a A. Burezq



Kuwait Biochar Initiative (KBI) is official sustaining member of International Biochar Initiative (IBI). IBI head office is at 1211 Connecticut Avenue, NW, Suite 650, Washington, DC 20036, USA



Bioorganic

Patented *biochar* based organic soil conditioner

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BIOCHAR in International News

AUSTRALIA-NEW ZELAND BIOCHAR CONFERENCE 2021

5th ANZ BIOCHAR CONFERENCE 2021 (ANZBC21)

*Biochar in the Carbon Drawdown Decade
2030 and beyond*

A Live & Virtual Event October 5-7, 2021

For More Information

<https://anzbc.org.au/conference/>

Biochar prepared from plant based organic residue is very porous, it helps to increase soil moisture and nutrient retention, which makes soil a favorable habitat for microbes, that ultimately provides conducive soil environment for crop intensification and food security.

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Improving Biochar Efficiency Through Pelletting

Biochar is light weight, porous and highly vulnerable to wind action during soil application. The best way to apply biochar is through proper mixing with soil in non-windy days, or through well mixed biochar slurry. Biochar pellets are another potential valorization process that helps easy handling, transportation and soil application. It should be noted and kept in mind, that biochar prepared from any organic feedstock is not a fertilizer to add nutrients, but retains nutrients in its porous and nutrients reactive structure and high surface area. According to *USDA study it is reported that *"Applying biochar can even reduce invasive species growth and help native species expand their range. Since many invasive species prefer a nitrogen-rich environment, biochar can reduce invasive species by tying up nitrogen in many soil types"*. This gives bright hope to use biochar in desert rehabilitation to bring back native plants back into desert environment.

*<https://www.usda.gov/media/blog/2019/07/24/after-fire-wood-waste-put-work>



Pelleted biochar

BIOCHAR— Market Prospects in Kuwait

Kuwait can play a pivotal role in developing *biochar* market locally, regionally and internationally. This statement is fully supported with the fact that ubiquitous agriculture residues are available locally which can be recycled through pyrolysis to biochar and biochar based organic and biofertilizers. The potential feedstock in Kuwait are, agriculture residues from agriculture farms, pruning of trees and shrubs from urban landscapes, date palm fronds, animal and poultry manures, as well as sewage sludge from water treatment plants. In doing so, KBI needs government support to establish large scale biochar production facility in Kuwait and to set up plan for use in Kuwait, based on market and demand (*feedstock → biochar demand → biochar production scale-up → packaging → supply to farmers → technical support for use in farm soils → water and fertilizer savings → crops intensification → low cost of production → reducing gap between local crop production and food importation → sustainable food security*). It is believed that in near future, soil-based applications of biochar is most likely be the market in Kuwait and in GCC region, where sandy soils are vulnerable to wind erosion and infertile, biochar will be the solution to fix the problems pended to sandy desert soils. In addition, biochar production is sustainable way to manage diversified residues. Biochar subject is new in Kuwait, education and awareness is mandatory to raise the KBI voice to promote biochar production and use in Kuwait. KBI will furnish more insights in this subject in its 4th KBI quarterly newsletter in December 2021. *Dr. Hana'a A. Burezaq*



Date palm frond

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