State Registration and Labeling Realities for Biochar Products

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Biochar 2018

August 22, 2018
Subjects

• Current Realities of the Biochar Marketplace
• Registration Basics
• Labeling Basics
• Certified Organic ‘Listing’
Perspective

Biochar production and market expansion......

Learn from history of compost, AD, worm castings, industries/markets in the USA

Need to follow a similar path....

• **Science-based claims, more uniformity for customer confidence, follow labeling/registration regulations**

• **Interest in more inclusive definition, classification system (IBI), national testing Program (USBI), work on uniform claims**
AAPFCO

Organization of State DOAs

• Work together on issues affecting State DOAs regarding the distribution of feed, lime, fertilizers, and soil amendments
  - Involve industry in discussions
  - Goal: uniformity from state to state

• Create model legislation & regulation, labeling law

State regulations affect how we ‘legally’ approach the market
Regulatory Background

• 48 states have fertilizer laws (not HI or AK), 38 have soil amendment laws
  – Biochar currently considered a soil amendment; except California
    • But doesn’t always have to be the case

• Individual State DOA’s decide what you can and cannot state on the label
  – Biochar producers / marketers have to register product in all states that product is distributed, and meet their labeling and distribution regulations
    • Even if selling over internet
Related Regulation

- Typically, State DOAs (Control Officials) regulate the distribution of products, not their production
  - Can regulate product quality (e.g., heavy metals, pathogens, etc.)
    ‘Adulteration’
  - Regulate labeling text (during the registration process)
    ‘Also adulterated if it doesn’t meet claims’
  - Claims (benefits), terms, units of measure, other
  - Providing any nutrient data, technically, makes your product a fertilizer

*Some States have gotten very conservative about labeling claims, especially with soil amendments / conditioners*
Current Registration Options

- Register as soil amendment
  - No nutrient claims (unless dual registration), volume vs. weight, must negotiate label claims

- Register as fertilizer
  - Sell by weight, moisture content vs. nutrient claims, etc.

- Dual registration – few states (e.g., PA, IL)

- Don’t register? (OK, until you get caught)
Biochar Registration Aid Cont.

Label Requirements:
1. Label must state the feedstock(s) for the biochar. For example: wood biochar or biochar derived from wood.
2. 100% Biochar products can only be registered as Auxiliary Soil and Plant Substances (ASP). If biochar is blended with other soil amendment inputs, it can be categorized as a packaged or bulk soil amendment.
3. If International Biochar Initiative (IBI) certification claimed, provide a copy of the certification.

Label Format
1. If the product is an Auxiliary Soil and Plant Substance (ASPS), add the percent of biochar being guaranteed under a "NON-PLANT FOOD INGREDIENT" heading. For example:
   
   NON-PLANT FOOD INGREDIENT
   95%......... Wood Biochar

2. If the product is a combination product that guarantees nutrients, add the percent of biochar being guaranteed under an "ALSO CONTAINS NON-PLANT FOOD INGREDIENT" heading. For example:
   
   ALSO CONTAINS NON-PLANT FOOD INGREDIENT
   95%......... Wood Biochar

3. If the product is a packaged soil amendment or a combination product that guarantees nutrients with a soil ingredient section, add biochar to the soil amendment ingredient list.

Rev. December 2017

Biochar Registration Aid

Does the product label include a guarantee for "biochar"?

Yes

Submit a laboratory analysis for total carbon for the biochar ingredient.

Does the laboratory analysis verify a value for Total Carbon that is 60% or greater?

No

Proceed with the application.

Yes

This meets the definition of biochar. Choose another term to describe the input. Refer to Section 14513.5 of the FAC.

Note – Examples of possible acceptable terms are: ash, charcoal, processed charcoal, charcoal derived from X, etc.

*Biochar means materials derived from thermochemical conversion of biomass in an oxygen-limited environment containing at least 90% carbon. Refer to Section 14513.5 of the Food and Agricultural Code.

Rev. December 2017
Soil Amendment – (commonly referred to as Soil Additives or Soil Conditioners), means any substance or a mixture of substances which is intended to improve the physical, chemical, biochemical, biological or other characteristic of the soil, except fertilizer, agricultural liming materials, unmanipulated animal manures, un-manipulated vegetable manures, pesticides and other materials exempt by regulation.

MANY STATES WILL REQUIRE UNIVERSITY RESEARCH TO PROVE CLAIMS

CLAIMS MUST BE TRUTHFUL, BASED ON SUGGESTED APPLICATION RATES
Related Definitions

Fertilizer – any substance containing one or more recognized plant nutrient(s) which is used for its plant nutrient content and which is designed for use or claimed to have value in promoting plant growth, except un-manipulated animal and vegetable manures, marl, lime, limestone, wood ashes and other products exempted by the regulation by the __________.

Specialty Fertilizer – a fertilizer distributed for non-farm use.

MAY HAVE TO PROVE NUTRIENT RELEASE / PLANT AVAILABILITY

Liming Agent – claims and registration?
Related Definitions

**Limestone** – means an agricultural liming material consisting essentially of calcium carbonate or a combination of calcium carbonate with magnesium carbonate capable of neutralizing soil acidity (Official 1998). *Uniform Agricultural Liming Materials Bill (1973)*

Lime / pH raising claims are problematic (technically not legal)

Uniform Bill requires minimum CCE values

<table>
<thead>
<tr>
<th>Material</th>
<th>Calcium Carbonate Equivalent (CCE) in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnt Lime</td>
<td>Not less than 140</td>
</tr>
<tr>
<td>Hydrated Lime</td>
<td>Not less than 110</td>
</tr>
<tr>
<td>Limestone</td>
<td>Not less than 80</td>
</tr>
<tr>
<td>Slag</td>
<td>Not less than 80</td>
</tr>
<tr>
<td>Shells</td>
<td>Not less than 80</td>
</tr>
</tbody>
</table>

States also often have fineness / sieve size requirements, and differing methods to illustrate CCE

*(Some states many not care about claim)*
Often register recycled products as fertilizers

Can’t meet CaCO₃ or gradation (sieve size) requirements
AAPFCO (T-101) Biochar - is a solid material obtained from thermochemical conversion of biomass in an oxygen-limited environment (pyrolysis) containing at least 60% carbon. Feedstocks may be composed of crop residue, wood or other forest waste, and animal manures. Materials transported in salt water, painted, or treated with preservatives are not permitted. When listing biochar in an ingredient statement, the feedstock shall be designated by prefixing the term biochar with the feedstock from which it was produced; i.e. poultry litter biochar, green waste biochar, papermill biochar, etc. When more than one feedstock is involved, all feedstocks greater than 10% of the total volume are to be listed by decreasing volume. 

Need more inclusive spec for market expansion, acknowledge various applications?

CDFA - Biochar means materials derived from thermochemical conversion of biomass in an oxygen-limited environment containing at least 60% carbon.
Registration Costs

- Fees associated with registering both soil amendments and fertilizers vary from state to state.
- There may be a registration fee per product or company and/or a tonnage fee (known as an inspection fee).
- Often you pay both a registration fee (typically ranging from $0 to $250/product and a tonnage fee (typically ranging from $0 to $0.90/ton).
Biochar Labels

What needs to be on the label?

What cannot be on the label?

Bagged product = Bag is label
Bulk product = Literature, B/L is label

Websites count, spoken word??
Key Steps for the Registration and Labeling of Biochar

1. Test your product, understand results
2. Determine / Consider
   - What claims you want to make
   - Applications you want to promote
   - What type of product you want to sell it as
     (the type of product you register it as, depends on what you say on the label)
3. Determine which states you want to market into
   (must meet regulations, and labeling law for all)
4. Read the regulations (AAPFCO, State)
5. Develop draft label, seek assistance, our review with individual states
6. Complete registration paperwork
Biochar Distributed as a Soil Amendment

- **Uniform Soil Amendment Bill**
  - Brand name
  - Net weight (or volume)
  - Guaranteed analysis = ingredient statement
  - Purpose of product (benefits/claims)
  - Directions for application
  - Name and address of applicant

Other text allowable, claims, etc.
‘The more states, the more hassles’
Biochar
Distributed as a Fertilizer

• **Uniform State Fertilizer Bill**
  - Brand (product name)
  - Grade (e.g., 0-0.5-0.5)
  - Guaranteed analysis – chemical breakdown (e.g., WIN, WSN)
  - Directions for use for fertilizer distributed to the end user
  - Name and address of registrant/licensee
  - Derivative statement – nutrient sources
  - **Net weight** (IMPERIAL AND METRIC UNITS)
Biochar
Distributed as a Fertilizer

• Other stuff
  – Heavy metal statement and testing – west coast states primarily
  – Apply only as directed…..statement
  – Allowable claims and terms on labels are based on historical product research, product type being registered (fertilizer vs. soil amendment), whim of individual State/Control Official
  – No pesticidal or unproven claims!
    (University research)
Biochar Claims from Scientific Text

- Enhanced plant growth
- Suppressed methane emission
- Reduced nitrous oxide emission (estimate 50%)
- Reduced fertilizer requirement (estimate 10%)
- Reduced leaching of nutrients
- Stored carbon in a long term stable sink
- Reduces soil acidity: raises soil pH
- Reduces aluminum toxicity
- Increased soil aggregation due to increased fungal hyphae
- Improved soil water handling characteristics
- Increased soil levels of available Ca, Mg, P, and K
- Increased soil microbial respiration
- Increased soil microbial biomass
- Stimulated symbiotic nitrogen fixation in legumes
- Increased arbuscular mycorrhizal fungi
- Increased cation exchange capacity

But...how many of these claims can / should we make on a label? (Is there enough scientific back-up, are they legal claims, are they relevant to buyers, will they be allowable for ALL biochars?)
Allowable Biochar Claims if Selling Nationally

“Increases nutrient and water retention”

WHY?

CDFA only allows these claims, so must label down to the most conservative state

- Will need heavy metal testing for west coast states, and maybe pathogen testing
Biochar Labeling Suggestions

• Keep superfluous and unproven statements off the label
• Include claims related to soil amending and/or fertilization usage
  - Loftier and sustainability claims should be placed on tech sheets or website (not costly if have to stop using)
  - Keep industrial claims off the label
• Minimum weight / nutrient content
• Less text, is sometimes more

Understand states selling into, what they allow
Claim / Text Anomalies
(Why do you find crazy claims on some labels?)

- Some biochar producers / marketers don’t register their products (so never officially reviewed)
- Some states don’t regulate soil amendments (so don’t review)
- Many states do not do thorough label reviews, are 8-10 tough states

The more states you sell into, the more the label is scrutinized (risk)
OMRI Listing

Allows for easier usage on certified organic farms

Greater interest in Lawn & garden products
Biochar

Status: Allowed

Class: Crop Fertilizers and Soil Amendments; Crop Management Tools and Production Aids

DESCRIPTION:
Biochar is biomass that has been carbonized or charred. Sources must be untreated plant or animal material. Biochar from manure is prohibited. Pyrolysis process must not use prohibited additives. See also ASH.

REVISION DATE: 04/23/2018

- Will need heavy metal and pathogen testing for OMRI (or related org.) submittal
Ashes

Status: Allowed

Class: Crop Fertilizers and Soil Amendments

Ash from plant and animal sources only. Ashes from burning minerals, manure, or prohibited materials are prohibited. See also MANURE ASH.

*Products will be considered ‘ash’ if manure derived*

*REMEMBER - OMRI has no label authority (so just because they approve it, doesn’t mean it’s a legal label)*
Conclusions

• Consider product placement when you’re developing your label – who selling to and where

• Remember, must meet labeling and registration laws in every state you sell into (even web sales)

• Understand labeling requirements and regulations before developing a label
  (especially a costly a bag / package)
  – Be realistic and strategic with claims, especially on printed materials

• Seek assistance, unless willing to learn regulations ‘on the fly’ – Expense?
Questions?

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