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COARSE ORGANIC FRACTION FROM COMPOST PLANTS : A DISCUSSION NOTE

When compost plants receive city waste (either mixed or segregated wet waste) and stabilize it in windrows (long heaps, turned weekly for aeration), about 40% by weight is lost as moisture reduction (from say 60% to 20% by weight). After screening, the yield of saleable compost is at best 15% which meets FCO particle size standards of 4mm and finer. That leaves 45% as a coarse organic fraction, which is currently considered as “rejects”.

Bangalore is now supplying almost-pure wet waste to its six new compost plants and thereby creating a brand new asset for the nation, perhaps the first in the country on this scale.

Such plastics-free coarse organics are no longer rejects but a precious source of soil carbon, useful for reducing water needs of crops, drought-proofing them to prevent repeat sowing, and for restoring salt-affected lands to fertility. Karnataka alone in 2010 had 42 lakh hectares of degraded soils, 22% of its arable land, which can be healed by adding organic matter.

Other cities and States can similarly help both their compost plants and their degraded farmlands by supplying segregated wet waste for composting.

So it is time to consider ways to use coarse organic fractions.

Three options are suggested here for discussion and feedback:

Changing FCO standards for city compost from 4mm to 6mm,

Recognizing a 15mm grade as in US, UK etc, and also

A Soil Amendment grade upto 25mm particle size for reasons explained below.

Typical compost yields from raw waste (data from Ahmedabad) are :

15% for 4mm fine compost as per FCO standards

16% of 4mm to 14 mm fraction

09% of 14 to 50 mm fraction

19% over 50mm particle size.

The remaining % is moisture loss from fresh waste due to heat of decomposition.

1, In order to immediately improve the availability of city compost for fertilizer companies and farmers, which is now being actively promoted, while improving the yields and viability of Indias compost plants, we should consider relaxing only the **FCO particle size standards for city compost from 4mm to 6mm**. If necessary, there can be a limit on the percentage content of manmade inerts like glass or plastic pieces.

2, We also need additional **new FCO or BIS Standards for Garden Grade Compost of allowable particle size upto 15mm**, with the heavy metal contents and other parameters unchanged. This larger size fraction is as rich in humus and microbial count and nutrients as the present FCO grade and is very suitable for use in horticulture tree pits for slow release of nutrients, as fineness for broadcasting on fields is not necessary here. This will double the availability of city compost. Additional specifications needed will be a 1% limit on contaminants (man-made inerts), freedom from weed germination and compost maturity measured also by seedling germination and vigour (bioassay).

3, We also need to legitimize the use of **coarse organics as a Soil Amendment** for restoration of salt-affected soils and for drought-proofing, water conservation, erosion control and Carbon enhancement in soils. This material is already being informally screened and supplied to farmers close to several open dumps countrywide, to supplement and be a replacement for the current short supply of farmyard manure.

Internationally, there are several permissible particle sizes for different grades of compost recognized for different uses and valued for their humus and microbial content. For example, see the US Highway Grade <http://compostingcouncil.org/wp/wp-content/uploads/2015/06/Specification-for-using-Compost-for-Highway.pdf> for erosion control which allows max 75mm with 90% passing through 25mm and maximum 1% manmade inerts but emphasizes compost maturity, freedom from weed seeds and seedling germination test.

UK standards similarly allow max 75mm for landscape mulching, 40mm for soil improvement, 25mm for root crops, vegetables, pit planting and top dressing grassland, and 15mm max for finer seedbeds.

Formal use of this Soil Amendment grade will also keep it out of airless landfills, where it will further degrade over months and release both leachate and methane. This will also enable compost plants to comply with the norm of allowing only 20% of input into landfills to save scarce land area and landfilling cost.

Comments are welcome and may be sent to almitrapatel@rediffmail.com for compilation.

