

⇒ Human: excreta: Not cellulose Rich
: Enzyme absent
: No CH_4 production

⇒ Gas produced depends upon substrate

Wheat flour (Dough)

cheese prodⁿ

Beverages

CO_2

Gobar

supply
SBHK+servant

CH_4

CH_4

CO_2

$\text{H}_2, \text{H}_2\text{S}$

dung +
 H_2O
(Slurry)

Inlet

soil surface

Outlet

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Rise up as
prodⁿ of gases
increase

Flap
cover

CH_4 production

(Digester)
Cattle tank
(10-15 feet deep)
in the soil
Spent slurry

Biogas production: 3 steps

a) Solubilisation:

Cattle dung (complex organic compound)

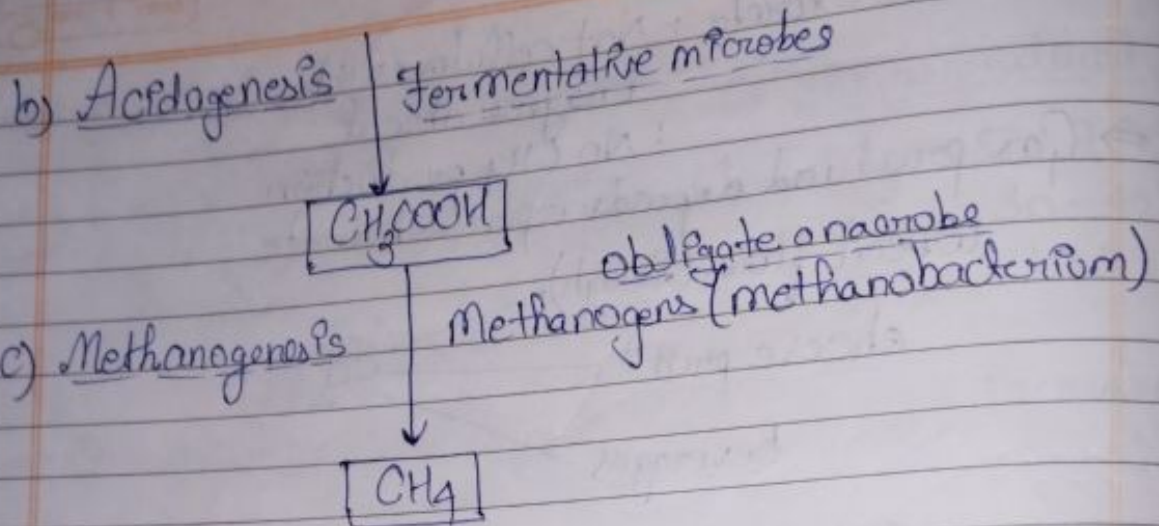
[Cellulose, Hemi cellulose, lipid, protein]

↓ decomposer microbes
Clostridium

→ enzyme release

[Simple soluble compound]

① Cellulase, protease,
lipase



⇒ Spent slurry collected in Outlet : Use as fertilisers

In India, The technique developed by
IARI Delhi

(Indian Agriculture Research Institute)
KVIC

Khadir Village, Industrial Commission

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Microbes as a Bio-fertilizers

⇒ Conventional method: Belfere: Use of pesticides & Insecticides to kill pest / insect.

Disadvantages

- * enter into crops → Food chain (Harmful)
- * Soil fertility decrease
- * kill insect / pest, the predators depend upon them & creatures killed.
- * Not discriminate Target & Non-target