Preparation of quality farm-yard compost using locally available materials

For use by extension personnel and farmers in Muranga and Tharaka-Nithi counties, Kenya





Composting is a controlled process that utilizes naturally occurring organisms to turn waste material into valuable organic fertilizer.

Why composting?

- Weed and pathogen sanitization (high temperature kills them)
- Balanced nutrients for plants
- Affordable as materials are available around farms

The amount of compost to prepare depends on the following

- The crop to be planted: different crops require different amounts of nutrients
- Fertility status of the farm: soils with low fertility require more compost, while fertile soils require less
- Integration of compost with other amendments available for soil fertility improvement

What to consider before preparation about compost location





On-farm resources for composting

I. Manure

- Cattle/poultry manure
- Domestic and municipal wastes
- Use decaying matter/forest /thicket soil if you do not have access to the above



- 3. Dry matter
- Dry maize stalks, bean stovers
- Dry grass
- Dry tree leaves



2. Green materials

- Fresh clippings of grass
- Fresh twigs from live hedges,
 e.g., Lantana, Tithonia
 diversifolia, etc.



- 4. Miscellaneous inputs (not essential)
- Wood ash (do not overuse, a handful sprinkle suffices per layer), biochar, soil
- Commercial inoculants





Avoid: Dog, donkey, and cat manure; eucalyptus and cassia tree leaves; plastic and other non-biodegradable material or medicine. Ratio: 4 parts manure: 2 parts dry matter: 1 part green matter. If you do not have the dry and/or green matter, manure will still make good compost.



Procedure of compost heaping

Start by dividing the respective materials into at least 3 portions (composting will hasten when you have more than 2 layers to stack)

 Materials should be chopped into small pieces to hasten the process; approximately the size of an index finger (5-10 cm).



3. Add a dry matter layer and spread. Water the layer until the materials are adequately moistened.



5. Add a layer of green materials.



2. Spread a layer of larger dry wastes (small tree branches/twigs, straw, small pebbles/stones, etc.) for aeration and moisten the surface.



 Add a layer of cattle manure and spread to about the length of your palm (1/2ft) & moisten.



6. Sprinkle with a handful of wood ash/ biochar and soil or spray commercial supplements. Moisten the heap.





Repeat steps 3-6 until you exhaust the portions of materials that you prepared.

7. Irrigate the compost to saturation.



9. Cover the pile with soil and grass or old sacs to retain the moisture and the gases inside.



8. Diagonally insert a sharp, dry, pointed stick into the compost pile (thermostick).



Heap size and turning guidelines

- Don't heap more than 5 layers.
- Instead, increase the length of the heap!
- For a quality compost, turning should be done at least once every 5 days for the first three weeks and thereafter, once per week until 2 months
- After two months, compost can be left to cure without turning. Check moisture to ensure modest moisture levels

Guidelines for use of thermostick

- Periodically remove the thermostick and check whether it's dry or how hot it is
- Do this at least once every 3 days for the first 3 weeks and once weekly until 2 months
- When the thermostick is covered with whitish materials, turn and water the compost



How do I know that my compost is ready?

Raw manure/freshly composted



- ✓ Unpleasant odor
- ✓ Has visible plant material
- Scorches plants if applied
- Composting materials can be seen and almost identified
- Compost heap temperatures are high

Not fully composted

- ✓ Dry matter is visible
- Less foul odor but no earthen smell
- The compost heap has episodes of sudden rise in temperature especially after turning
- Intermediate temperatures- no too hot neither close to ambient

Fully composted



- Earthy, dark, crumbly/soil like i.e. almost granular
- Properly managed compost will be ready in two months
- ✓ Earthen smell (smells like forest soil
- The compost heap has temperatures close to environment temperature (ambient)
- If you see remnants of dry matter and its planting time, you can remove them from the manure before applying



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