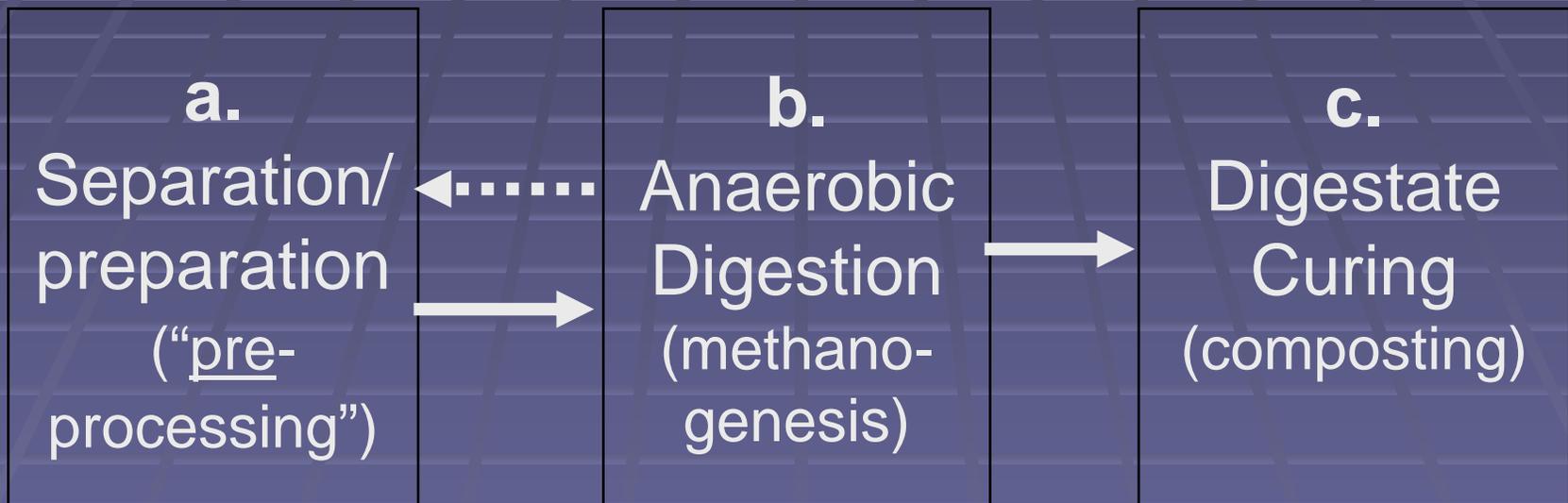


# The ArrowBio Process: Three Functions of Anaerobic Digestion Facilities

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# Functions of Anaerobic Digestion Facilities



How the microbiology does NOT work

Organic waste  $\rightarrow$   $\text{CH}_4 + \text{CO}_2$

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How the microbiology DOES work

Organic waste  $\rightarrow$  A  $\rightarrow$  B  $\rightarrow$  C  $\rightarrow$  D  $\rightarrow$   $\text{CH}_4 + \text{CO}_2$

↑      ↑      ↑      ↑      ↑  
p1    p2    p3    p4    p5

## UASB Digestion

Organics

A



B



C



D



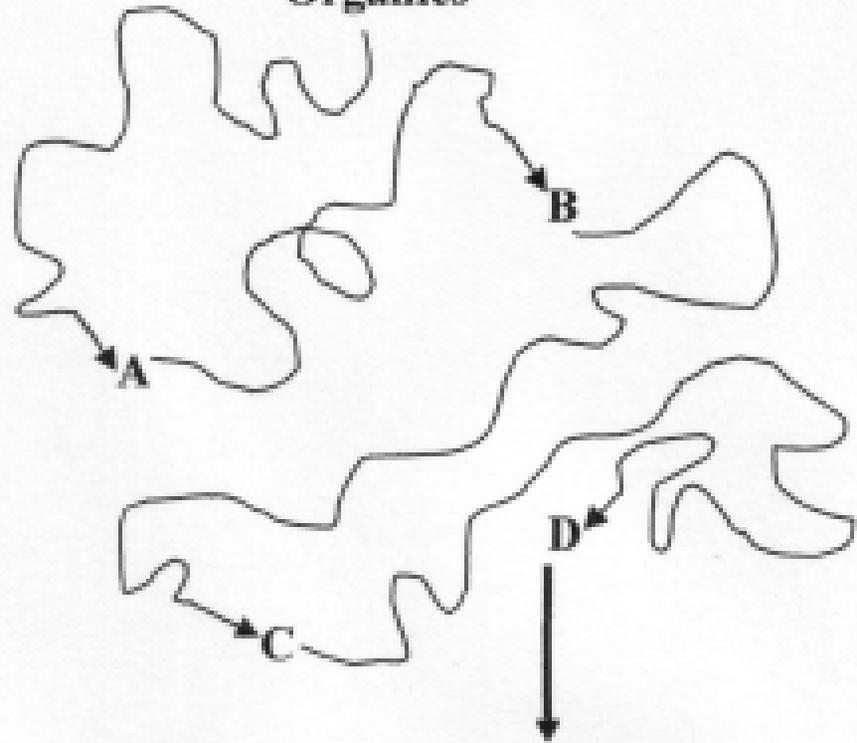
$\text{CH}_4 + \text{CO}_2$

Underlying Causation:

$\text{SRT} \gg \text{HRT}$

## High Solids (Conventional) Digestion

Organics



$\text{CH}_4 + \text{CO}_2$

Underlying Causation:

$\text{SRT} = \text{HRT}$

# The ArrowBio Process: Integration of Functions

- Effective recovery of “recyclables” (gravitational sep/prep in water)
- Effective transformation organics to CH<sub>4</sub>-rich biogas (UASB digestion)
- Small production of shard-free, well-stabilized, digestate (sep/prep in water, UASB digestion)

# IMPORTANCE OF UNDERSTANDING

- It is not sufficient to make assertions about process performance
- Rather, the underlying causation of claimed performance should be understood and explicable in scientific and technical terms

# Purpose of the Presentation was to .....

...explain the logic of the  
ArrowBio process

“The Rest is Commentary”