



BEYOND PESTICIDES

701 E Street, SE ■ Washington DC 20003
202-543-5450 phone ■ 202-543-4791 fax
info@beyondpesticides.org ■ www.beyondpesticides.org

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Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Ave. SW.,
Room 2648-S, Mail Stop 0268
Washington, DC 20250-0268

Docket ID # AMS-NOP-21-0038

Re. CS: Biochar from Manure

These comments to the National Organic Standards Board (NOSB) on its Fall 2021 agenda are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

Petition: Biochar from manure

These comments address a petition that seeks to amend the restrictions on biochar produced from a cow manure source that have been applied according to the restrictions on “ash from manure,” according to the listing at §205.602. The petitioner states that biochar produced from cow manure has been misclassified as ash from manure burning and seeks to exempt biochar produced by burning manure from the restriction at §205.602(a).

Although the “transcript” of the April 1995 NOSB meeting in which ash from manure burning did not include a discussion of the Board’s rationale, NOSB materials have subsequently made it clear that the prohibition is based on consistency with organic practices and principles. For example, in 2016, the NOSB voted down another petition to annotate the prohibition of ash from manure burning and gave the following rationale:¹

¹ <https://www.ams.usda.gov/sites/default/files/media/CS%20Ash%20from%20Manure%20Burning%20NOP.pdf>.

Ash from manure burning was originally placed on §205.602 based on its incompatibility with organic production. Burning removes carbon and nitrogen from the final ash product and lessens its soil-building value. Utilizing burning as a method to recycle millions of pounds of excess poultry manure inadvertently supports the business of CAFOs by creating an organic industry demand for ash. Utilizing ash from manure burning in order to assist CAFOs in their reduction of environmental and human health contamination is not a compelling argument for consideration for addition to the National List. The annotation amendment fails the OFPA criteria and should not be added to the National List.

We agree with this rationale and we believe that it applies to biochar from manure as well. The technical review (TR) gives a great deal of information about biochar from many different sources. While biochar has benefits, we believe that maintaining a clear prohibition on using products (ash or biochar) of burning (whether called “burning,” “combustion,” or “pyrolysis”) manure supports organic principles.

In addition, we remind the NOSB of the backburner issue of contaminated inputs.² There is much yet to be learned about the contribution of manure from concentrated animal feeding operations (CAFOs) and industrial dairies to organic farms. Allowing biochar from these operations may increase the importation of contaminants from chemical-intensive practices.

Furthermore, the technical review covers many other issues, including these:

- “Biochar may contain toxic substances, depending on the feedstock and production conditions.”³ These include polycyclic aromatic hydrocarbons (PAHs), which have been classified as persistent carcinogens, and heavy metals.
- “There have been reports of bio-accumulated PAH in food crops that were grown in biochar-amended soils.”⁴
- “Studies have shown that heavy metals are retained in the biochar, and their release into the environment is reduced due to the pyrolysis process. . . . However, while the immobilization of heavy metals in biochar soils appears to be a beneficial outcome, it may also result in the localized accumulation of pollutants over time. Furthermore, long-term retention in biochar is unknown.”⁵
- “Biochar has the potential for environmental contamination at several stages.”⁶ This includes byproducts produced during production, carbon dioxide released during combustion, and PAHs and heavy metals in biochar released into the soil.
- “Given the irreversible nature of biochar application, there is no immediate means of remediation for biochar contaminated with PAHs or heavy metals once applied to the soil.”⁷

² Crops Subcommittee, 2015. Contaminated Input Plan, NOSB Spring 2015 meeting materials, pp. 135-141. <https://www.ams.usda.gov/sites/default/files/media/meeting.pdf>.

³ Biochar Technical Review, 2021. Line 775.

⁴ TR, Line 802.

⁵ TR, lines 824-825, 834-836.

⁶ TR, line 846.

⁷ TR, lines 874-875.

- “There are many natural soil amendments that may be used in place of biochar. Alternative nutrient sources include the raw versions of several biochar feedstocks, such as amino acids, animal byproducts, crop remnants, wood products, compost, manures, and mulch.”⁸
- “There are several alternatives to biochar to increase soil pH, including sodium carbonate, potassium bicarbonate, calcium acetate, calcium carbonate mineral sources, calcium hydroxide, and lime sulfur.”⁹
- “Alternative practices that may make the use of biochar unnecessary include the application of a compost program and the application of manure. Compost and manure are natural sources of nutrients and contain chelating agents and microbes that produce natural compounds that help retain bioavailable soil nutrients. . . . Direct application of residual crops provides another alternative practice to biochar application. The direct application of crop remnants to agricultural soils has been reported to increase organic matter within soils and to improve water retention. Additionally, the reapplication of residual crops to fields rather than use as biochar feedstock prevents the loss of soil and existing nutrients and the acceleration of soil acidification following the removal process.”¹⁰

Other biochar, other uses

The TR also addresses biochar originating from other sources. It is clear that biochar has potential benefits but may also pose hazards. All inputs into organic production pose hazards depending on the degree of contamination of the source. While we heartily support organic as a means of eliminating environmental contamination, we do not support it as a method of cleaning up contamination produced by chemical-intensive agriculture—unless the process is shown not to harm organic producers and consumers.

Conclusions

The NOSB should maintain a clear prohibition on using products (ash or biochar) of burning (whether called “burning,” “combustion,” or “pyrolysis”) manure in organic production. This may require clarification of the language in the definitions section or in the annotation.

The NOSB should renew work on contaminated inputs that has been taken off the work agenda.

Thank you for your consideration of these comments.

Sincerely,



Terry Shistar, Ph.D.
Board of Directors

⁸ TR, lines 1082-1084.

⁹ TR, lines 1112-1113.

¹⁰ TR, lines 1135-1144.

tshistar@gmail.com