

New study touts agricultural, environmental benefits of biochar

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The many benefits of a biomass-made material called biochar are highlighted in a new publication in which Ghasideh Pourhashem, assistant professor at NDSU's Department of Coatings and Polymeric Materials and Center for Sustainable Materials Science, is the lead author.

The 24-page article, "Policy Support for Biochar: Review and Recommendations," was co-written by Rice University colleagues Shih Yu "Elsie" Hung, Kenneth Medlock and Caroline Masiello. The publication appears in *Global Change Biology Bioenergy*.

Biochar is a charcoal-like material that research has demonstrated can be beneficial in the [agricultural sector](#), if proper state and [federal policies](#) are developed. When the porous biochar is applied to soil, the level of hydration improves greatly and increases production. Biochar also can reduce nutrient leaching, while increasing the amount of nitrogen available to plants. Another benefit is reduced release of nitrogenous gases, which can potentially lead to improved air quality.

"Our previous research has shown that wide-scale application of biochar across the United States [agricultural soils](#) can save millions of dollars in health costs by improving regional air quality. Despite the accumulating evidence on biochar, adoption has been slow," Pourhashem said. "Our new study guides how policy frameworks can change to adopt biochar as a resource-saving, crop-boosting and health care improving material.

The researchers evaluated the readiness level of current U.S. policies, programs and regulatory incentives regarding the benefits of biochar.

The paper offers these policy recommendations:

- Improve policies that allow for the monetization of environmental benefits and avoided costs
- Recognize soil as a resource through national preservation [policy](#)
- Develop a broadly accepted set of product standards for biochar

"Compared to more established bio-based products like biofuels, biochar is not the center of policymakers' attention. While biofuels such as conventional ethanol have received incentives as a part of a long-term plan to diversify the nation's energy portfolio, [biochar](#) may warrant greater support as part of a long-term soil and food security strategy," the researchers said in the study.

Provided by North Dakota State University

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