RC 159-5.4a: Evaluation of three different of PPM to coltrol red slime

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# Introduction

Tissue culture tubes containing callus in Bldg. 001, Rm. 331 after six months are beginning to be contaminated with a red slime. Consequently, it became imperative that we find a way to control the bacteria. Evidently PPm at 0.1 % wasn't working. Initially the five antibiotics used in prior research were evaluated at the recommended rate and three times the recommended rate.None of the antibiotic treatments were significantly different from the control. It was decided to test PPM at 1 and 10% for control of the red bacteria.

### summary

The following is a summary of the treatments (0, 1% & 10% PPM) for bacteria count

## # A tibble: 3 x 2  
## trt Total\_mean  
## <fct> <dbl>  
## 1 0 72.8  
## 2 1 0   
## 3 10 0

### analysi of variance for total area

##   
## Call:  
## lm(formula = Count ~ trt, data = RC159\_5.4.0Data, na.action = na.omit)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -12.75 0.00 0.00 0.00 14.25   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 72.750 3.593 20.25 8.15e-09 \*\*\*  
## trt1 -72.750 5.081 -14.32 1.69e-07 \*\*\*  
## trt10 -72.750 5.081 -14.32 1.69e-07 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 7.186 on 9 degrees of freedom  
## Multiple R-squared: 0.9681, Adjusted R-squared: 0.961   
## F-statistic: 136.7 on 2 and 9 DF, p-value: 1.844e-07

## Anova Table (Type II tests)  
##   
## Response: Count  
## Sum Sq Df F value Pr(>F)   
## trt 14113.5 2 136.66 1.844e-07 \*\*\*  
## Residuals 464.8 9   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### pair wise t test Trt vs Count

##   
## Pairwise comparisons using t tests with pooled SD   
##   
## data: RC159\_5.4.0Data$Count and RC159\_5.4.0Data$trt   
##   
## 0 1  
## 1 5.1e-07 -  
## 10 5.1e-07 1  
##   
## P value adjustment method: holm

### Results

The ANOVA for three treatments were significantly differet . In the Pairwise comparison of the three treatments, The 0% treatmment differed from 1 & 10 %. The 1 and 10% were not signifficantly different  
Form Prior studies none of the five antiobiotics that we have used in prior research had any effect on the red bacteria at the recommened rate or at 3 times recommended rate.

The PPM at 1 & 3% gave 100% control. The question