#4

Source	DF	SS	MS	F
Treatment	$k-1=2$	$SST=0.06102$	$SST/2=0.03051$	MST/MSE $=0.989$
Error	$n-k=15-3=12$	$SSE=0.37008$	$SSE/12=0.03084$	
Total	$n-1=15-1=14$	0.4311		

$$CM=\frac{(\Sigma x_{ij})^2}{n}=11.704$$

$$\text{Total } SS=\Sigma x_{ij}^2-\frac{(\Sigma x_{ij})^2}{n}=\Sigma x_{ij}^2-CM=0.431$$

$$SST=\Sigma\frac{T_i^2}{n_i}-CM=11.76502-11.7042=0.06102$$

$$SSE=SS-SST=0.37008$$

$\alpha=0.05$, $F_{2,12,0.05}=3.89$

Since $F<F_\alpha$, we do not reject H_0 at 5% (not enough evidence to reject)
Therefore, the population means are not significantly different and the true average degree of soiling is the same for all mixtures.