

Soil Amendments under LGMA “Metrics”

Rationale:

California State Regulations

CCR Title 14- Chapter 3.1- Article 5; 2007

EPA Regulations

40 CFR part 503

Issue # 4: Soil Amendments

- Raw Animal manures or human bio-solids
- Composted manures
- Soil amendments *not* containing animal manure
- Non-synthetic Crop Treatments



Animal manure being applied to a field.

A variety of different soil amendments are used on leafy green fields. Different types of materials pose different health risks and have different regulations.

DO NOT APPLY

- Biosolids
- Raw or Not fully composted animal manure within one year of leafy green production
- Any manure product applied post emergence

Issue # 4: Soil Amendments

Raw Manures or Bio-solids

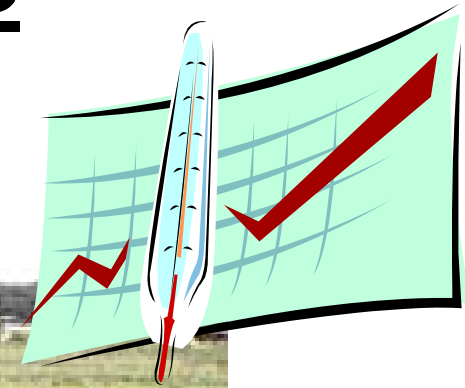


**Raw animal manure or human bio-solids contain dangerous bacteria.
At least a year must have passed since raw or partially composted
manure or bio-solids was applied to a leafy green field.**

Issue # 4: Soil Amendments

Composted Manure

Windrow compost being turned.



Composting causes heating and pH changes which reduce the number of dangerous bacteria. Each lot of composted manure used on leafy green fields must be tested and documents available showing that the lot was produced using approved methods.

Issue # 4: Soil Amendments (Composted Manure)



Composting methods are generally classified as one of three types:

- **Enclosed or Within-vessel**
- **Windrow (mechanically turned)**
- **Aerated Static Pile (forced air)**

Issue # 4: Soil Amendments (Composted Manure)



Different quality standards are required for the different composting methods:

Enclosed or Within-vessel Composting

- Maintained at 131° F for at least 3 days.
- Cured / aged for at least 45 days prior to application.



Windrow Composting

- Maintained aerobically at 131° F for 15 days \geq 5 turnings.
- Cured / aged for at least 45 days prior to application.



Aerated Static Pile Composting

- Covered with 6-12 inches insulation.
- Maintained at least 131° F for 3 days.
- Cured / aged for at least 45 days prior to application.

Issue # 4: Soil Amendments (Composted Manure)



No matter which method is used to produce the compost, every lot of compost must be tested as having:

Fecal coliforms: < 1000 MPN /gram

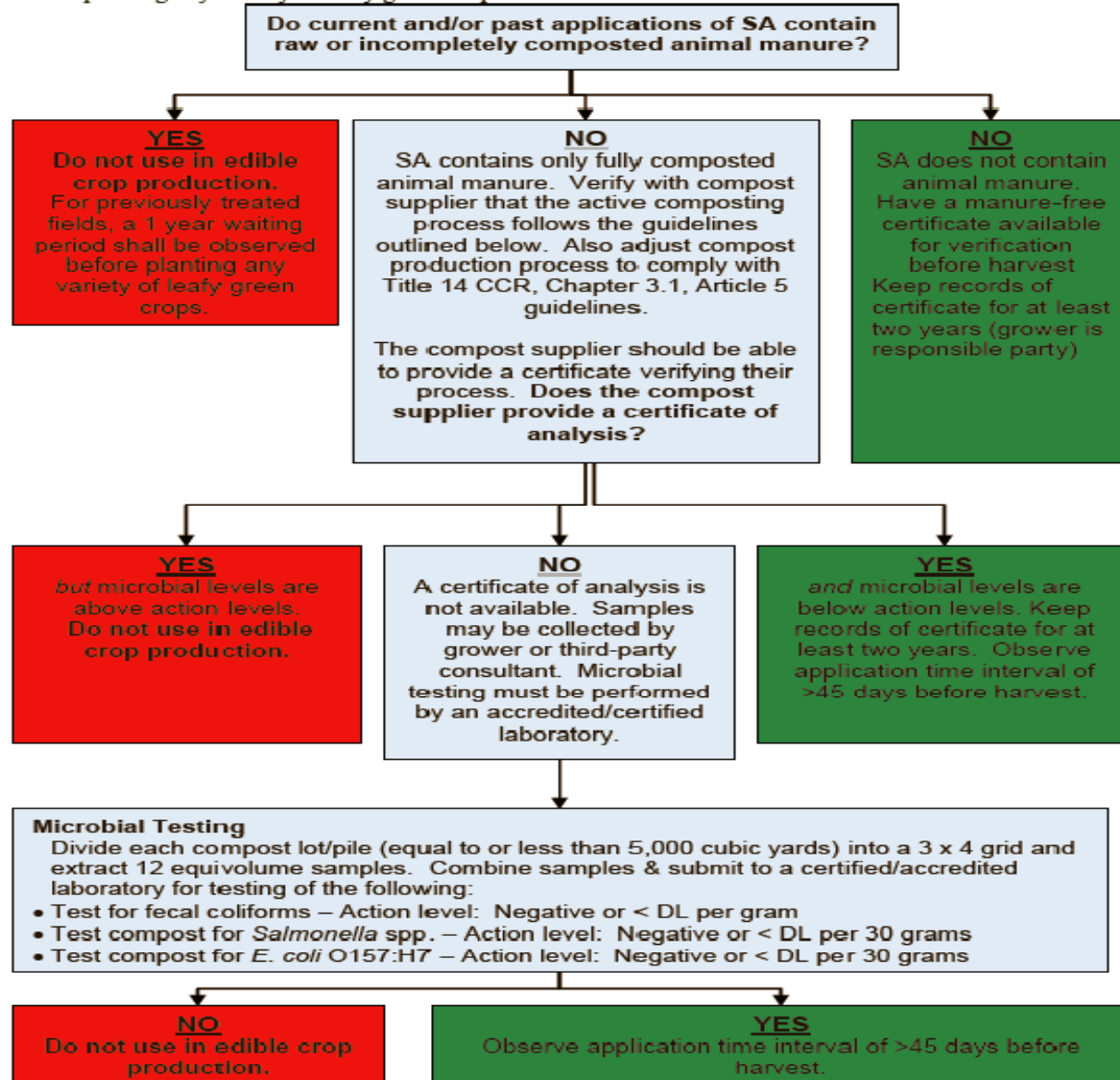
Salmonella: Negative

E. coli O157:H7: Negative

In addition testing requirements exist for soil amendments which contain manure that is physically heat-treated (cooked) or processed by other equivalent methods.

Figure 2A. Decision Tree for Composted Soil Amendments (SA)

If raw manure has been directly applied to the field in the past, a 1 year waiting period shall be observed before planting any variety of leafy green crops.



Issue # 4: Soil Amendments

Soil amendments not containing animal manure?



You must have a Letter of Guaranty or other comparable documentation (ingredient statement, bag label, etc) showing the soil amendments does not contain animal manure. No testing required and no application interval necessary

Issue # 4: Soil Amendments

Non-Synthetic Crop Treatments?

(compost teas, fish emulsions, fish meal, blood meal, bio-fertilizers)



Compost tea brewing, 500 lbs compost, molasses, etc., California

Steve Diver, <http://attra.ncat.org/>

If non-synthetic crop treatments are to be used on leafy green fields, documentation, testing and application record requirements (similar to those for composted manure) must also be met.

Figure 3. Decision Tree for Nonsynthetic Crop Treatments That Contain Animal Products

