GORAKHNATH TRUST SURVEY REPORT IN ORGANIC WASTE

ZERO TO SEVEN K.M. IN BETWEEN 6 GP OF 27 VILLAGES

ORGANIC WASTE

1. Mention the exact location with Latitude and Longitude.

Organic waste decomposition does not occur at a single, exact location with a universal set of coordinates. It is a natural biological process that happens ubiquitously across the globe in any environment where organic materials, moisture, and microorganisms are present, such as:

* Soils: Decomposition primarily occurs in the upper layers where organic matter is abundant and microbial activity is highest.

* Water bodies: The process largely takes place in the bottom layers where organic matter sinks and is broken down by microorganisms.

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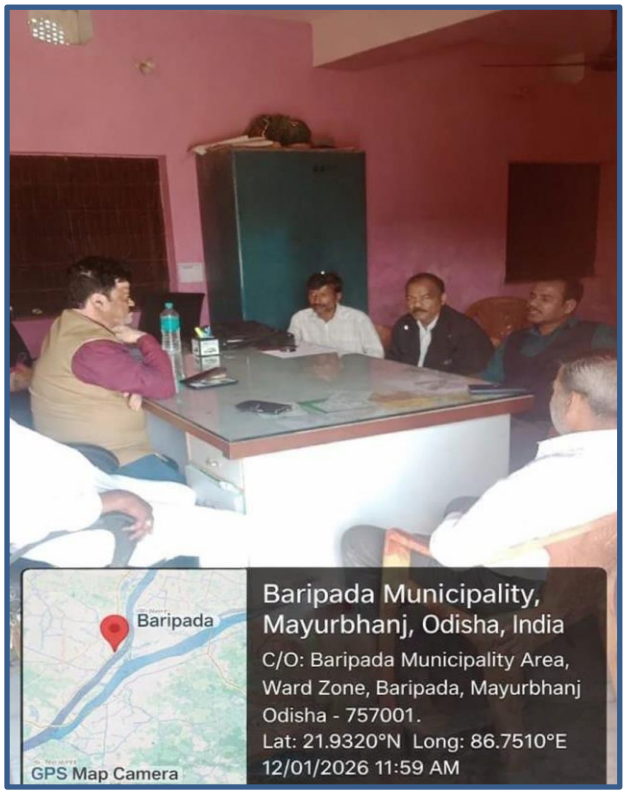
The decomposition process is facilitated by various microorganisms like bacteria and fungi, and its rate is influenced by local environmental factors such as temperature, moisture, and oxygen levels.

SITE & ITS FEATURE

Exact Location of BARIPADA MUNICIPALITY, MAYURBHANJ STARTING POINT :

Latitude: 21.9349˚N , Longitude: 86.7324˚E



2. SITE & ITS FEATURES

BADJODE GP

Sl No	Village Name	Organic Waste (kg/day)
1	Badjode	260
2	Badbilla	180
3	Badbrahmanmara	220
4	Baddakoi	190
5	Badpeta	150
6	Baghuasole	170
	Total – BADJODE GP	1170 kg/day

BANKISOLE GP

Sl No	Village Name	Organic Waste (kg/day)
7	Bankisole	280
8	Patharchakuli	200
9	Sanbrahmanmara	210
10	Tentulisole	190
	Total – BANKISOLE GP	880 kg/day

BETNA GP

Sl No	Village Name	Organic Waste (kg/day)
11	Betna	300
12	Barjupur	220
13	Bhagabatpur	240
14	Damodarpur	200
	Total – BETNA GP	960 kg/day

BHAGBATCHANDRAPUR GP

Sl No	Village Name	Organic Waste (kg/day)
15	Bhagbatchandrapur	260
16	Chandipur	180
17	Tentulidihi	160
	Total – BHAGBATCHANDRAPUR GP	600 kg/day

CHANDUA GP

Sl No	Village Name	Organic Waste (kg/day)
18	Chandua	300
19	Chhenadhua	210
20	Durgapur	230
21	Gopinathpur	190
22	Sanjodia	170
	Total – CHANDUA GP	1100 kg/day

SANKHABHANGA GP

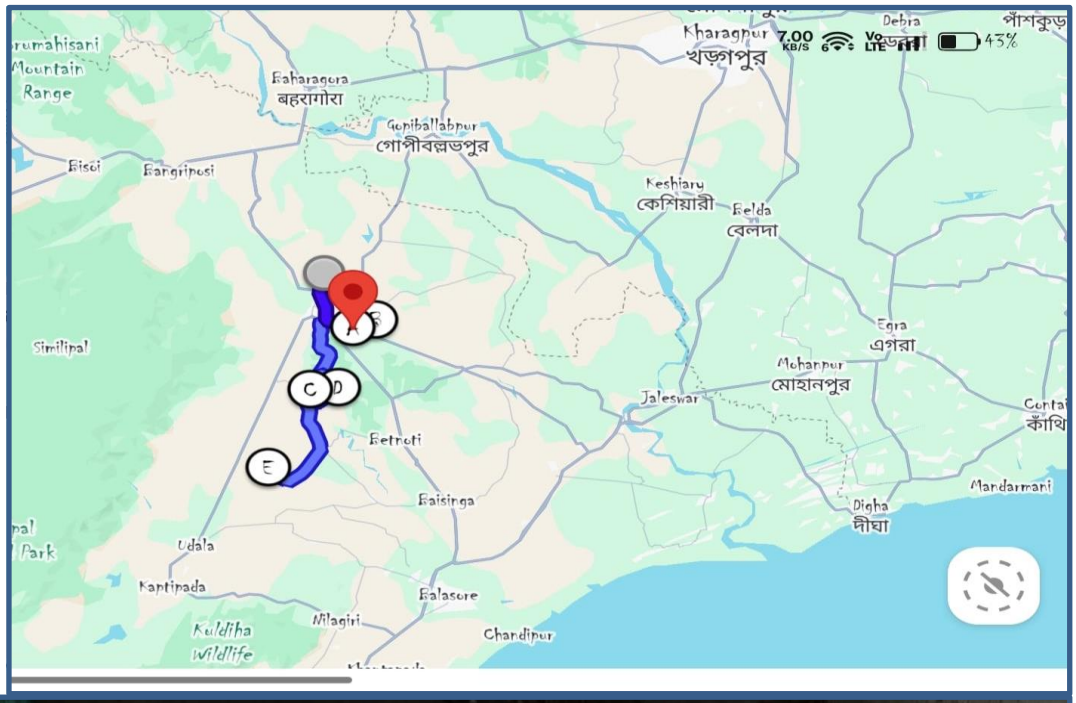
Sl No	Village Name	Organic Waste (kg/day)
23	Sankhabhanga	290
24	Gopalpur	220
25	Gunjasahi	200
26	Hasaldihi	180
27	Debakisol	160
	Total – SANKHABHANGA GP	1050 kg/day

GRAND TOTAL

Total Organic Waste Generated: 5760 kg/day (~5.8 TPD)

1. Total measurements in STARTING POINT to 6 GP in 27 Villages = 70 K.M Radius

2. MAPS & PHOTOS



2. Describe the site- what is and its features.

Anaerobic digestion, or biomethanization, is a process whereby organic waste decomposes in the absence of oxygen. Through the action of microorganisms, the waste is converted into biogas, a mixture of methane, CO 2, and other gases. This gas can be used to generate heat and electricity.

Microorganisms (fungus and bacteria) decompose the organic matter and transform it into compost, a material rich in nutrients that is used as an organic

he key site features, or critical parameters, for effective organic waste decomposition (composting) involve managing the environmental conditions to support optimal microbial activity. These features include:

Carbon-to-Nitrogen (C:N) Ratio: The organic material needs a specific balance of "browns" (carbon-rich, like dry leaves, wood chips) and "greens" (nitrogen-rich, like food scraps, manure). The ideal C:N ratio is typically between 25:1 and 30:1

Moisture Content: Microorganisms require sufficient water to thrive, but too much can lead to anaerobic (low-oxygen) conditions and odours. The favorable moisture content is typically between **50% and 60%**

Oxygen Flow (Aeration): Decomposition is primarily an aerobic process. Adequate aeration is crucial for the microorganisms to breathe and work efficiently. This can be achieved by turning the pile, adding bulking agents (like wood chips), or using forced air systems

Temperature: Microbial activity generates heat. Maintaining a specific temperature range, typically 131°F to 160°F (55°C to 71°C) for a period, promotes rapid decomposition and destroys pathogens and weed seeds.

Particle Size: Shredding or chopping organic materials into smaller pieces increases the surface area available for microbial feeding, which accelerates the decomposition process.

Pile Structure and Size: The physical structure and size of the compost pile impact air and water flow. A proper balance of large and small particles ensures optimal density and porosity.

Presence of Microorganisms and Invertebrates: Bacteria and fungi are the primary decomposers, breaking down complex organic matter. A healthy site will naturally support these populations, sometimes aided by the addition of inoculums or earthworms (in vermicomposting)

The raw material storage area for organic waste decomposition requires specific characteristics to ensure an efficient, odour-minimized, and environmentally safe process. Key requirements include:

For effective organic waste decomposition, the primary "elevation" consideration is choosing a well-drained, elevated site to prevent waterlogging, while specific measurements are crucial for maintaining the optimal balance of physical and chemical factors.

Site Elevation

The decomposition area should be:

- Elevated to prevent rainwater from pooling, which can lead to soggy, anaerobic conditions and odors.
- Level and well-drained if composting in open windrows.
    - Located in a shaded area to help maintain consistent moisture and temperature, or a simple shed can be erected.
    - 5. Provide additional context, like resources or relevant details about the site
- Organic waste decomposition sites, such as composting facilities and anaerobic digesters, are crucial for managing biodegradable waste, reducing greenhouse gas emissions, and producing valuable soil amendments or bioenergy
- **Decomposition Methods:** The two primary methods are aerobic composting and anaerobic digestion
    - Aerobic Composting: Occurs in the presence of oxygen, broken down by microorganisms, and produces heat and a humus-like material called compost. The high temperatures can kill pathogens and weed seeds.
    - Anaerobic Digestion (Biomethanization): Occurs in the absence of oxygen in an enclosed space and produces biogas (mostly methane and carbon dioxide, which can be used as fuel) and nutrient-rich slurry.
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