

**Agronomy 485  
Dilution Problems**

All answers are the no. per g O.D. soil

1.	vol	
$x + 0.28x = 11.2g$	90	$\frac{8.75g}{2.65g/cc} =$
$1.28x = 11.2$	2.5	
$x = 8.75g \text{ O.D. soil}$	<u>3.3</u>	3.3
	95.8	

$$\frac{95.8}{8.75} = 10.9:1$$

$$57 \times \frac{10.9}{10} \times 10^3 = 6.2 \times 10^4$$

2.	vol	
$x + 0.16x = 9.8g$	90	$\frac{8.45g}{2.65g/cc} =$
$1.16x = 9.8$	1.4	
$x = 8.45g \text{ O.D. soil}$	<u>3.2</u>	3.2
	94.6	

$$\frac{94.6}{8.45} = 11.2:1$$

$$105 \times \frac{11.2}{10} \times 10^5 = 1.18 \times 10^7$$

3.	vol	
$x + 0.37x = 14.3g$	90	$\frac{10.4g}{2.65g/cc} =$
$1.37x = 14.3$	3.9	
$x = 10.4g \text{ O.D. soil}$	<u>3.9</u>	3.9
	97.8	

$$\frac{97.8}{10.4} = 9.4$$

$$22.5 \times \frac{9.4}{10} \times 10^6 = 2.1 \times 10^7$$

4.	vol	
$x + 0.125x = 107$	900	$\frac{95.1g}{2.65g/cc} =$
$1.125x = 107$	11.9	
$x = 95.1g \text{ O.D. soil}$	<u>35.9</u>	35.9
	947.8	

$$\frac{947.8}{95.1} = 9.97:1$$

$$98 \times \frac{9.97}{10} \times 10^4 = 9.8 \times 10^5$$

**Agronomy 485  
Dilution Problems (continued)**

5.

$$\begin{aligned} x &= 0.25x = 50.3\text{g} \\ 1.25x &= 50.3 \\ x &= 40.2\text{g O.D. soil} \end{aligned}$$

$$\begin{aligned} &250 \\ &10.1 \\ &\underline{15.2} \\ &275.3 \end{aligned}$$

$$\begin{aligned} \frac{40.2\text{g}}{2.65\text{g/cc}} &= \\ &15.2 \end{aligned}$$

$$\frac{275.3}{40.2} = 6.85:1$$

$$34 \times \overset{\text{initial}}{\downarrow} \underline{6.85} \times \overset{10 \text{ into } 40}{\downarrow} 5 \times \overset{1/2\text{ml}}{\downarrow} 5 \times 5 \times 5 \times 5 \times 2 = 5.8 \times 10^4$$

6.

$$\begin{aligned} x + 0.19x &= 0.92\text{g} \\ 1.19x &= 0.92 \\ x &= 0.77\text{g O.D. soil} \end{aligned}$$

$$\begin{aligned} &9 \\ &0.15 \\ &\underline{0.29} \\ &9.44 \end{aligned}$$

$$\begin{aligned} \frac{0.77\text{g}}{2.65\text{g/cc}} &= \\ &0.29 \end{aligned}$$

$$\frac{9.44}{0.77} = 12.3:1$$

$$34 \times \frac{12.3}{10} \times 10^9 = 4.2 \times 10^{10}$$