

# Use side-view HSI data to predict N

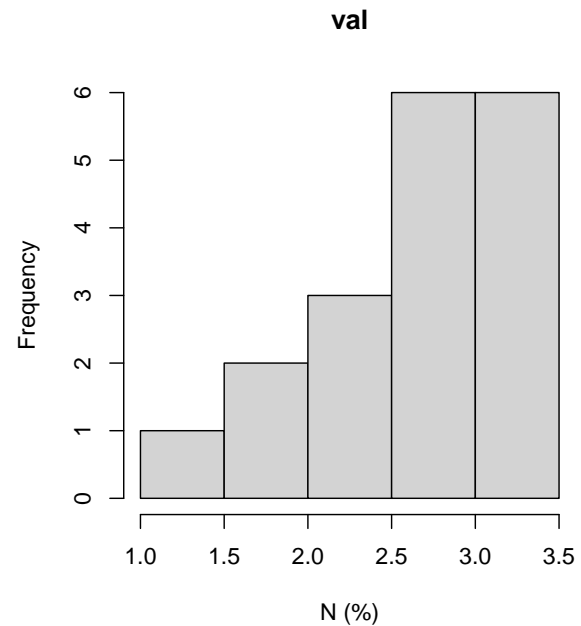
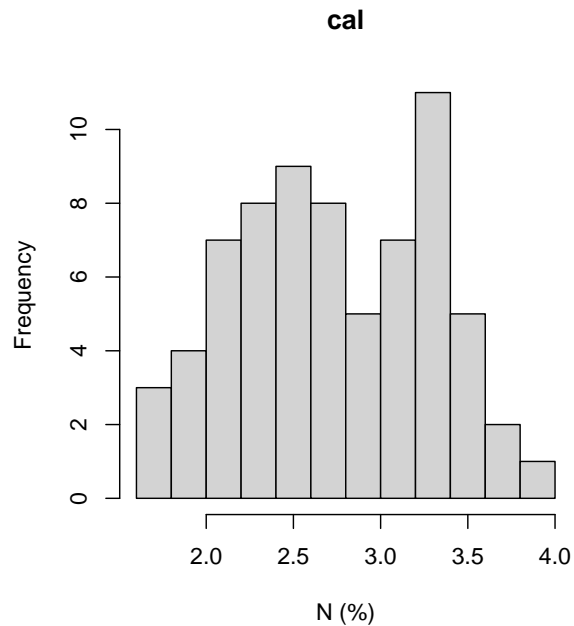
2023-08-08

```
## $plsralg
## [1] "oscorespls"

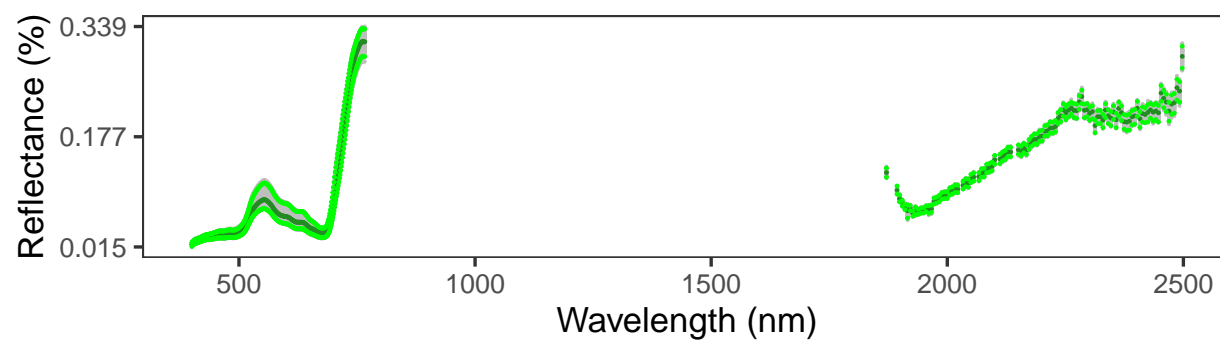
## [1] "905" "943" "902" "936" "925" "916" "920" "935" "923" "940" "911" "908"
## [13] "910" "917" "937" "906" "934" "927" "947" "931" "929" "903" "945" "914"
## [25] "933" "946" "904" "907" "924" "918" "919" "948" "932" "915" "922" "996"
## [37] "974" "955" "992" "977" "994" "991" "975" "984" "965" "951" "969" "973"
## [49] "987" "990" "950" "970" "980" "957" "982" "995" "962" "993" "978" "956"
## [61] "960" "968" "953" "963" "972" "958" "983" "971" "985" "989"

## [1] "909" "912" "921" "926" "928" "930" "941" "942" "944" "952" "954" "959"
## [13] "966" "967" "979" "981" "986" "988"

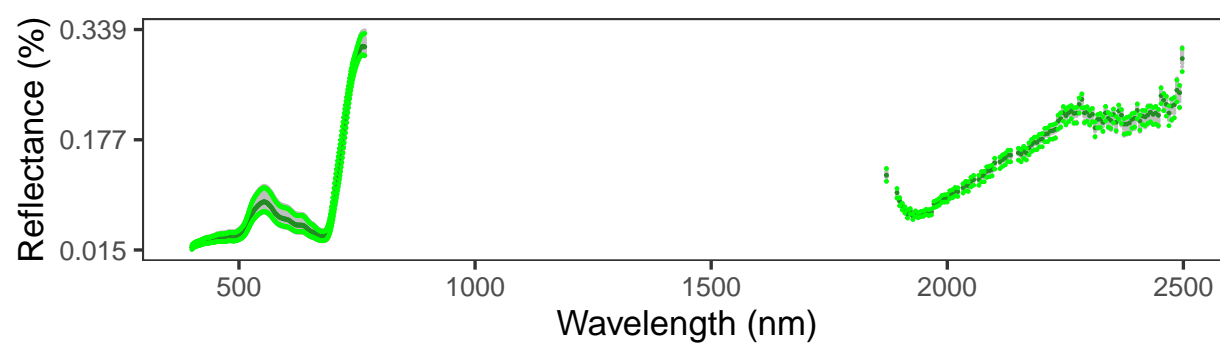
##           value      wv
## 687 -0.03022188 2178.7600
## 686 -0.03059572 2173.1700
## 295 -0.03325115  766.4323
## 664 -0.03332838 2050.1900
## 683 -0.03572507 2156.4000
## 632 -0.03640233 1871.2300
```

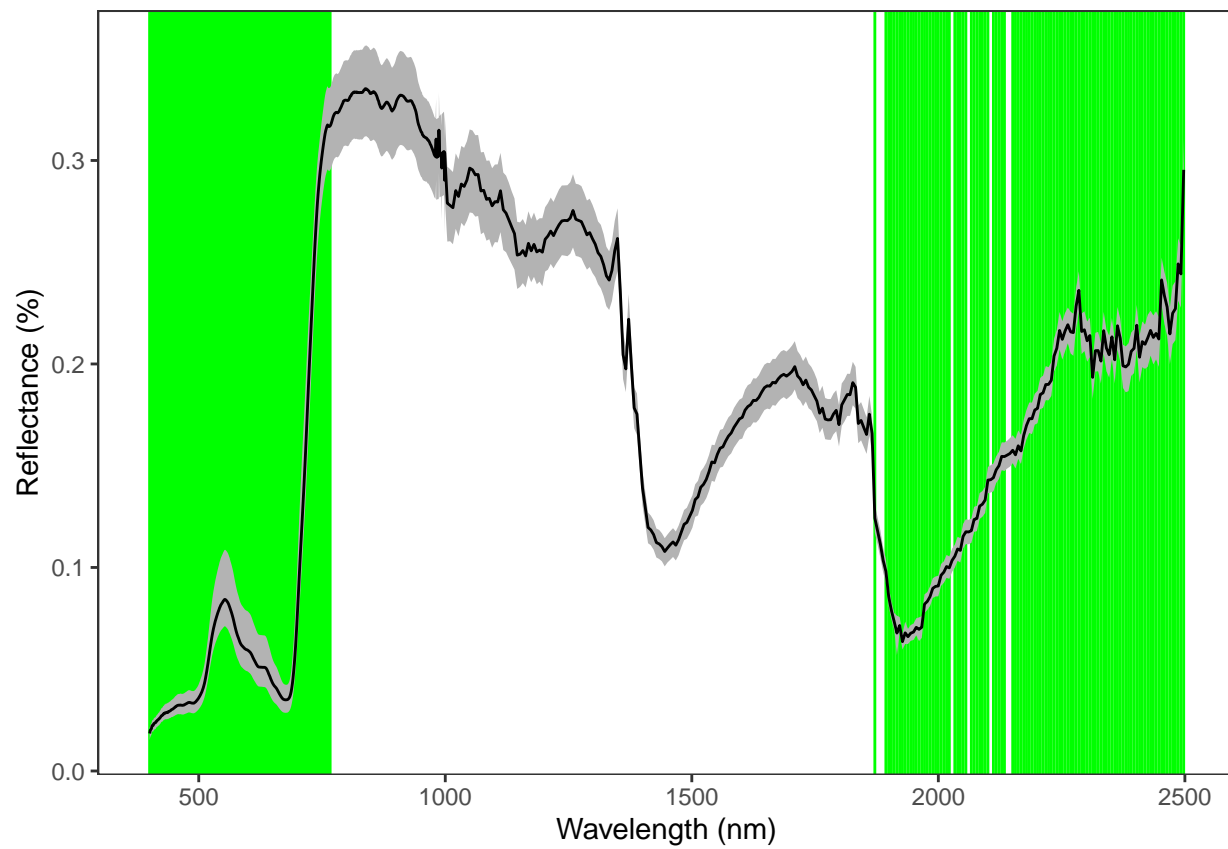


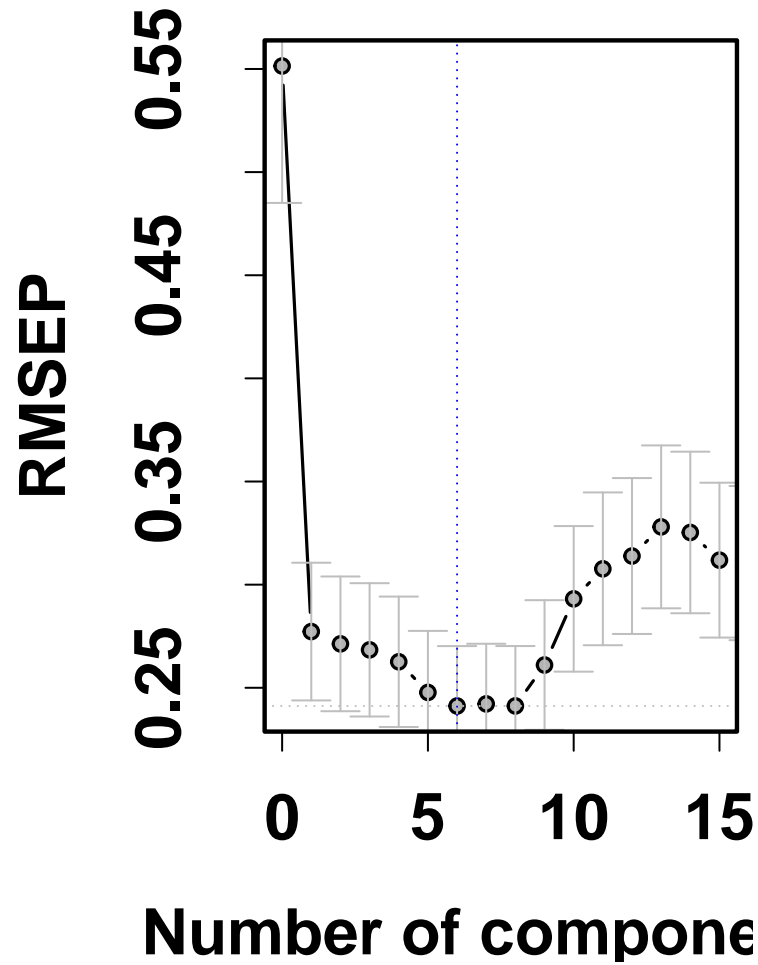
N calibration dataset



N validation dataset

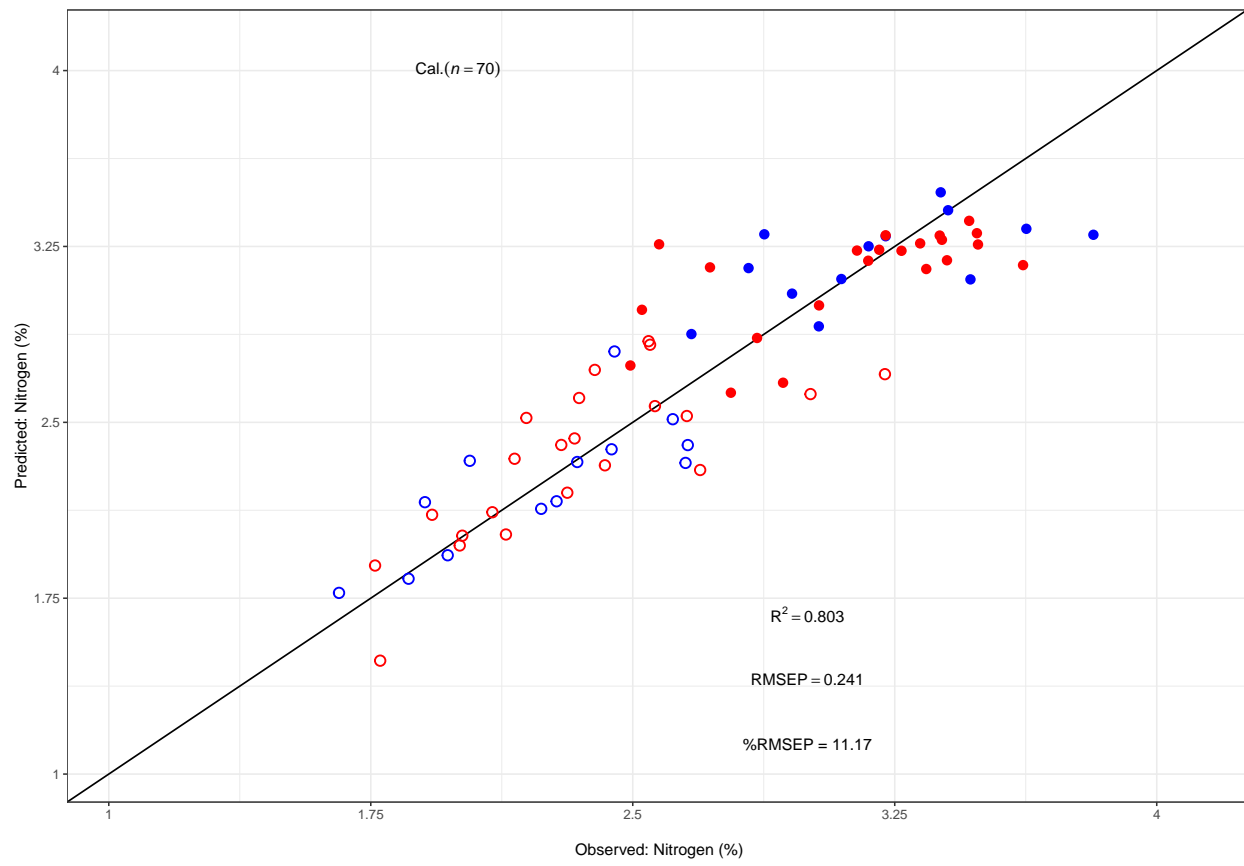


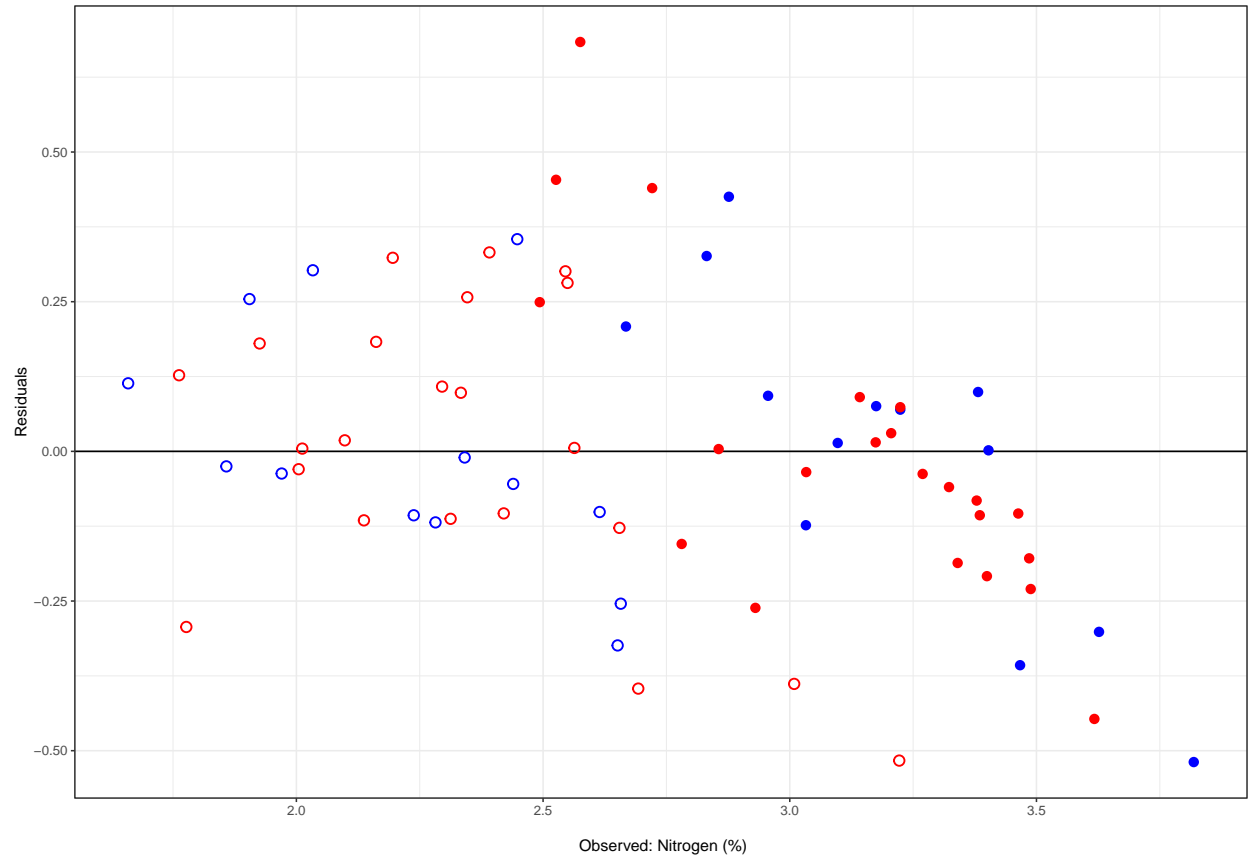


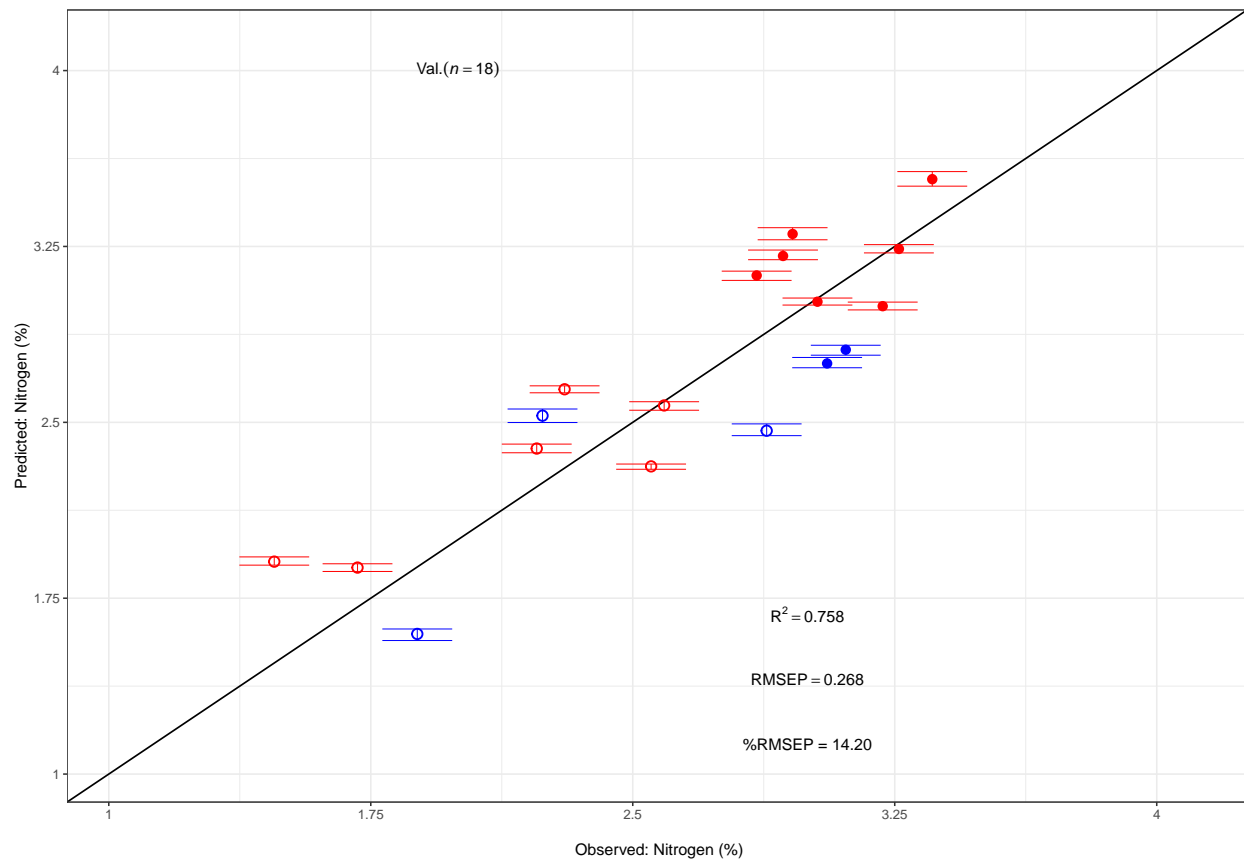


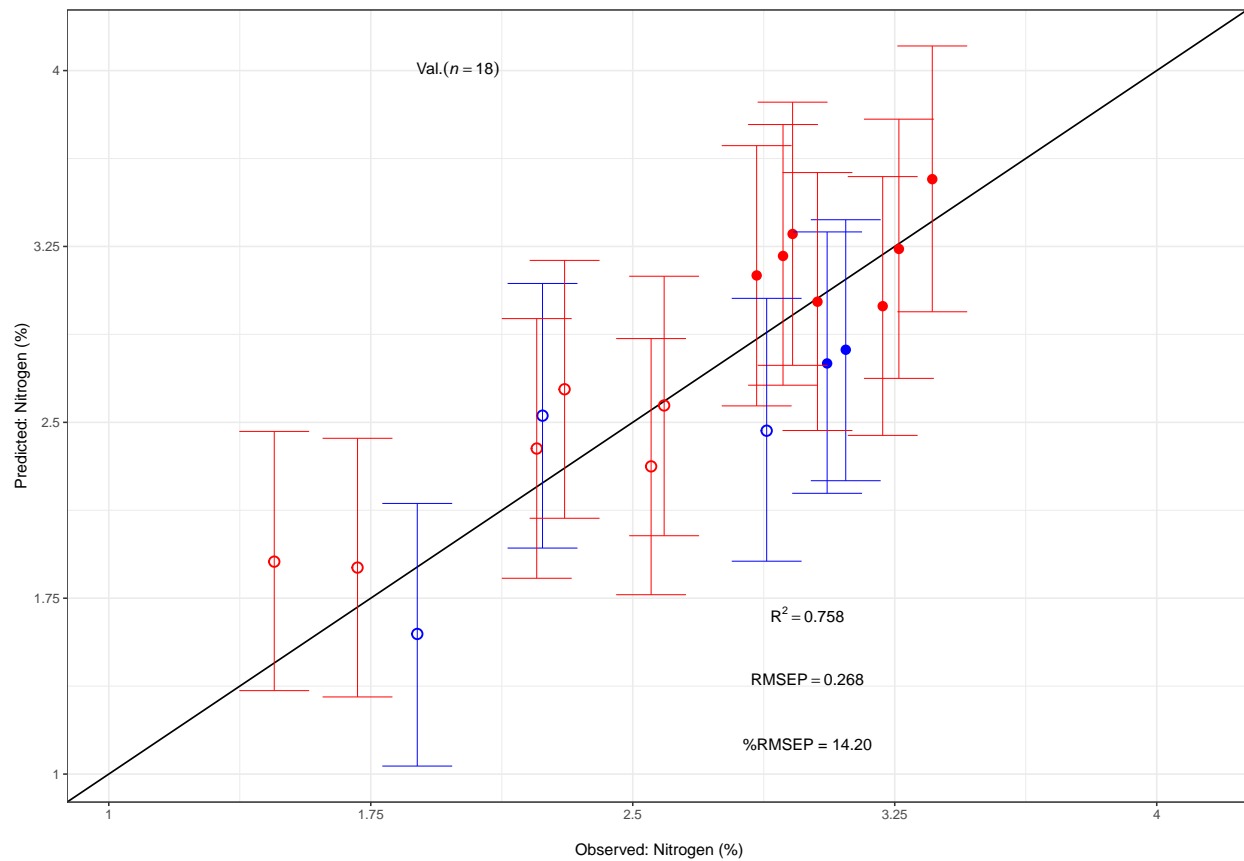
```
## data_set    R2 RMSEP NRMSEP
## 1      cal 0.803 0.241 11.167
## 2      val 0.758 0.268 14.203
```

```
## Observed Predicted Residuals Treatment Subpop    uci    lci    upi
## 1  3.10975  2.809517 -0.30023313      N1     TRJ  2.828764  2.786260  3.363957
## 2  3.05645  2.751124 -0.30532576      N1     TRJ  2.776660  2.732696  3.311971
## 3  2.93020  3.209558  0.27935803      N1     IND  3.234678  3.193488  3.769827
## 4  3.26190  3.239447 -0.02245317      N1     IND  3.257744  3.222559  3.792848
## 5  2.85470  3.126340  0.27164013      N1     IND  3.144763  3.105280  3.679914
## 6  2.95760  3.303268  0.34566787      N1     IND  3.330003  3.278467  3.865414
##      lpi
## 1  2.251067
## 2  2.197385
## 3  2.658339
## 4  2.687455
## 5  2.570129
## 6  2.743056
```

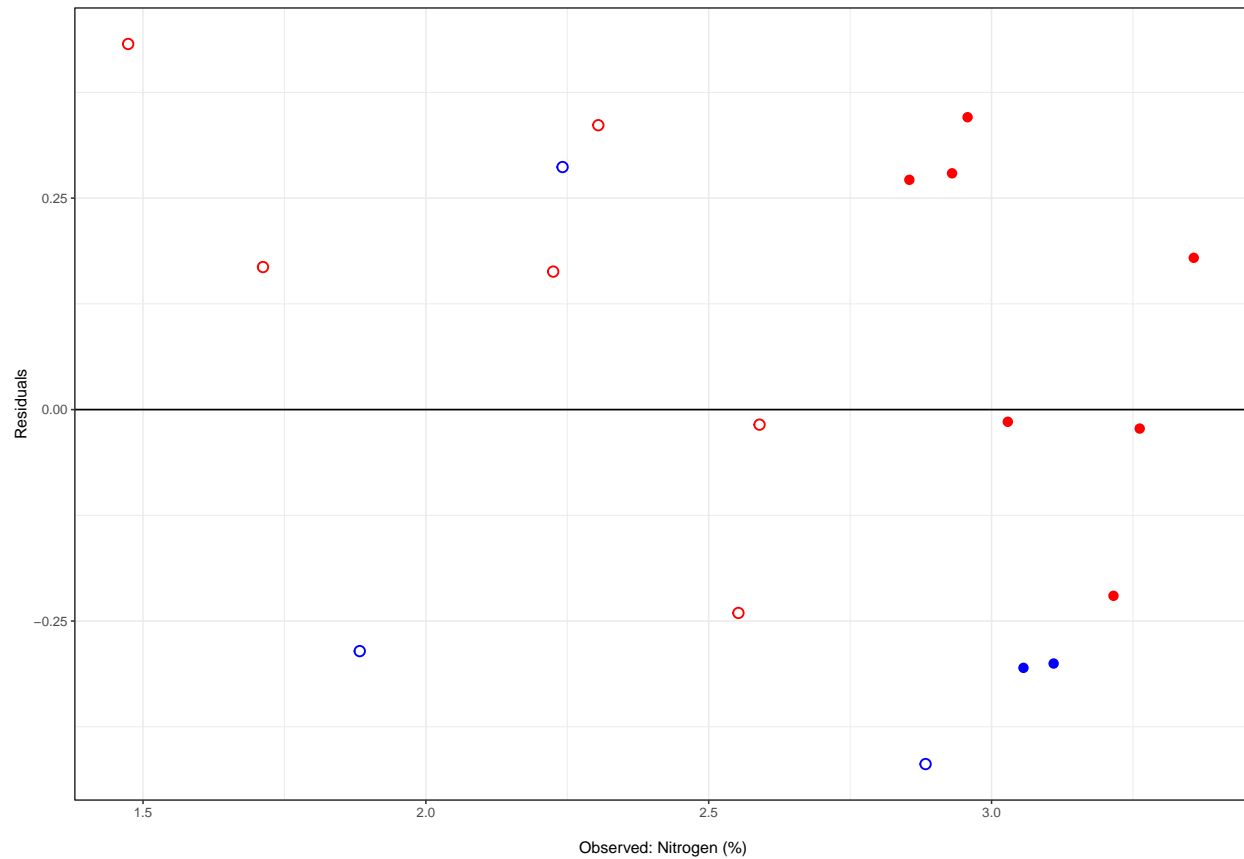












```
##      Iteration Intercept  X700.08782  X698.81871  X536.00432  X537.24032
## Seg 1          1  3.329553 -0.07149339  0.04984556 -0.2278979 -0.2425063
## Seg 2          2  2.893939 -0.09707244  0.02493314 -0.2375046 -0.2535620
## Seg 3          3  3.360428 -0.08213637  0.03644940 -0.2226417 -0.2366233
## Seg 4          4  3.303507 -0.16199509 -0.02781440 -0.2429203 -0.2549383
## Seg 5          5  3.056691 -0.10669024  0.01622338 -0.2281566 -0.2419414
## Seg 6          6  3.362579 -0.08136054  0.03745948 -0.2254170 -0.2389338
```

```
##              coefs
## 700.08782 -0.08425008
## 698.81871  0.03414143
## 536.00432 -0.22252092
## 537.24032 -0.23642476
## 540.9498  -0.24719399
## 534.7686  -0.21989864
```