main_analysis

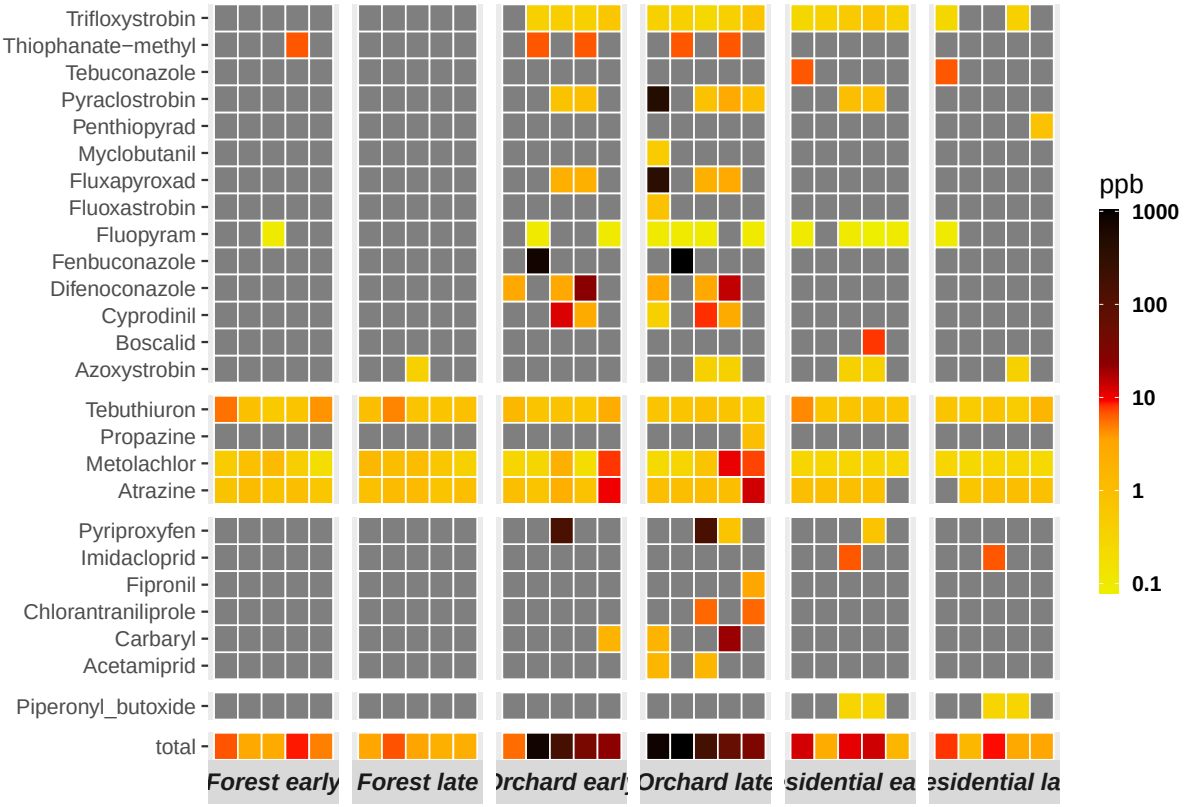
2024-03-20

This will be my analysis for the city bee country bee dataset

The experimental design is

3 site types (forest, residential, orchard) 5 nests within each site type (15 total sites) 2 time points (early & late, which happened all at different times due to elevation differences) 8 provisions gathered from each site x time point combination.

So the total number of samples for microbial analysis was 15 * 2 * 8 = 240.



A heatmap showing the pesticide findings across samples for early and late sampling. Y axis is broken up into 1. fungicide, 2. herbicides , 3. insecticide, 4. synergist

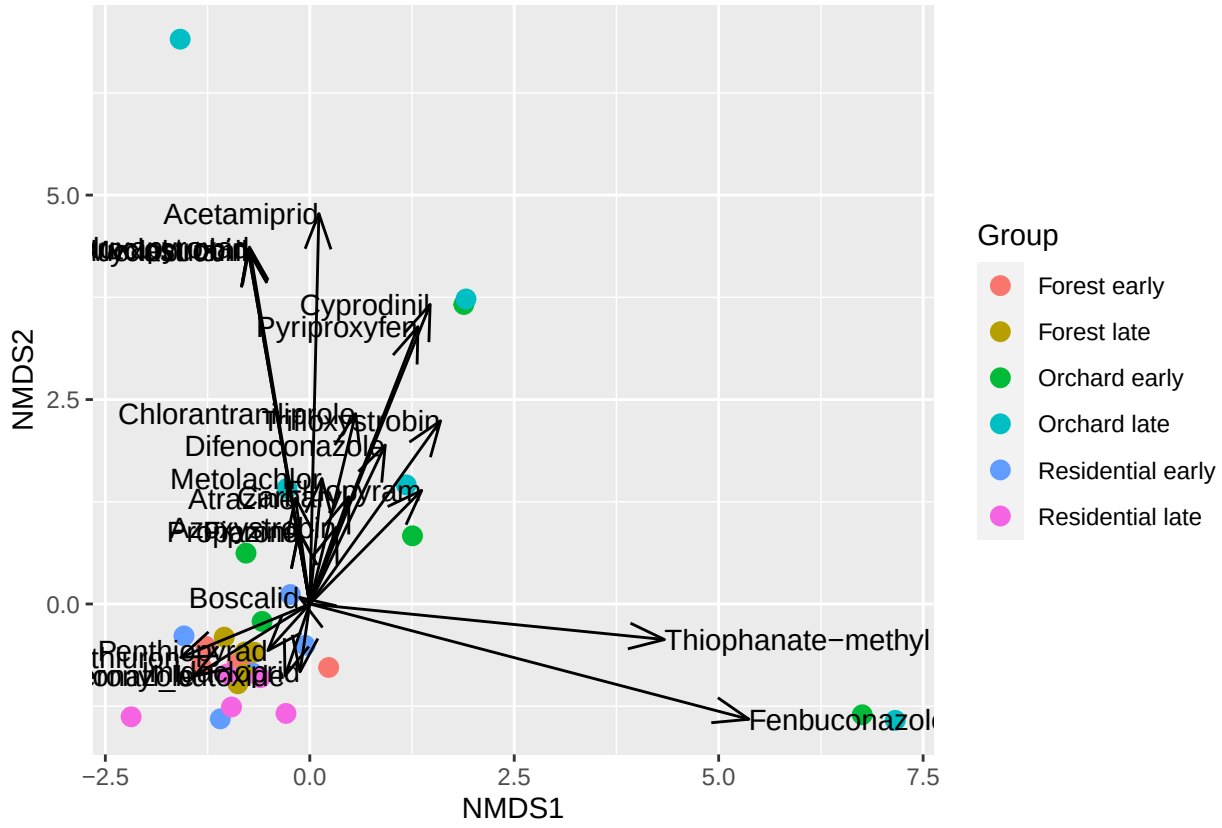
Total is the sum of all pesticides in that sample

```
## Permutation test for adonis under reduced model
```

```
## Terms added sequentially (first to last)
## Permutation: free
## Number of permutations: 9999
##
## adonis2(formula = pest_dist ~ as.factor(df_finding$site_sample), data = df_finding, permutations = 9
##                                  Df SumOfSqs      R2      F Pr(>F)
## as.factor(df_finding$site_sample)  5   2.7720 0.29917 2.0491  4e-04 ***
## Residual                          24   6.4936 0.70083
## Total                             29   9.2656 1.00000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

3D NMDS, k=3, data is log transformed+1, stress = .105

2d NMDS, k=2, data is non transformed, stress =.08


Acetamiprid
Cyprodinil
Pyriproxyfen
Chlorantraniliprole
Trifloxystrobin
Difenoconazole
Metolachlor
Boscalid
Thiophanate−methyl
Fenbuconazol
NMDS1
NMDS2
5.0
2.5
0.0
−2.5
0.0
2.5
5.0
7.5
Group
Forest early
Forest late
Orchard early
Orchard late
Residential early
Residential late

Pescitice exposure