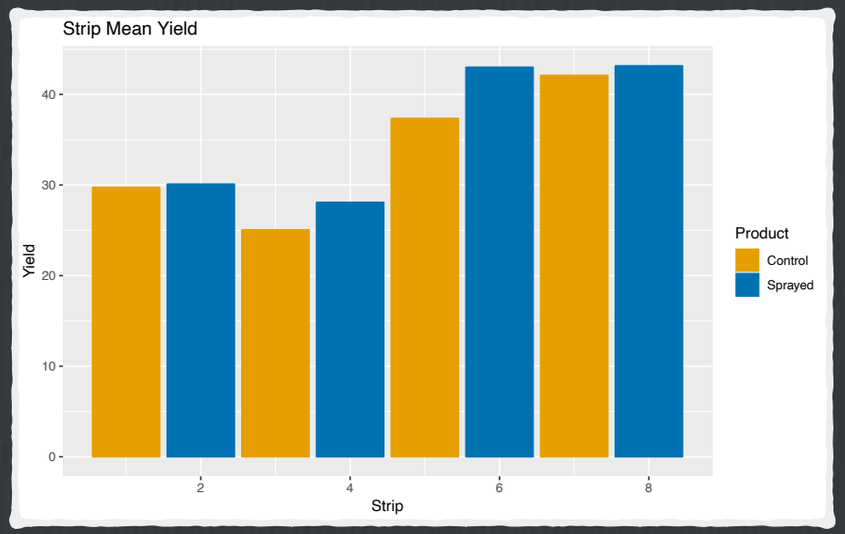
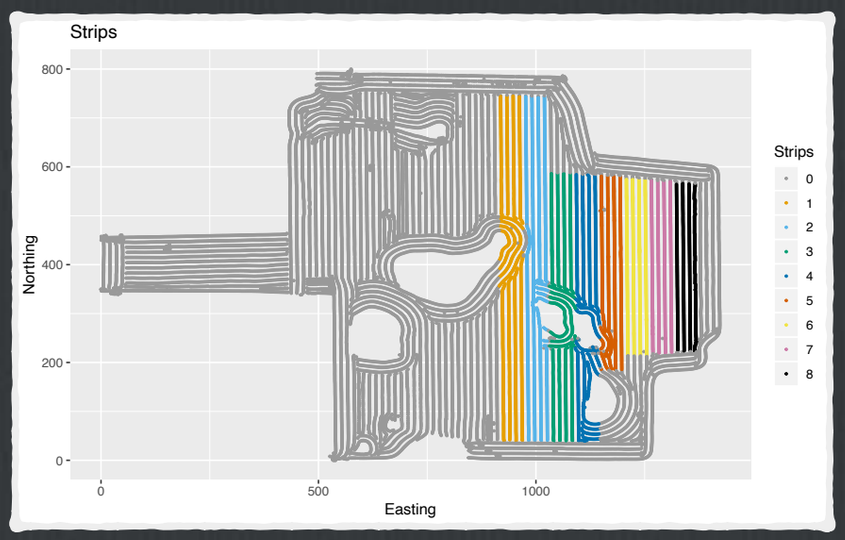
Likelihood Ratio (Naive)

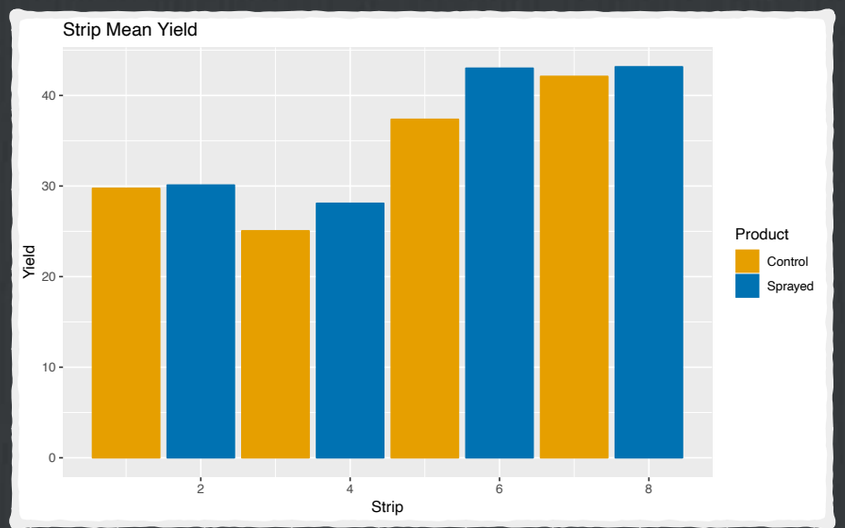


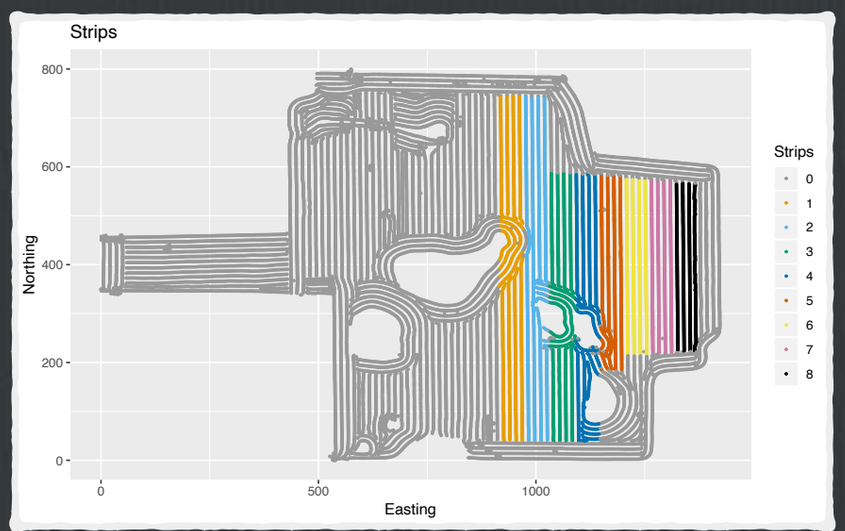


- We can test this by calculating the log-likelihood for two models

```
> H1.lm <- lm(Yield ~ Block,
data=meansEqual.dat)
> H2.lm <- lm(Yield ~ Block + Product,
data=meansEqual.dat)
> logLik(H1.lm)
'log Lik.' -29.18457 (df=5)
> logLik(H2.lm)
'log Lik.' -28.61411 (df=6)
> logLik(H2.lm)-logLik(H1.lm)
'log Lik.' 0.5704535 (df=6)
> exp(logLik(H2.lm)-logLik(H1.lm))
'log Lik.' 1.769069 (df=6)
```

Likelihood Ratio (Naive)





- Subtract the logs, then exponentiate to get a ratio

```
> H1.lm <- lm(Yield ~ Block,
data=meansEqual.dat)
> H2.lm <- lm(Yield ~ Block + Product,
data=meansEqual.dat)
> logLik(H1.lm)
'log Lik.' -29.18457 (df=5)
> logLik(H2.lm)
'log Lik.' -28.61411 (df=6)
> logLik(H2.lm)-logLik(H1.lm)
'log Lik.' 0.5704535 (df=6)
> exp(logLik(H2.lm)-logLik(H1.lm))
'log Lik.' 1.769069 (df=6)
```

- H2 is more likely, but is it much more likely?