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BP

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1. Fv/Fm (szalka, concentration, yield) - yield.csv

- Kontola (brak hormonów) - kontrola
- 2mg/ IAA 1mg/l K - alfa
- 2 mg/l IAA - beta
- 2 mg/l IAA 1 mg/l BAP - gamma
- 0,5 mg/l 2,4d 0,25mg/l bap - delta
- 2mg/l 2,4-D 1 mg/l BAP - epsilon
- 1 mg/l 2,4-D 0,5 mg/l BAP - dzeta

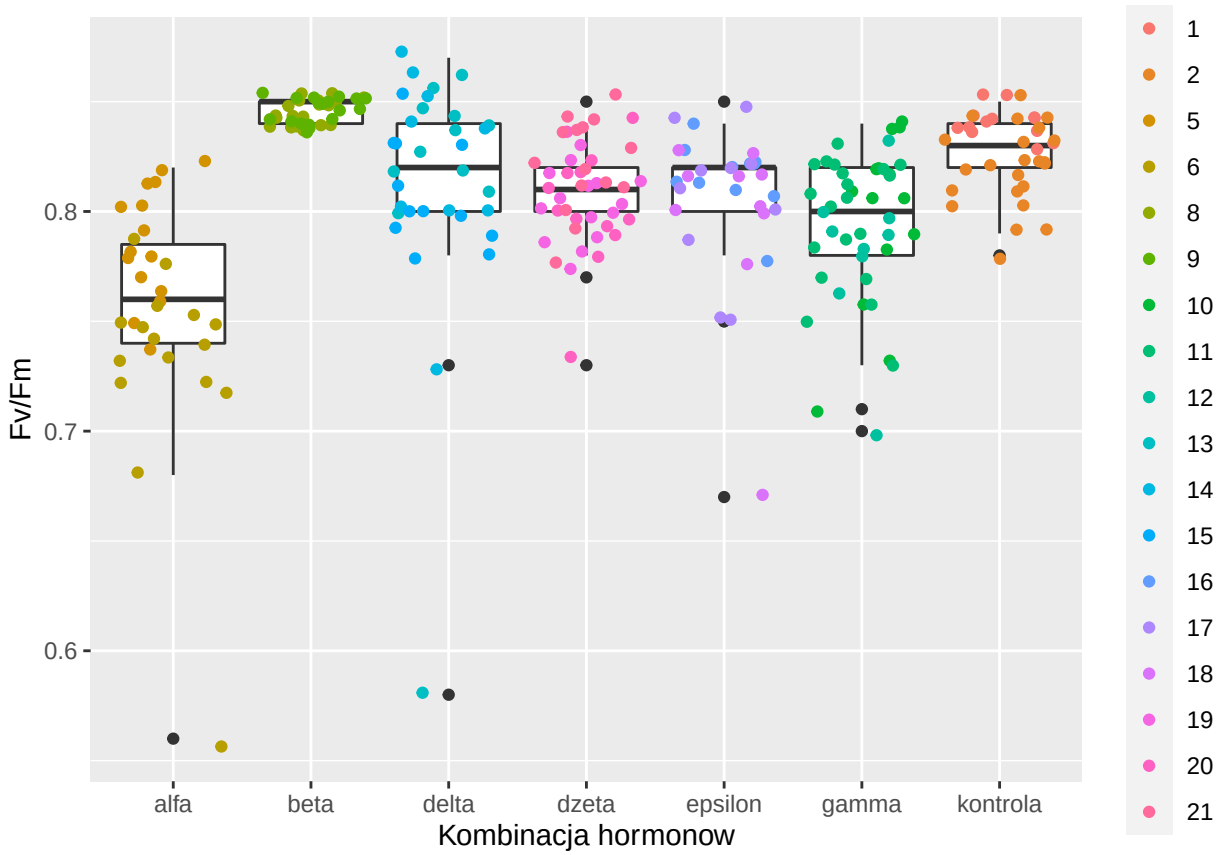
```
library(ggplot2)
library(ggpubr)
```

```
## Loading required package: magrittr
```

```
yield = read.csv("./yield.csv")
yield$szalka = as.factor(yield$szalka)
yield$concentration = as.factor(yield$concentration)
summary(yield)
```

```
##      szalka     concentration     yield
##  2      : 23   alfa    :31    Min.   :0.5600
##  8      : 20   beta    :38    1st Qu.:0.7900
##  11     : 20   delta   :33    Median :0.8200
##  9      : 18   dzeta   :43    Mean   :0.8082
##  6      : 16   epsilon :31    3rd Qu.:0.8400
##  5      : 15   gamma   :43    Max.   :0.8700
##  (Other):143   kontrola:36
```

```
ggplot(data = yield) +
  geom_boxplot(aes(x=concentration, y=yield)) +
  geom_jitter(aes(x=concentration, y=yield, color=szalka)) +
  xlab("Kombinacja hormonow") +
  ylab("Fv/Fm")
```




```
kruskal.test(yield ~ concentration, data = yield)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  yield by concentration
## Kruskal-Wallis chi-squared = 123.67, df = 6, p-value < 2.2e-16
```

```
View(compare_means(yield ~ concentration, data = yield))
```