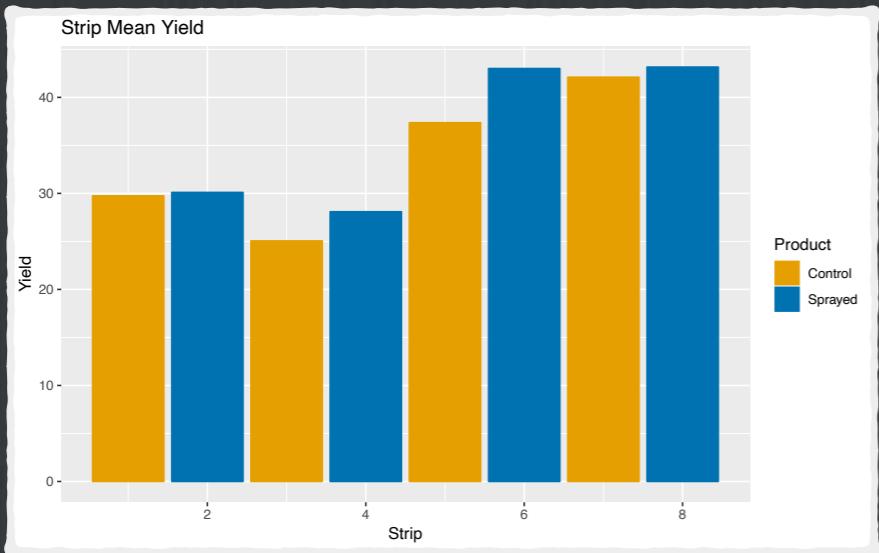


Information Criteria



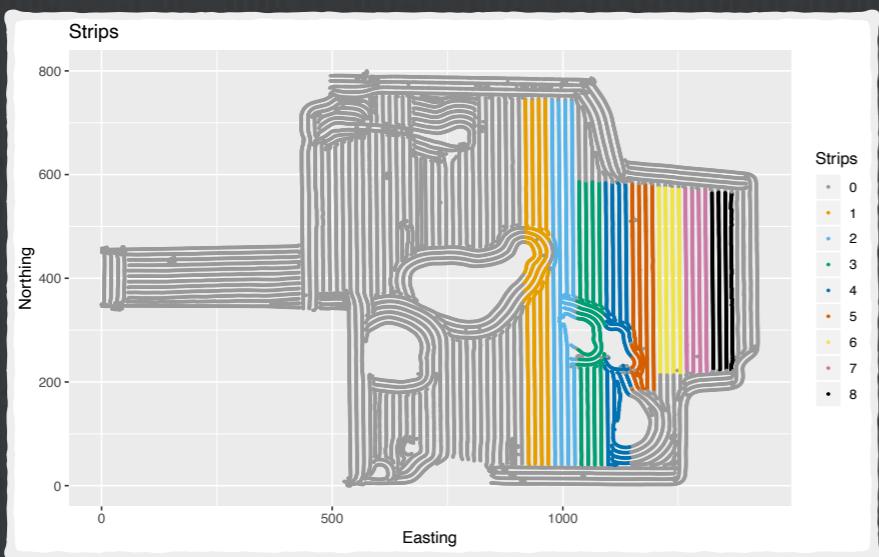
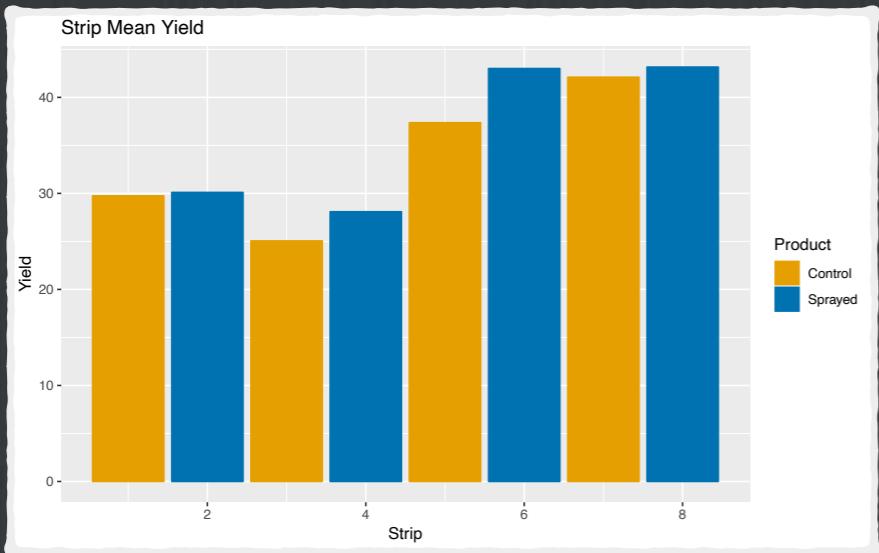
- We might use information criteria,
 $AIC = 2k - 2\ell$
 $BIC = \ln(n)k - 2\ell$
- where k is the number of parameters, and n is the number of observations

> AIC(H1.lm)
[1] **68.36914**
> AIC(H2.lm)
[1] 69.22823
> BIC(H1.lm)
[1] **68.76634**
> BIC(H2.lm)
[1] 69.70488



- With IC, smaller is better; the model without a parameter for treatment effect is preferred

Likelihood Ratio Test



- A likelihood ratio test statistics is written as
$$LR = -2(\ell_1 - \ell_2)$$
 approaches a χ^2 distribution, so sometimes this is used as a null hypothesis test:

```
> lrtest(H1.lm, H2.lm)
      Likelihood ratio test
Model 1: Yield ~ Block
Model 2: Yield ~ Block + Product
Df  LogLik Df  Chisq Pr(>Chisq)
1   5    -29.185
2   6    -28.614  1  1.1409    0.2855
```