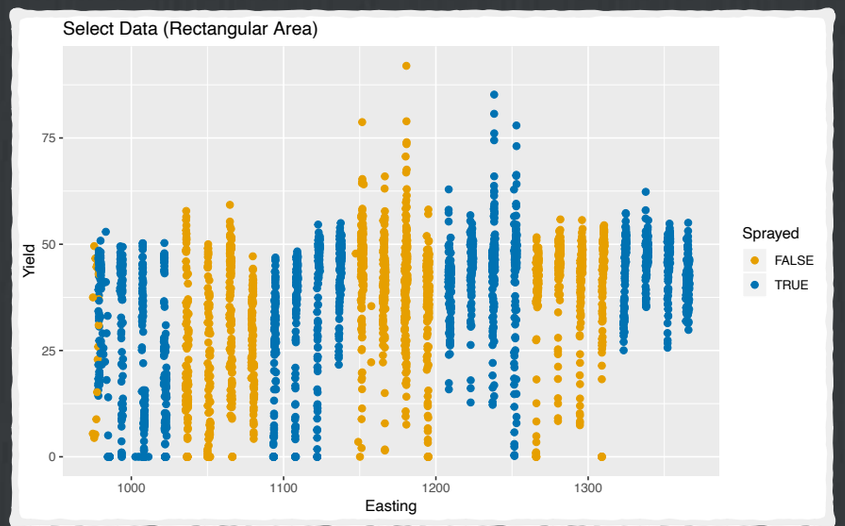
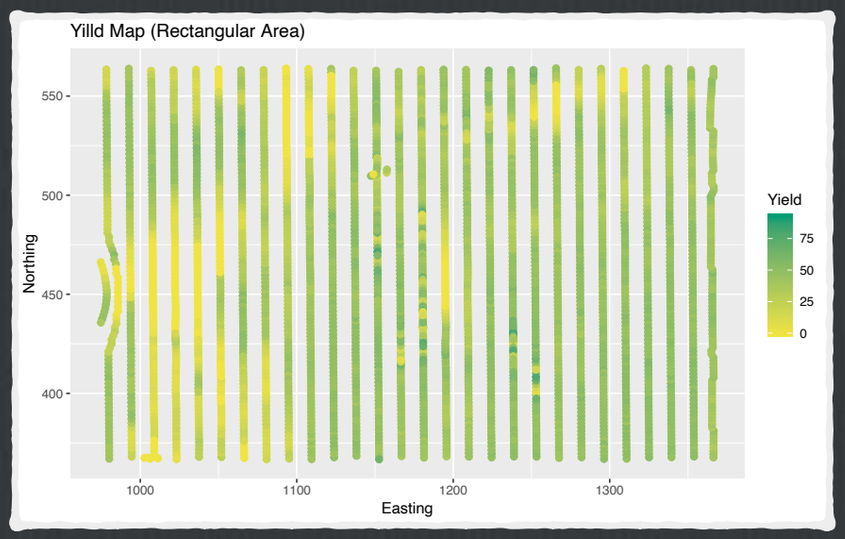
Model Comparison





☐ Likelihood test to compare 1D and 2D models

☐
```
Likelihood ratio test
Model 1: Yield ~ poly(Easting, 5) + Sprayed
Model 2: Yield ~ poly(Easting, 7) * poly(Northing, 7) +
Sprayed
  #Df LogLik Df  Chisq Pr(>Chisq)
1   8 -12623
2  66 -11700 58 1846.4  < 2.2e-16 ***
```

☐ Likelihood test to compare 2D models with and without treatment effect

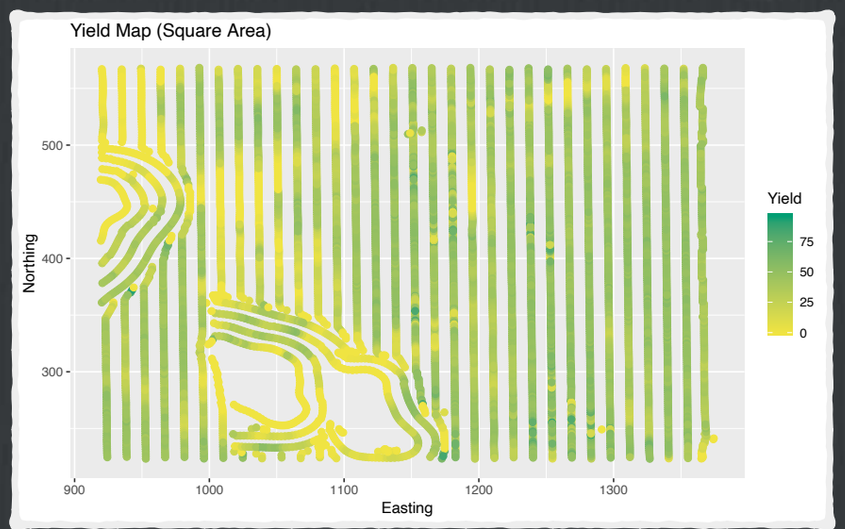
☐
```
Likelihood ratio test
Model 1: Yield ~ poly(Easting, 7) * poly(Northing, 7)
Model 2: Yield ~ poly(Easting, 7) * poly(Northing, 7) +
Sprayed
  #Df LogLik Df  Chisq Pr(>Chisq)
1  65 -11702
2  66 -11700  1 3.8295    0.05036 .
```

☐ and

$$H_6 : \tau = 0.8762, p(t) = 0.101$$

$$H_{2D} : \tau = 0.787, p(t) = 0.052825$$

Expanded Square



- [ ] **Likelihood test to compare 2D models with and without treatment effect**

```
Likelihood ratio test
  Model 1: Yield ~ poly(Easting, 17) *
  poly(Northing, 17)
  Model 2: Yield ~ poly(Easting, 17) *
  poly(Northing, 17) + Sprayed
    #Df LogLik Df  Chisq Pr(>Chisq)
  1 325 -21602
  2 326 -21601  1 1.0578     0.3037
```

- [ ] **and**

$$H_{2D} : \tau = 0.648, p(t) = 0.317$$