① Calculations.

$C_1 = 4.2$ ft
$C_2 = 5.1$ ft
$C_3 = 4.6$ ft

$C_1 = 2\pi r_1$

$4.2 = 2 \times 3.14 \times r_1$

$\frac{4.2}{2 \times 3.14} = r_1$

0.66 ft

$r_1 = 20.11$ cm

same

$r_2 = 0.81$ ft

$r_2 = 24.68$ cm

$r_3 = 0.73$ ft

$r_3 = 22.25$ cm

$r = \frac{r_1 + r_2 + r_3}{3}$

$r = \frac{(20.11 + 24.68 + 22.25)}{3}$

$r = \frac{67.04}{3}$

$r = 22.34$ cm

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(2)

Volume = $2\pi r^2 h$

$V = 3.14 \times (22.34)^2 \times 73.15$

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$V = 112,589.843\ cm^3$

$V = 112.5$ Lit

Volume Cylinder.

(3)

for 12kg culture 2 lit urine

∴ 166.66 ml for every 1kg.

After mixing of 200 ml urine in 1kg culture

$C_1 =$

$86\ cm = 2\pi r_1$

$\frac{86}{2 \times 3.14} = r_1$

$r_1 = 13.69\ cm$

$C_2 = 2\pi r_2$

$89.91 = 2 \times 3.14 \times r_2$

$\frac{89.91}{2 \times 3.14} = r_2$

$r_2 = 14.31$

$= 14.31 + 13.69$

$14\ cm$

$V_1 = \pi r^2 h$

$= 3.14 \times (14 \times 14)(10.8)$

$= 6.646\ cm^3$

$= 6.64$ lit.

for 1kg culture & 200 ml urine need.

6.64 lit.

∴ for 12kg urine.

79.68 lit.

1kg Saw dust = 6.64 lit