





7.1

7.2 가

7.3

7.3.1

7.3.2

7.4

# 2.



$$Y_{X/S}^M$$

-

( )

ex)

:

10~11g dry weight/mole ATP

: 6.5g/mol ATP

(CO<sub>2</sub> )

■ ATP

$$Y_{X/ATP}$$



$$\frac{1}{Y_{X/ATP}^{AP}} = \frac{1}{Y_{X/ATP}^M} + \frac{m_{ATP}}{D}$$

$Y_{X/ATP}^{AP}$ : Biomass “ ”

$m_{ATP}$ : ATP

- (Respiratory quotient, RQ)  
(Respiratory ratio )

: 1 CO<sub>2</sub>

- P/O

-

(g mole P/g atm O)

-

- H/O ( / )

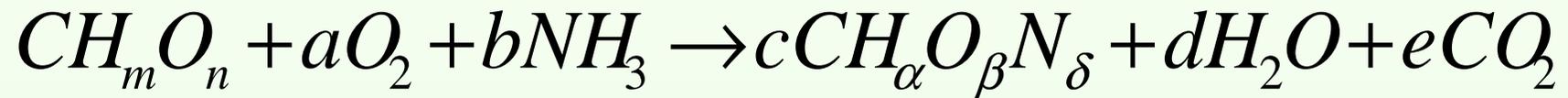
3.



1

- CH O N

- 1g



- C:  $1 = c + e$

$$H: m + 3b = c + 2d$$

$$O: n + 2a = c + d + 2e$$

$$N: \quad b = c$$

- $(RQ) = e/a$





■

$$b = 4 - m + 2n$$

$$b = 4 + -2 -3$$

$$p = 4 + x - 2y - 3z$$

■  $c + d + f = 1$  ( )

$cf + dz = b$  ( )

$c_b + d_p = s - 4d$  (가 )

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$$c\gamma_b + d\gamma_P = \gamma_S - 4a$$

$$1 = \frac{c\gamma_b}{\gamma_b} + \frac{d\gamma_P}{\gamma_S} + \frac{4a}{\gamma_S}$$

$$1 = \xi_b + \xi_P + \varepsilon$$

$\varepsilon$  : , 가

$\xi_b$  : 가

$\xi_P$  : 가



- 1 가 : 24

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$$Y_{x/s} = 24(3.14) = 76 \text{ g dw} /$$

- 

$$Y_{x/s} = 76/180 = 0.4 \text{ g dw} /$$