



CALCULATION OF SEMEN VOLUME IN STRAW FOR CRYOPRESERVATION

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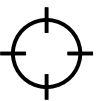
16 APRIL 2021

Volume of Semen Extender & Number of Straws

Example:

- Volume of nett semen = 6 ml
- Semen concentration = $1,750 \times 10^6$ sperm/ml
- Straws a) 0.25 ml
b) 0.50 ml

Determine concentration of semen to be pack in straw between $20-50 \times 10^6$ sperm/straw



Method A

If, 0.25 ml straw to be used and pack at 30×10^6 sperm/straw

Semen Extender

$C1 \times V1 = C2 \times V2$ (note: using basic chemistry formula, make sure the units are the same)

$$1,750 \times 10^6 \text{ sperm/ml} \times 6 \text{ ml} = (4 \times 30 \times 10^6 \text{ sperm/straw}) \times V2$$

$$1,750 \times 10^6 \text{ sperm/ml} \times 6 \text{ ml} = 120 \times 10^6 \text{ sperm/ml} \times V2$$

$$V2 = 1,750 \times 10^6 \text{ sperm/ml} \times 6 \text{ ml} \div 120 \times 10^6 \text{ sperm/ml}$$

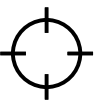
$$V2 = 87.5 \text{ ml}$$

$$\therefore \text{ semen extender needed} = 87.5 \text{ ml} - 6 \text{ ml}$$

$$= 81.5 \text{ ml}$$

$$\text{Number of straws} = 87.5 \text{ ml} \div 0.25 \text{ ml}$$

$$= 350 \text{ straws}$$



Method B

If, 0.25 ml straw to be used and pack at 30×10^6 sperm/straw

Number of straws

$$1,750 \times 10^6 \text{ sperm/ml} \times 6 \text{ ml} = 10,500 \times 10^6 \text{ sperms}$$

$$10,500 \times 10^6 \text{ sperms} \div 30 \times 10^6 \text{ sperms} = 350 \text{ straws}$$

Semen Extender

$$350 \times 0.25 \text{ ml} = 87.5 \text{ ml}$$

$$\begin{aligned} \therefore \text{semen extender needed} &= 87.5 \text{ ml} - 6 \text{ ml} \\ &= 81.5 \text{ ml} \end{aligned}$$

