|  |  |  |  |
| --- | --- | --- | --- |
| Title | Physicochemical properties and nutrient content of some slow pyrolysis Biochars produced from different feedstocks | | |
| Author(s) Name | Mahmudul Islam Piash, Md. Faruque Hossain and Zakia Parveen | | |
| Contact Email(s) | zakiaparveen1@yahoo.ca | | |
| Published Journal Name | The Bangladesh journal of scientific research | | |
| Type of Publication | Journal | | |
| Volume | 29 | Issue | 2 |
| Publisher | Dhaka University | | |
| Publication Date | December, 2016 | | |
| ISSN | 0253-5432 | | |
| DOI |  | | |
| URL |  | | |
| Other Related Info. | Pages 111-122 | | |
| **Keywords:** Pyrolyzed biochars, feedstocks, organic carbon, nutrient status, SEM | | | |
| Citation: Piash, Mahmudul & Hossain, Md. Faruque & Parveen, Dr. (2016). Physicochemical properties and nutrient content of some slow pyrolysis Biochars produced from different feedstocks. The Bangladesh journal of scientific research. 29. 111-122. 10.3329/bjsr.v29i2.32327. | | | |

|  |  |
| --- | --- |
| Abstract |  |
| Six slow pyrolysis biochars viz. farmyard manure (FM), water hyacinth (WH), domestic organic waste (DW), quick compost (QC), corn cob (CC) and rice straw (RS) were analyzed for their physical and chemical properties. Biochar yielding capacity varied from 34 to 51%, depending on the used feedstock. Water hyacinth biochar exhibited the highest water holding capacity (495%), whereas corn cob biochar had the lowest (146%) regardless of its highest pore volume. Brunauer-Emmett-Teller (BET) specific surface area was found maximum among the plant derived biochars except corn cob. Rice straw biochar exhibited the least mean pore diameter while highest in domestic organic waste. All biochars possessed pH values more than 9. CEC of water hyacinth (WH) was highest, while lowest was in quick compost (QC) biochar. Smallest average particle size (0.54 µm2) was exhibited by water hyacinth biochar. Organic carbon content ranged from 33 to 49%. Nutrient (N, P, K and S) status of biochar produced from domestic organic waste (DW) was found the maximum compared to the rest and corn cob (CC) biochar showed the lowest nutritional value. | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

|  |  |  |  |
| --- | --- | --- | --- |
| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| Goal 3 | Good Health and Well-Being | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| Goal 7 | Affordable and Clean Energy | Goal 8 | Decent Work and Economic Growth |
| Goal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| **Goal 15** | **Life on Land** | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |