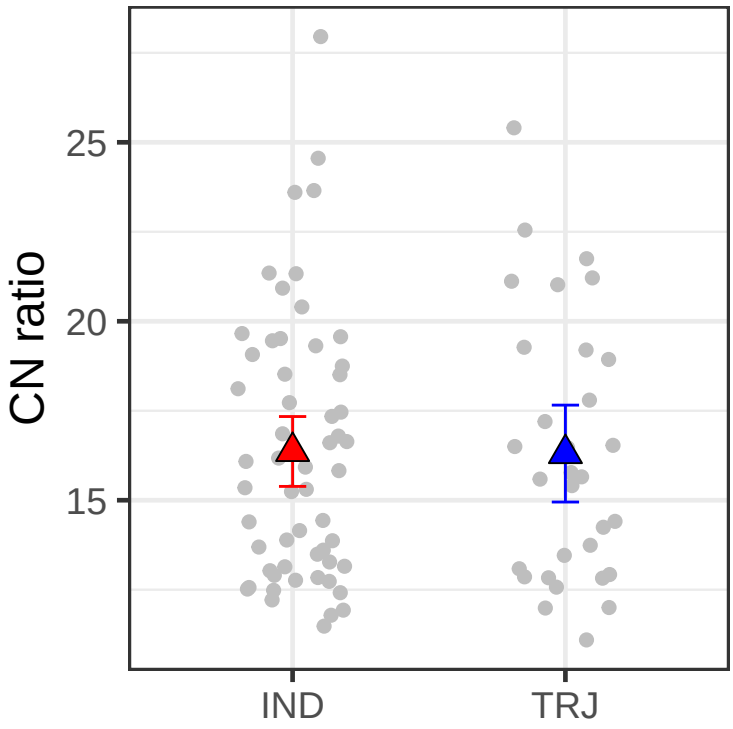
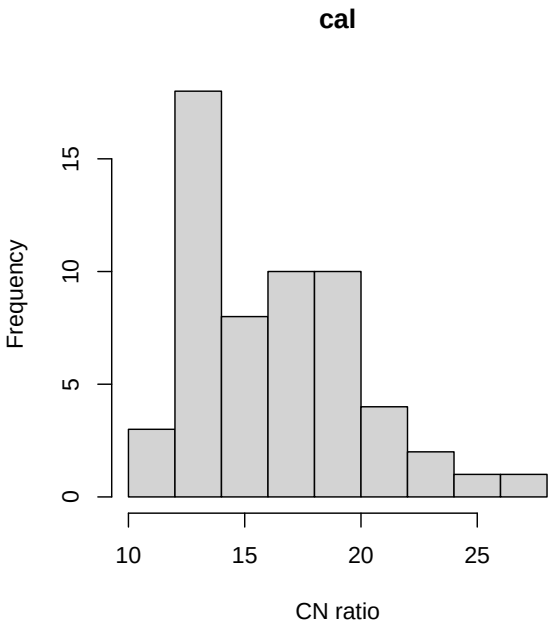
Use side-view HSI data to predict CN ratio from Indica data

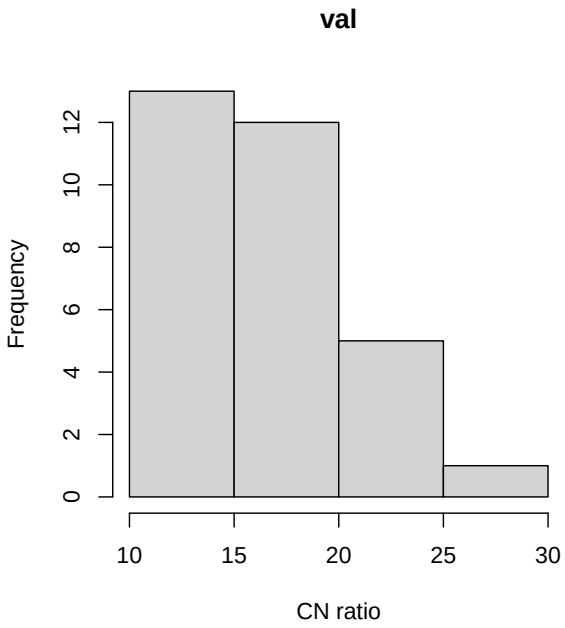
```
##
## IND TRJ
##  57  31
```

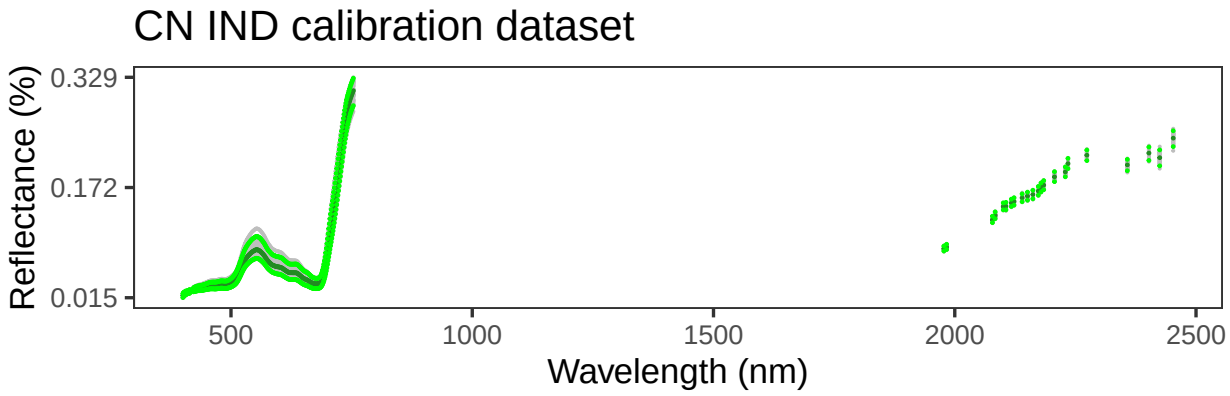


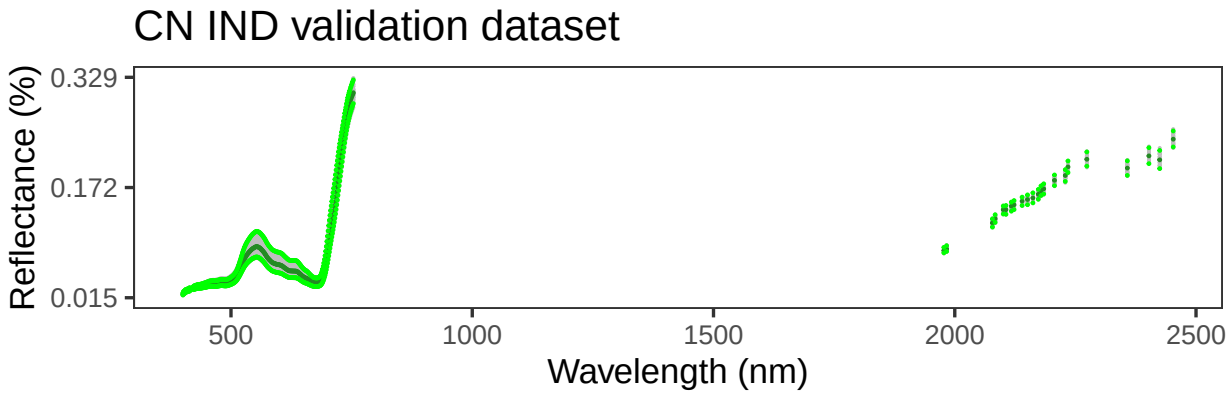

```
## $plsralg
## [1] "oscorespls"

##  [1] "904" "905" "906" "907" "908" "910" "911" "916" "918" "921" "922" "923"
## [13] "924" "926" "928" "929" "930" "931" "932" "933" "934" "935" "936" "937"
## [25] "940" "941" "942" "944" "947" "951" "953" "955" "956" "958" "959" "962"
## [37] "965" "966" "968" "969" "970" "972" "975" "979" "980" "981" "982" "984"
## [49] "986" "987" "988" "989" "990" "992" "994" "995" "996"

##  [1] "902" "903" "909" "912" "914" "915" "917" "919" "920" "925" "927" "943"
## [13] "945" "946" "948" "950" "952" "954" "957" "960" "963" "967" "971" "973"
## [25] "974" "977" "978" "983" "985" "991" "993"

##          value        wv
## 704 0.01555780 2273.8000
## 686 0.01518592 2173.1700
```

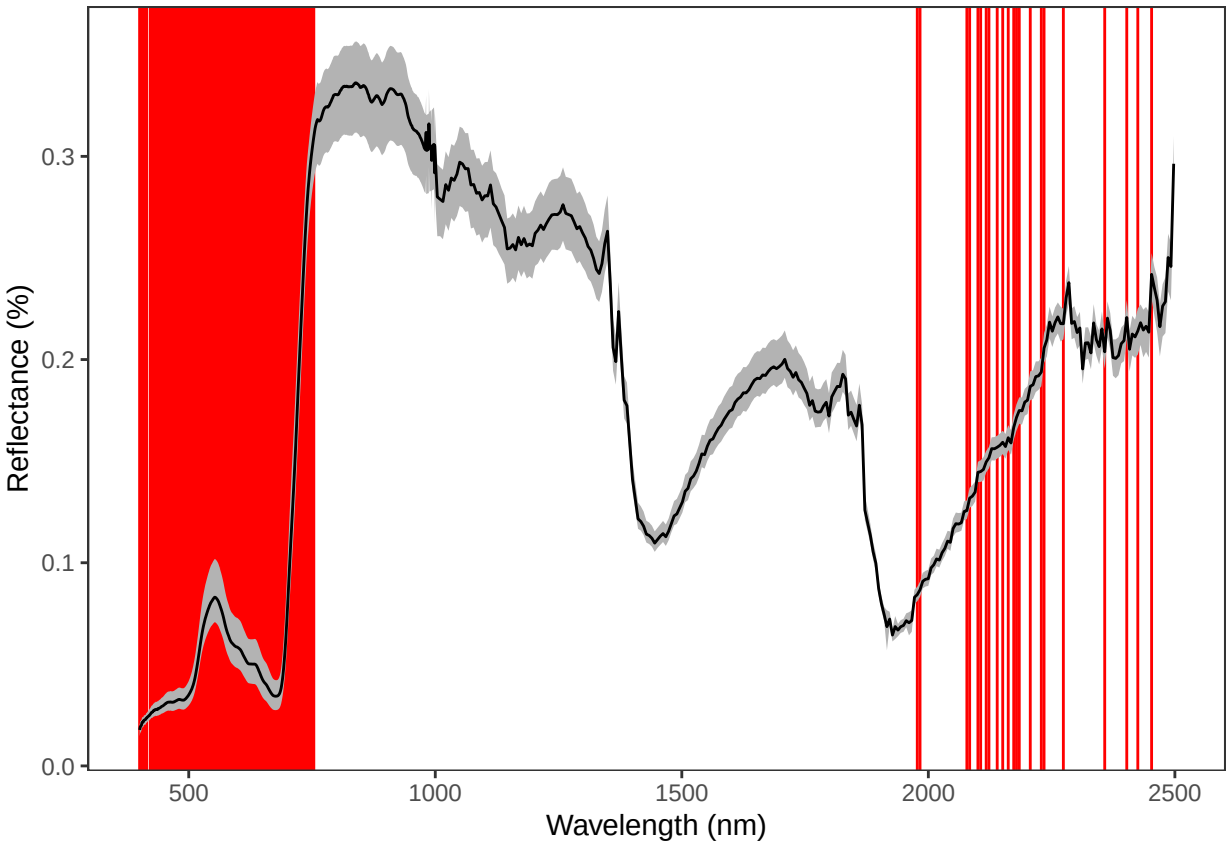
```
## 670 0.01515421 2083.7300
## 13  0.01446742  414.9026
## 684 0.01439382 2161.9900
## 674 0.01415092 2106.0900
```

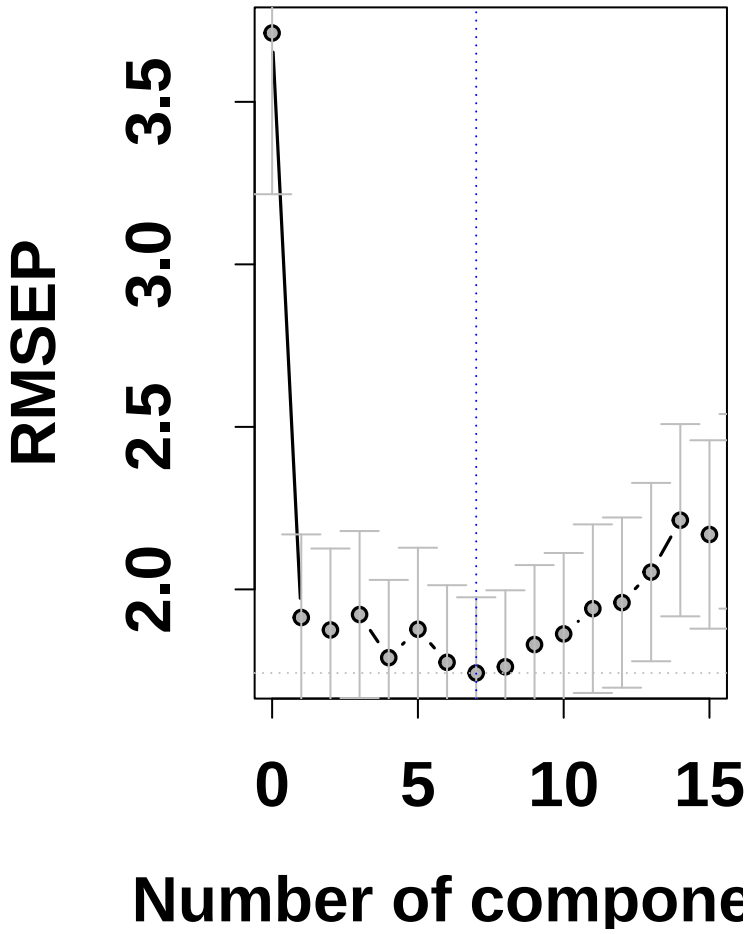





CN IND calibration dataset
Reflectance (%)
0.329
0.172
0.015
500
1000
1500
2000
2500
Wavelength (nm)

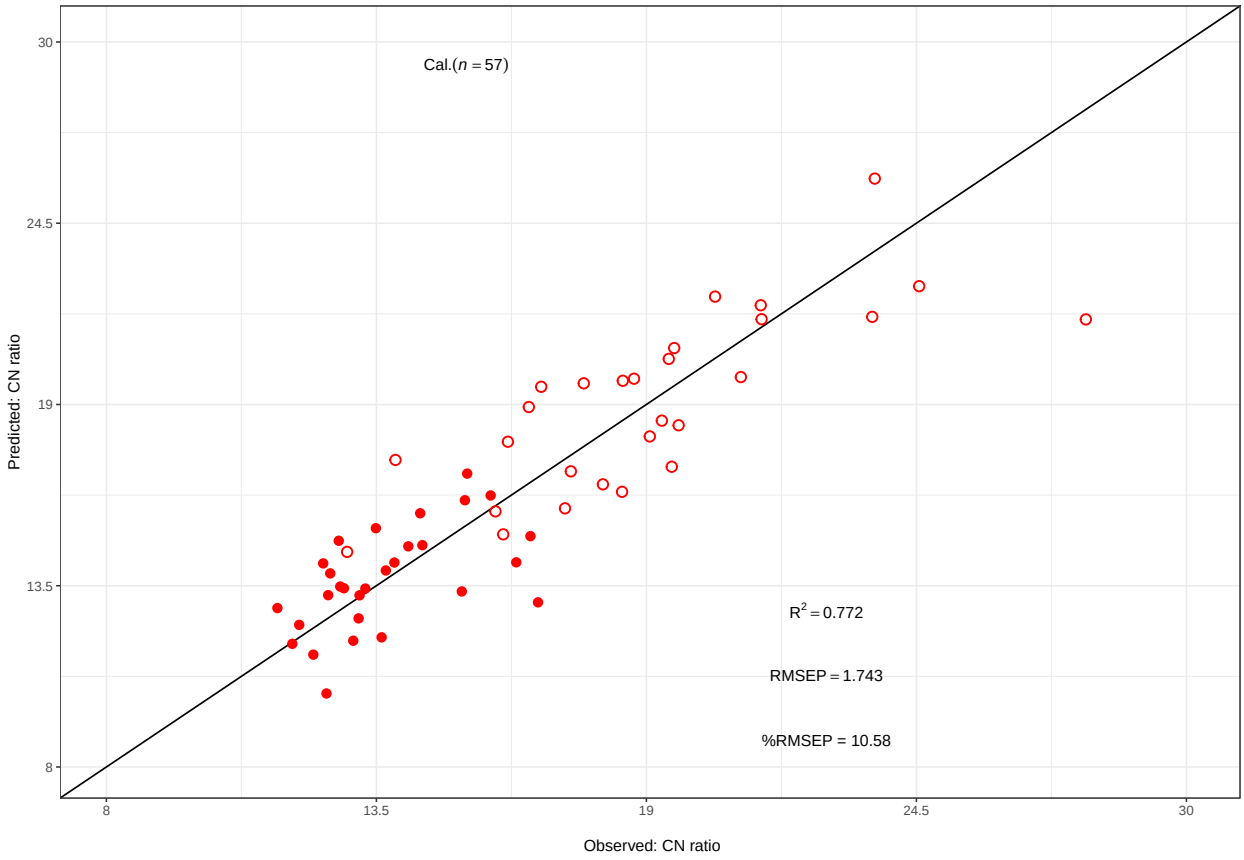

CN IND validation dataset
Reflectance (%)
0.329
0.172
0.015
500
1000
1500
2000
2500
Wavelength (nm)

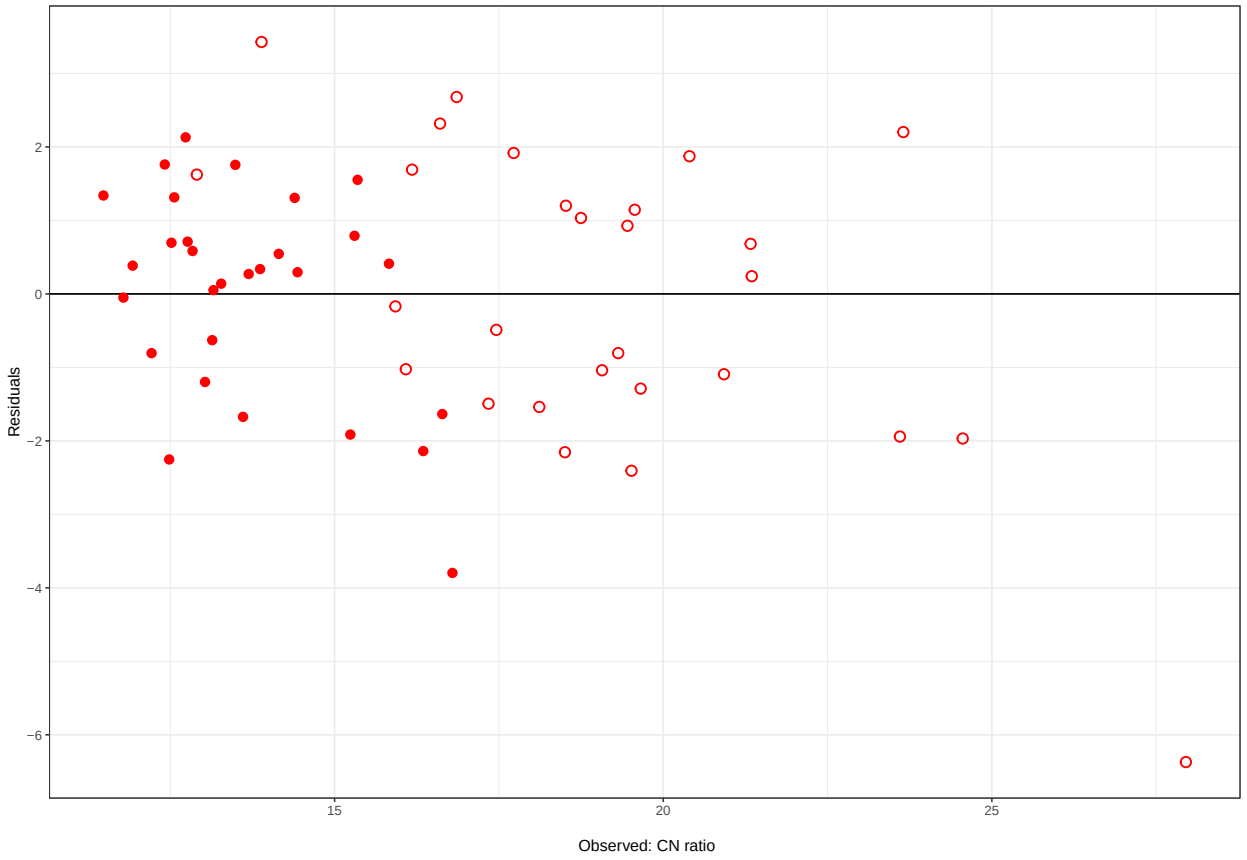

Reflectance (%)
0.3
0.2
0.1
0.0
500
1000
1500
2000
2500
Wavelength (nm)

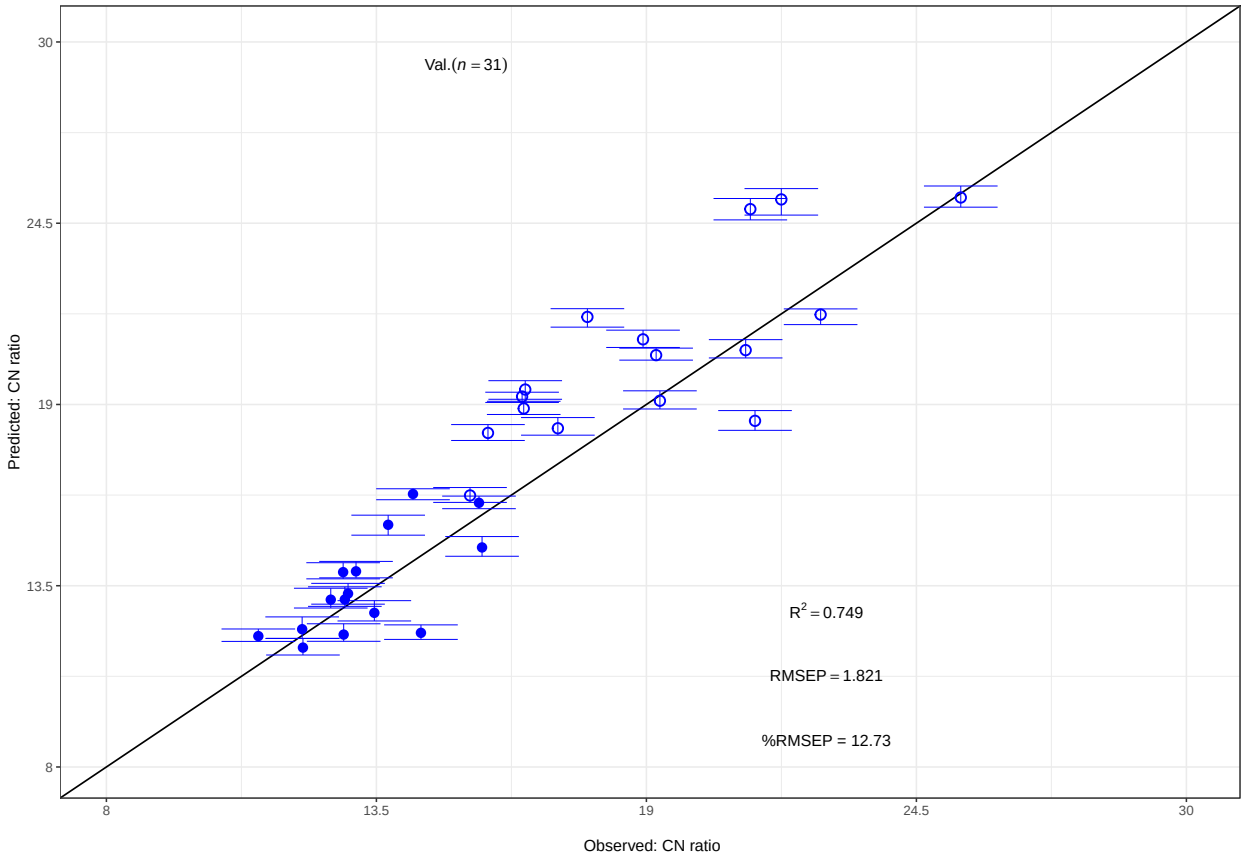


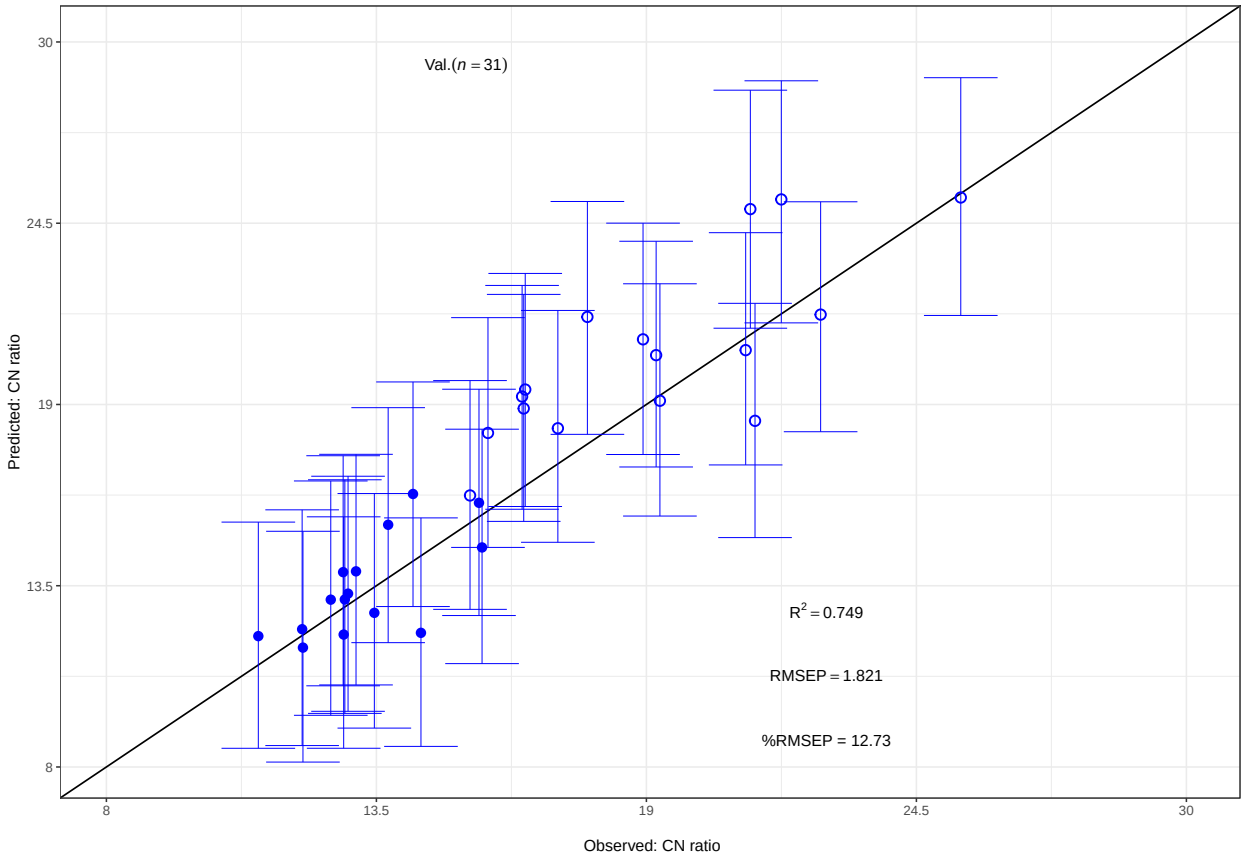

```
##   data_set    R2 RMSEP NRMSEP
## 1      cal 0.772 1.743 10.582
## 2      val 0.749 1.821 12.726
```

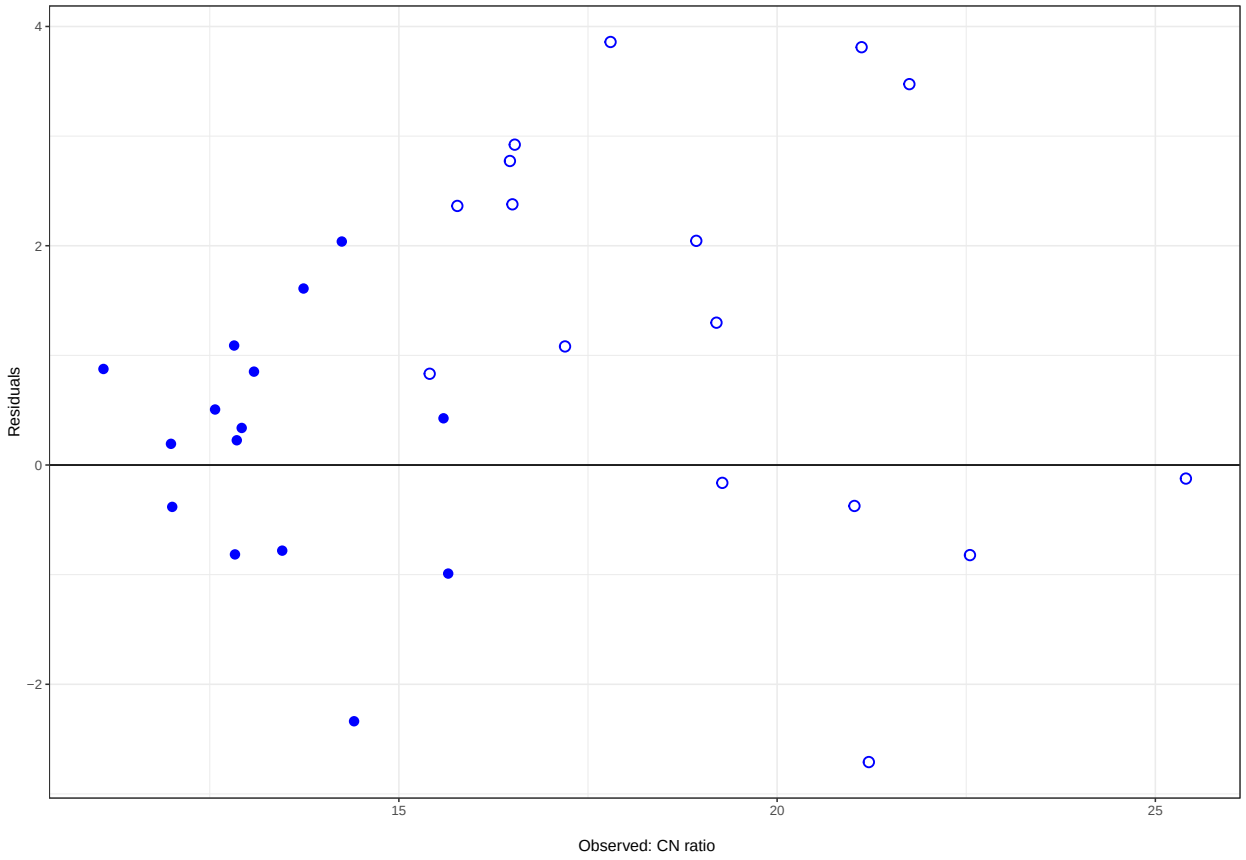
```
##   Observed Predicted  Residuals Treatment Subpop      uci      lci      upi
## 1 12.92215  13.26014  0.3379890        N1    TRJ 13.57149 12.94050 16.82263
## 2 13.73949  15.34927  1.6097822        N1    TRJ 15.64069 15.03408 18.90249
## 3 14.24542  16.28382  2.0384054        N1    TRJ 16.44180 16.10909 19.68329
## 4 15.58980  16.01574  0.4259329        N1    TRJ 16.21980 15.83785 19.46286
## 5 13.45788  12.67683 -0.7810557        N1    TRJ 13.04638 12.43046 16.29724
## 6 12.83327  12.01796 -0.8153132        N1    TRJ 12.34488 11.81366 15.59063
##         lpi
## 1  9.689367
## 2 11.772282
## 3 12.867600
## 4 12.594794
## 5  9.179597
## 6  8.567903
```


Cal.(n = 57)
R2 = 0.772
RMSEP = 1.743
%RMSEP = 10.58
Predicted: CN ratio
Observed: CN ratio
30
24.5
19
13.5
8
8
13.5
19
24.5
30


Residuals
2
0
−2
−4
−6
15
20
25
Observed: CN ratio


Val.(n = 31)
R2 = 0.749
RMSEP = 1.821
%RMSEP = 12.73
Predicted: CN ratio
Observed: CN ratio
30
24.5
19
13.5
8
8
13.5
19
24.5
30


Val.(n = 31)
R2 = 0.749
RMSEP = 1.821
%RMSEP = 12.73
Predicted: CN ratio
Observed: CN ratio
30
24.5
19
13.5
8
8
13.5
19
24.5
30




```
##       Iteration Intercept X698.81871 X697.54987 X591.87595 X590.62875
## Seg 1         1  38.29688   7.545094   5.597493   7.903698   7.792484
## Seg 2         2  39.39658   9.931288   7.615622   8.268639   8.229425
## Seg 3         3  40.51212   8.086628   6.144947   7.682430   7.584050
## Seg 4         4  37.56104   8.181324   6.119461   7.087034   7.012977
## Seg 5         5  40.02075   8.591008   6.617572   7.578542   7.504694
## Seg 6         6  37.58486   7.757747   5.769447   7.751044   7.631322
```

```
##              coefs
## 698.81871 7.748182
## 697.54987 5.833339
## 591.87595 7.760243
## 590.62875 7.661809
## 593.12339 8.307543
## 589.3818  7.334587
```