

**Gaskiyar dalilin shirin**

- Wayar da kan jama'a da ilimantar da masu cin gajiyar aikin (manoma, CBAs, mata da matasa) akan fasahar takin zamani (biochar).
- Saukaka daukar fasahar takin zamani na bio-fertilizer (biochar).
- Haskaka hanyoyin samar da biochar, shawarwari, yin taka-tsantsan, da sauransu.
- Gabatar da biochar a matsayin hanyar kasuwancin noma

**Asali:**

Daya daga cikin manyan kalubalen da ke kawo cikaskin ga aikin gona a jihar Neja shi ne batun gurbacewar kasa da ke tasowa daga gubar sinadaran karfe. Masu bincike da dama da suka hada da (Onyekwere 2010; Gana 2012; Lawal et al. 2014) sun tabbatar da cewa akwai gubar sanadaren karfe da sinadaran acid din kasa a jihar Neja. Rashin gubar sinadaren karfe matsalace ta abinci mai gina jiki. Gubar sinadaren karfe na da yawa a cikin kasa iri-iri, musamman kasa mai sanadari n acid (Gana, 2012). Yanayin gubar sinadaren bakin karfe sun hada da karancin pH, bushewar kasa, babban abun cikin a bakin karfe oxide, rashin kyawun magudanar ruwa, karancin kwayoyin halittun kasa kasa, samun sauyin launin zuwa ruwan kasa da bushewar ganyenyaki da dai sauransu, yana kuma haifar rashin girman yabanya da kuma rage albarkar kasa. Kasa, gurbatar sinadarai, na kara yawa a duniya da dumamar yanayi, da sauransu.

**Gyaran takin zamani na Biochar**

An tabbatar da gyare-gyaren da aka yi wa takin zamani (biochar) don magance matsalar Fe-toxicity, yayin da kuma aka magance kalubalen da ke tattare da sauran hanyoyin. Biochar sinadaren gawayi ne ko bakin sinadarin carbon da aka yi shi daga dan konawar da aka yi wa kwayoyin halitta a yanayin zafi sama da 660OF (350oC), tare da karancin iskar oxygen. Shi ne mai ba da damar, adana kasa da kuma samar da sinadaren abincin a kasa. Ana iya amfani da kwayoyin halitta na shuka ko dabba a matsayin albarkatun kasa (abinci), amma an fi son abubuwan da ake shukawa irin su shinkafa (Cox, 2019). Domin biochar ya zama bio fertilizer, jurau na kwayoyin cuta da sinadaren bakin karfe (Chandwani et al., 2022).

**Amfanin Takin Zamani na Biochar**

A baya-bayan nan ne, aka zaɓi fasahar biochar a zaman gyaran kasa. Amfaninsa sun hada da:

- tallafawa cigaban microbes wanda ke taimakawa lafiyar kasa kuma yana haɓaka girman shuka;
- yana amfani a matsayin ma'adanar ruwa da abubuwan gina jiki;
- bunkasa karfin shuke-shuke ta yadda za su dauki abubuwa masu gina jiki;
- yana rage yawan iskar gas;
- yana rage tasirin gubar sinadaren karfe masu nauyi;
- Yana bunkasa kasa ta zahiri, sinadarai, hanyoyin nazarin kwayoyin halittu da gyare-gyare;
- Yana kara nazarin ayyukan kwayoyin halittu na kasa don dorewar abinci mai gina jiki;
- Yawan yabanya;
- Yana kara kasa pH da kwayoyin halittu, da dai sauransu.

**Kayan Takin Zamani na Biochar**

- Zaɓin rukunin yanar gizo
- Ana samun buhanan shinkafa daga miller
- Ciyar da na'ura mai lalata biochar da injin hadawa tare da kayan abinci
- dumama kayan abinci ta hanyar kiln biochar tare da 'yar iska kadan a zafin yanayi sama da 350oC don rage konewa.
- Nika da wuce biochar ta sieve
- Auna danshi abin ciki da pH
- Sirka biochar da ruwan sinadarin de-ionized (koda yake ba a kowane hali za a yi hakan ba) da kuma takaitaccen dumama don ba da damar narkewa.
- Bazawa a saman kasa ta amfani da shebur

**Dabaru na Yada Fasaha**

Hororwa, Nunawa, yada fasaha ta hanyar CBAs, da kuma da amfani da ma'aunin da na kusa kasa don sanya idanu wajen aiwatarwa

**Shawarwari :**

- Ka guji kayan da ba zai iya lalacewa ba
- Jika biochar da daddare sannan ka shanya shi kafin fara amfani da shi(ya danganta da abin da ke ciki na kayan abinci)
- Yi amfani da takin gargajiya, sauran takin zamani da takin gargajiya don ingantaccen amfanin gona
- A ajiye a kasa inda ba babu iska da yawa
- Ka guji kara zubawa akan ciyawa
- Ajiye a busasshen wuri
- Ana iya amfani da shi ga kowane nau'in amfanin gona
- Adadin da aka ba da shawarar a yi amfani da shi shi ne matsakaicin 5mt/ha

**Kiyaye Lafiya**

Domin sarrafa da kuma samarwa a waje da kuma adanawa a cikin buhuhuna da aka rufe; sanya abin rufe fuska don kare kura kafin a sarrafa; kauce wa amfani a busasshiyar kasa don takaita kura; guje wa kara zuwa kan ciyayi

**Madogara**

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**Domin Karin Bayani A Tuntubi**

1. Prof. Victor Chude, Project Manager, 08033154400; [vchude@yahoo.co.uk](mailto:vchude@yahoo.co.uk)
2. Dr. Ayodeji. A.A. Coker, Project Officer, 08034091353; [ayodejicoker@futminna.edu.ng](mailto:ayodejicoker@futminna.edu.ng).
3. Mr. Adewale Nafiu, M&E Officer, 08166678219; [huskan2@gmail.com](mailto:huskan2@gmail.com).
4. Mall. Danladi Hassan, Finance Officer; 08039252474; [hdanladi77@gmail.com](mailto:hdanladi77@gmail.com)

**Niger State Consortium Project**

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**Magance Matsalar Gubar Da ake Samu a Sinadaren Karfe (Fe) Ta Hanyar Gyaran Taki A Jihar Neja**

## TAKARDAR BAYANAN GYARAN TAKIN ZAMANI NA BIOCHAR



Partnership for Inclusive Agricultural Transformation in Africa (PIATA)



