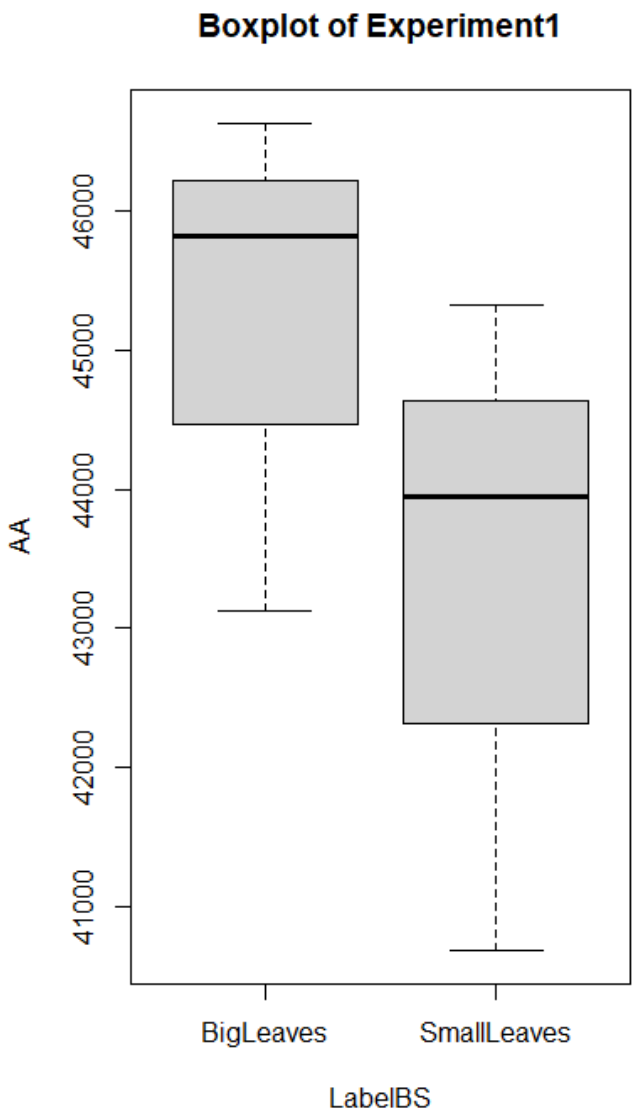
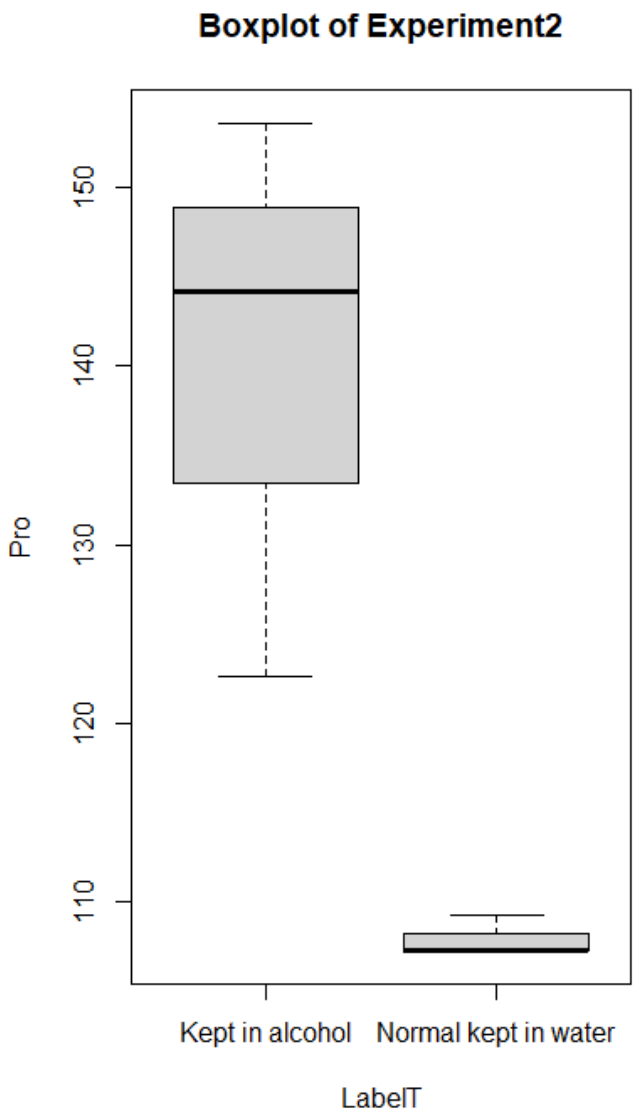
1.输入原始数据并根据下列公式计算

$$C_a = \frac{(A - 0.0737)44V_{样}}{0.0054W_{样}}$$

$$C_{脯} = \frac{(A + 0.0021)2V_2}{0.0521W}$$

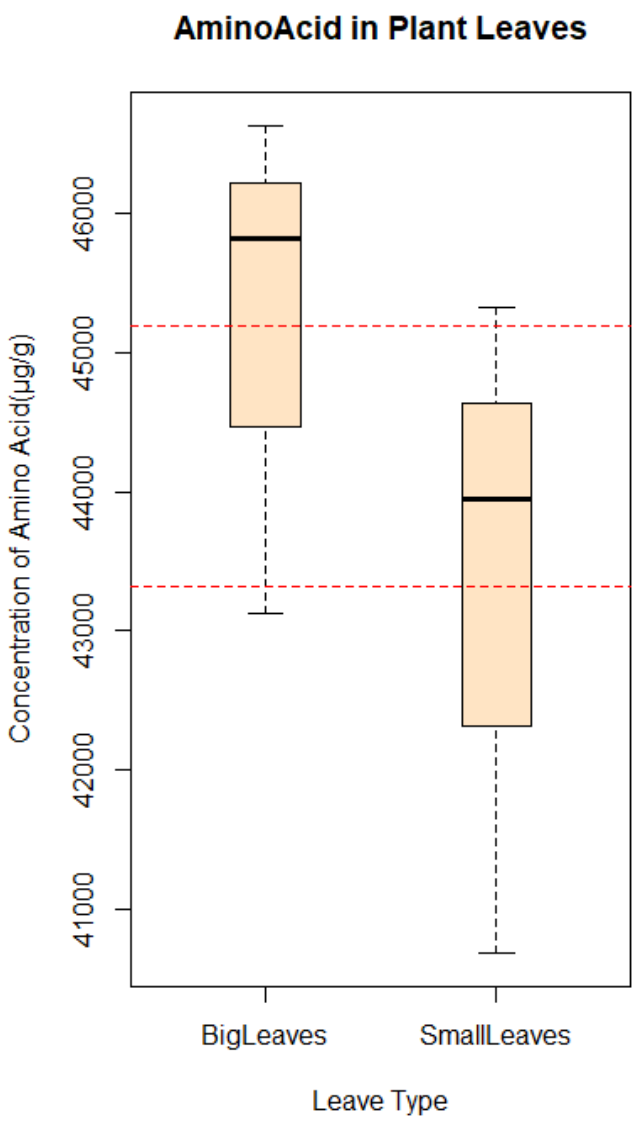
2.利用箱线图进行数据检查

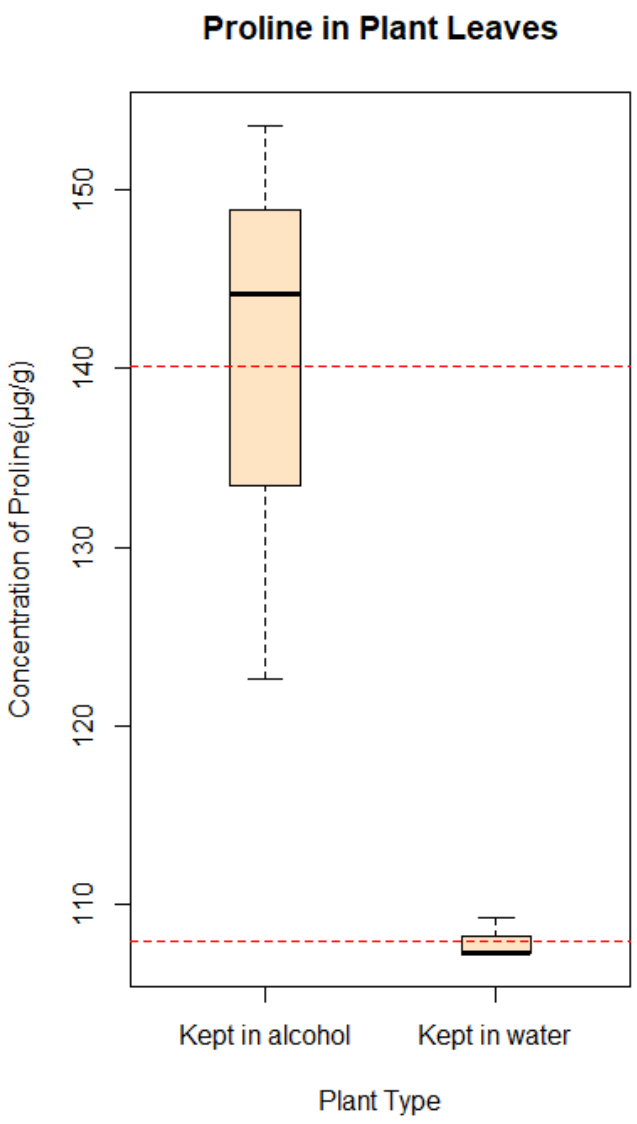




本次实验没有超过四分位距1.5倍的或需要人工筛除的数据,无需进行数据清洗.

3.最终结果





各组统计性描述如下

大叶

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
43128	44473	45817	45192	46224	46632R

小叶

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
43128	44473	45817	45192	46224	46632R

正常植物叶

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
122.7	133.4	144.2	140.1	148.9	153.6

逆境植物叶

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
107.3	107.3	107.3	108.0	108.3	109.2

3.显著性差异检验 Kruskal-Wallis rank sum test

数据未通过正态性和方差齐性检验，采取非参数检验的方式。

```
> kruskal.test(list(AA[1:3],AA[4:6]))   #无显著差异

        Kruskal-Wallis rank sum test

data:  list(AA[1:3], AA[4:6])
Kruskal-Wallis chi-squared = 1.1905, df = 1, p-value = 0.2752

> kruskal.test(list(Pro[1:3],Pro[4:6])) #有显著差异

        Kruskal-Wallis rank sum test

data:  list(Pro[1:3], Pro[4:6])
Kruskal-Wallis chi-squared = 3.9706, df = 1, p-value = 0.0463
```

这表明大叶和小叶之间的氨基酸含量**无显著差别**$(p-value=0.2752>0.05)$

逆境植物叶和正常植物叶脯氨酸含量**有显著差别**$(p-value=0.0463<0.05)$.

代码详见 https://github.com/Yirios/Data-Analysis-in-Biochemistry/branches