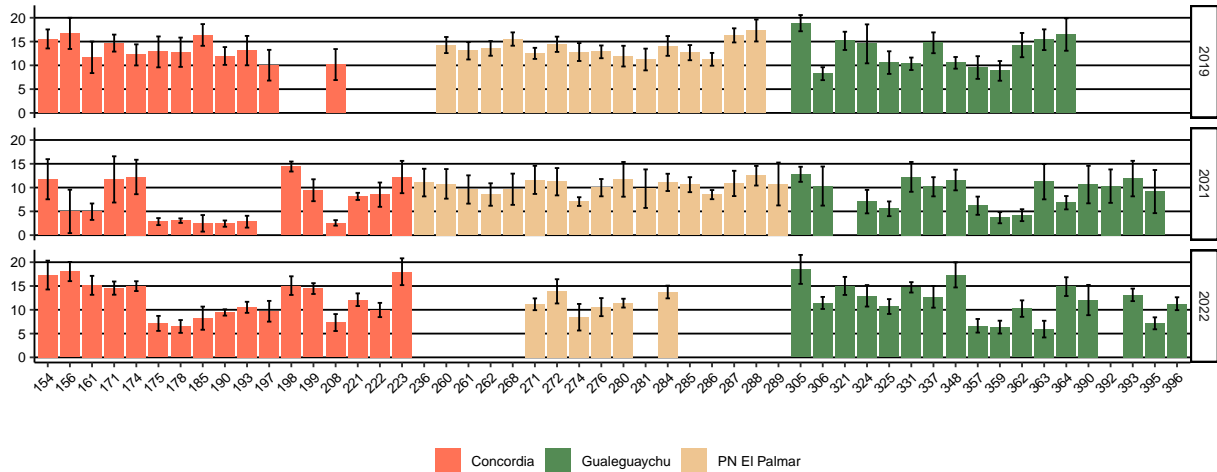# Variables reproductivas
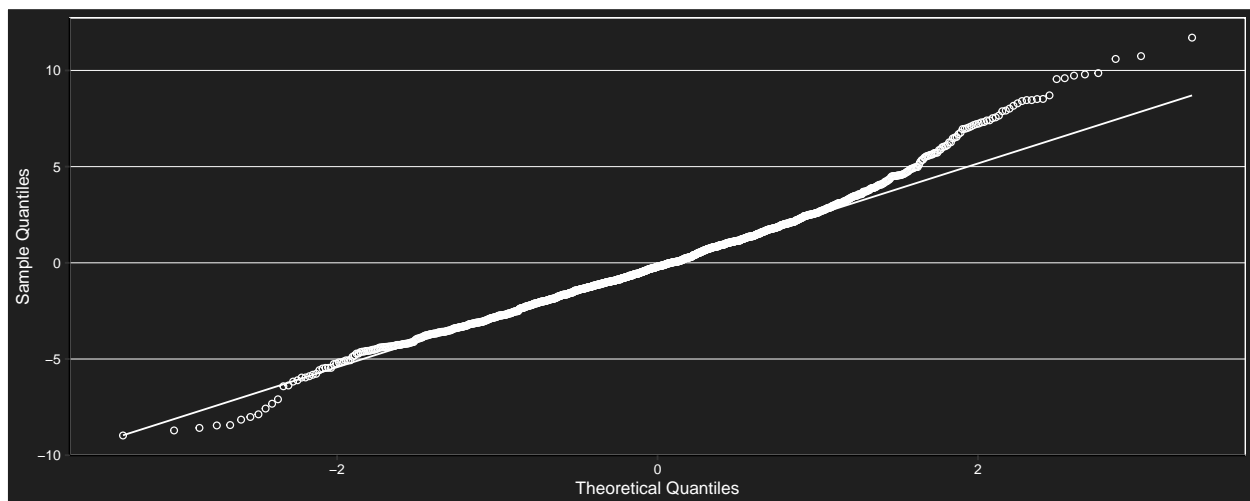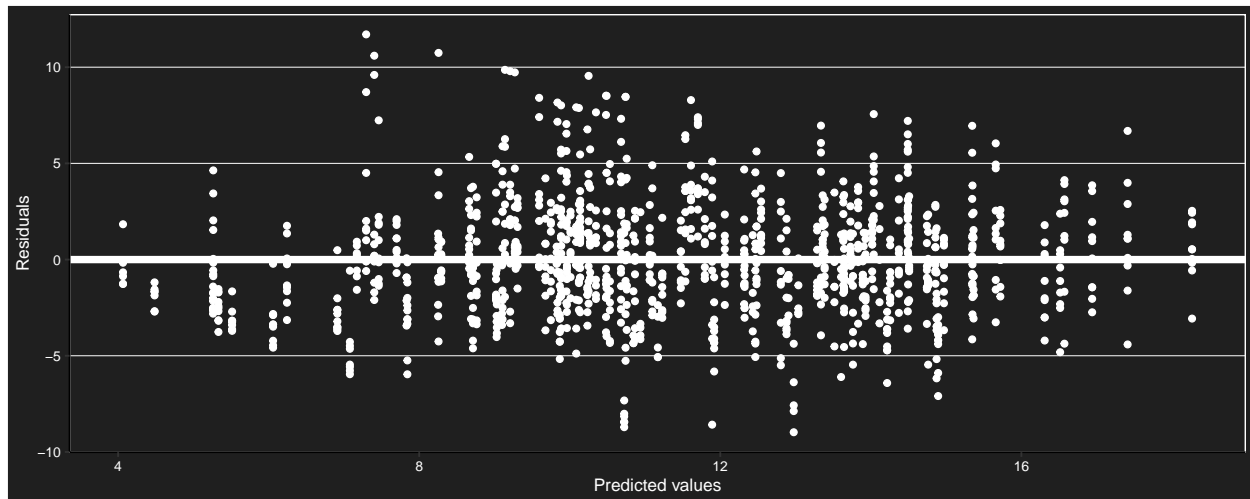
Peso seco de botones florales en fases C/D

Modelo ajustado

```
## Linear mixed model fit by REML ['lmerModLmerTest']
## Formula: ps_flor ~ (1 | year) + (1 | site/phenotype)
##    Data: datosff
## REML criterion at convergence: 6086.551
## Random effects:
##  Groups          Name        Std.Dev.
##  phenotype:site (Intercept) 2.2939
##  site           (Intercept) 0.3143
##  year           (Intercept) 2.4651
##  Residual                   3.0106
## Number of obs: 1178, groups:  phenotype:site, 52; site, 3; year, 3
## Fixed Effects:
## (Intercept)
##       11.68
```

Verificación de supuestos

```
##
##  Shapiro-Wilk normality test
##
## data:  e
## W = 0.98207, p-value = 6.87e-11


##
##  Shapiro-Wilk normality test
##
## data:  betai
## W = 0.98051, p-value = 0.5477
```
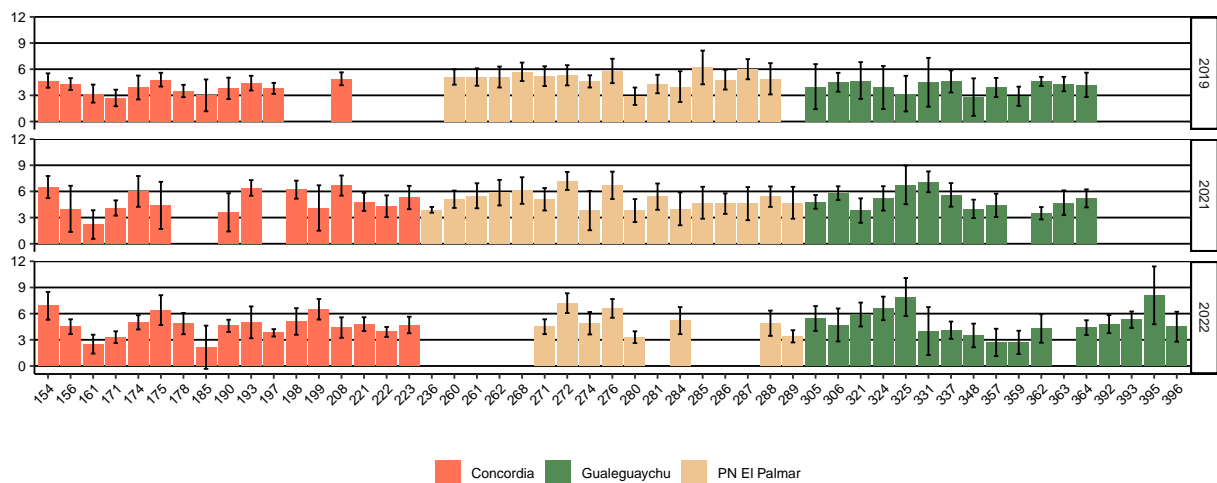
Resumen del modelo

```
## Linear mixed model fit by REML. t-tests use Satterthwaite's method ['lmerModLmerTest']
## Formula: ps_flor ~ (1 | year) + (1 | site/phenotype)
##    Data: datosff
##
```
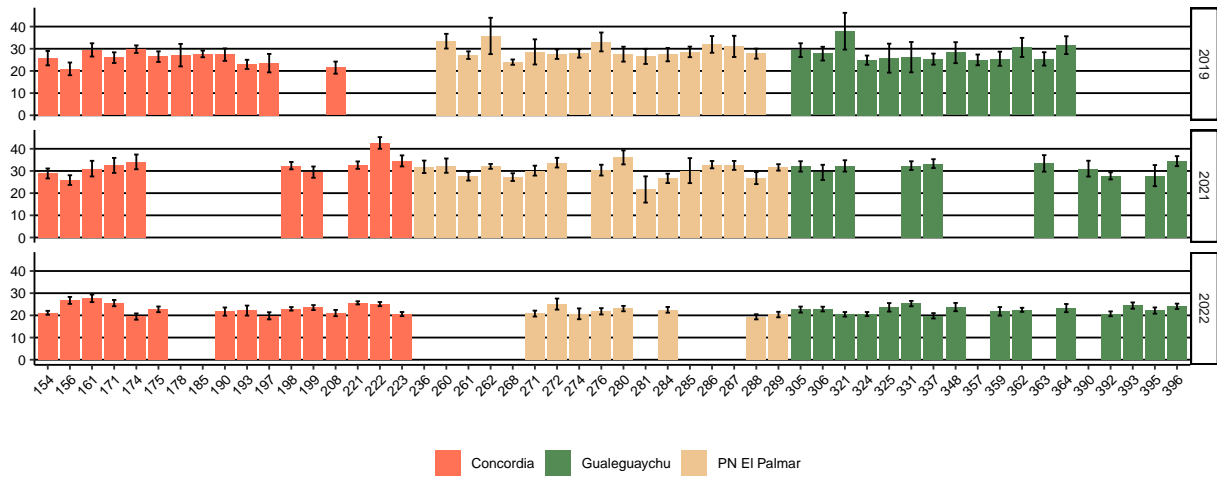
```
## REML criterion at convergence: 6086.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.9813 -0.6367 -0.0643  0.5496  3.8878
##
## Random effects:
##  Groups         Name        Variance Std.Dev.
##  phenotype:site (Intercept) 5.2620   2.2939
##  site           (Intercept) 0.0988   0.3143
##  year           (Intercept) 6.0769   2.4651
##  Residual                   9.0637   3.0106
## Number of obs: 1178, groups:  phenotype:site, 52; site, 3; year, 3
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)   11.683      1.473   2.262   7.934   0.0107 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```
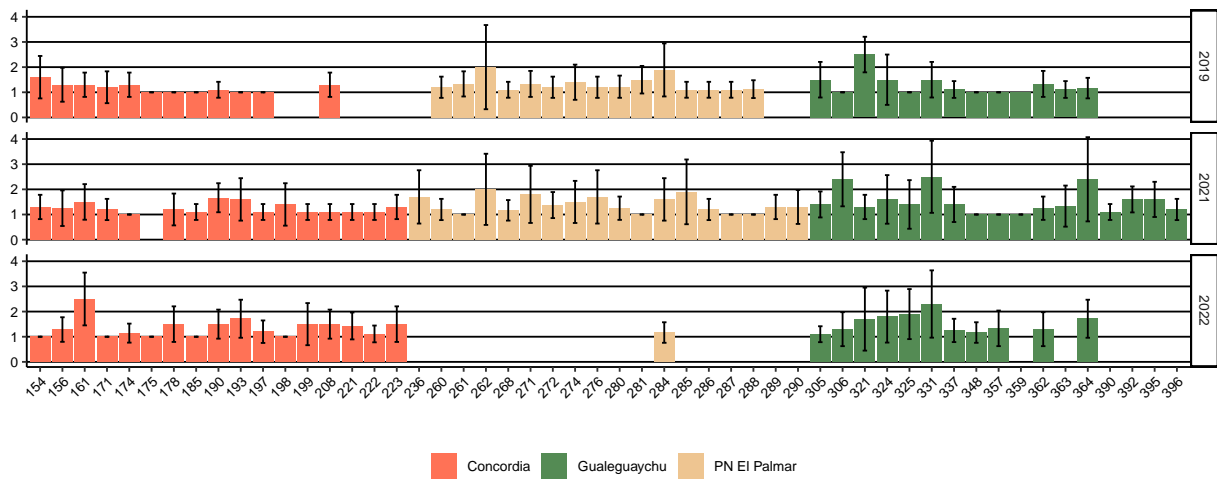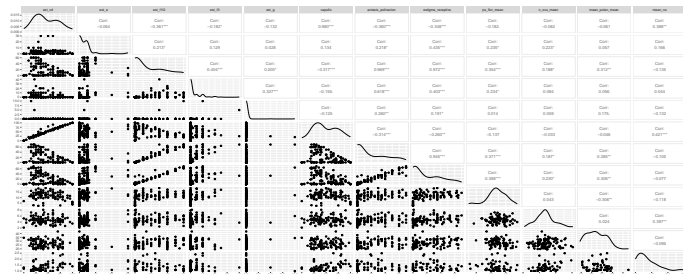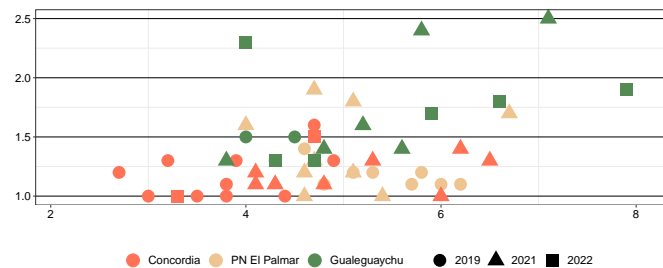
Número de óvulos por flor

Diámetro medio de polen ()

Concordia   Gualeguaychu   PN El Palmar

Número de semillas por fruto

Concordia   Gualeguaychu   PN El Palmar

Correlaciones

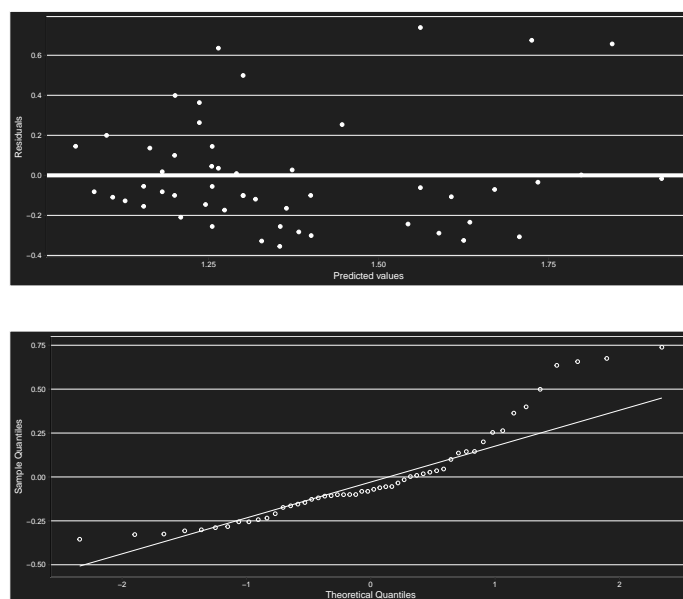**Correlación N° de semillas y N° de óvulos**


```
## [1] 0.3966561
```

Modelo

```
## Linear mixed model fit by REML ['lmerModLmerTest']
## Formula: mean_ns ~ n_ovu_mean + (1 | year) + (1 | site)
##    Data: df_ovusem
## REML criterion at convergence: 28.0874
## Random effects:
##  Groups   Name        Std.Dev.
##  year     (Intercept) 0.0000
##  site     (Intercept) 0.2272
##  Residual             0.2818
## Number of obs: 52, groups:  year, 3; site, 3
## Fixed Effects:
## (Intercept)   n_ovu_mean
##     0.94804      0.09094
## optimizer (nloptwrap) convergence code: 0 (OK) ; 0 optimizer warnings; 1 lme4 warnings
```

Verificación de supuestos

```
## 
##  Shapiro-Wilk normality test
## 
## data:  e
## W = 0.88056, p-value = 8.662e-05
```