Annex 5: Statistical data analysis

Group 9: Acid oxalate extractable Fe and Al (SA13)

Reactive Al and reactive Fe
Reactive Aluminium
Dot plot sample B

9 - Reactive Al - Sample B
Dot plot sample E

9 - Reactive Al - Sample E
Histogram of the means of samples A, B and C

9 - Reactive Al - Sample A - mean

9 - Reactive Al - Sample B - mean

9 - Reactive Al - Sample C - mean
Histogram of the means of samples D and E

9 - Reactive Al - Sample D - mean

N: 27 NA: 0 Z: 0 E: 1,0 U: 26
a: 1723 m: 1699 s: 535.7
37.1(67)

9 - Reactive Al - Sample E - mean

N: 25 NA: 0 Z: 0 E: 0 U: 25
a: 229.3 m: 257 s: 89.16
Box plot of the means of samples A, B and C

9 - Reactive AI - mean
Box plot of the means of samples D and E

9 - Reactive Al - mean
Histogram of the standard deviations of samples A, B and C

9 - Reactive Al - Sample A - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 67.7 m: 58.59 s: 51.41

9 - Reactive Al - Sample B - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 25.2 m: 15.82 s: 22.68

9 - Reactive Al - Sample C - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 24.11 m: 20.61 s: 18.42
Histogram of the standard deviations of samples D and E

- **Sample D**
  - N: 27
  - NA: 0
  - Z: 0
  - E: 0
  - U: 26
  - a: 52.07
  - m: 35.98
  - s: 55.02
  - 19.2% 46.2% 15.4% 7.7% 0% 3.8% 3.8% 0% 3.8%

- **Sample E**
  - N: 24
  - NA: 0
  - Z: 0
  - E: 0
  - U: 24
  - a: 5.385
  - m: 4.094
  - s: 4.167
  - 25% 25%
  - 8.3% 16.7% 12.5% 0% 4.2%
Box plot of the standard deviations of samples A, B and C

- **Sample A**
  - Standard deviation: 233.2(38)
  - Outliers: 0, 1
  - Upper limit: 27
  - Values: 67; 61; 40; 13; 30; 26; 83; 54; 32; 14; 37; 31; 10; 7; 35; 48; 6; 55; 8; 11; 56; 68; 3; 36; 64

- **Sample B**
  - Standard deviation: 67.02(14); 80.83(48); 83.26(37)
  - Outliers: 0, 3
  - Upper limit: 27
  - Values: 67; 63; 30; 26; 36; 84; 61; 56; 68; 54; 38; 7; 55; 3; 40; 11; 13; 32; 35; 10; 83; 64; 31; 8

- **Sample C**
  - Standard deviation: 55.47(35); 90.88(48)
  - Outliers: 0, 2
  - Upper limit: 27
  - Values: 67; 83; 40; 54; 84; 61; 13; 7; 37; 36; 6; 10; 31; 26; 14; 55; 3; 56; 32; 68; 30; 38; 64; 8; 11
Box plot of the standard deviations of samples D and E

Sample D:
- Median: 100.2
- Maximum: 139.8
- Minimum: 172.1
- Values: 100.2, 139.8, 172.1

Sample E:
- Median: 15.97
- Maximum: 32.6
- Minimum: 6.1
- Values: 15.97, 32.6, 6.1

O: 0.3 / U: 26
O: 0.1 / U: 24
Mandel’s h and k plots of sample A

Step: 1; Nlab: 27; Mgen: 2445; Fval: 131.6; Pval: 0; sRep: 84.43; sLab: 557; sRpr: 563.4; CV: 23.04

Mandel’s h

Mandel’s k
Mandel's h and k plots of sample C

9 - Reactive Al - sample C

Step:1; Nlab:27; Mgen:745; Fval:149.8; Pval:0; sRep:30.14; sLab:212.3; sRpr:214.4; CV:28.78
Mandel's h and k plots of sample D

9 - Reactive Al - sample D

Step: 1; Nlab: 27; Mgen: 1723; Fval: 153; Pval: 0; sRep: 75.01; sLab: 534; sRpr: 539.2; CV: 31.3
Mandel’s h and k plots of sample E

9 - Reactive Al - sample E

Step:1; Nlab:25; Mgen:229.3; Fval:544.3; Pval:0; sRep:6.619; sLab:89.08; sRpr:89.32; CV:38.96
Reactive Fe
Dot plot sample A

9 - Reactive Fe - Sample A
Dot plot sample B

9 - Reactive Fe - Sample B
Dot plot sample C

9 - Reactive Fe - Sample C
Dot plot sample D

9 - Reactive Fe - Sample D
Dot plot sample E

9 - Reactive Fe - Sample E
Histogram of the means of samples A, B and C

9 - Reactive Fe - Sample A - mean

N: 27 NA: 0 Z: 0 E: 1,1 U: 25
a: 5570 m: 5541 s: 1402

9 - Reactive Fe - Sample B - mean

N: 27 NA: 0 Z: 0 E: 1,0 U: 25
a: 2734 m: 2809 s: 586

9 - Reactive Fe - Sample C - mean

N: 27 NA: 0 Z: 0 E: 0 U: 25
a: 1729 m: 1686 s: 477.8
Box plot of the means of samples A, B and C

9 - Reactive Fe - mean
Box plot of the means of samples D and E

9 - Reactive Fe - mean
Histogram of the standard deviations of samples A, B and C

9 - Reactive Fe - Sample A - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 176.3 m: 135.2 s: 124.7

14.8% 18.5% 18.5%

9 - Reactive Fe - Sample B - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 61.31 m: 54.58 s: 42.19

40.7% 40.7%

9 - Reactive Fe - Sample C - stdev

N: 27 NA: 0 Z: 0 E: 0 U: 27
a: 56.68 m: 40.29 s: 49.87

59.3% 25.9%
Histogram of the standard deviations of samples D and E
Box plot of the standard deviations of samples D and E

Sample D:
- Median: 67
- Lower Quartile: 31
- Upper Quartile: 38
- Lower Limit: 10
- Upper Limit: 48
- Outliers: 11, 36, 32
- Values: 220.4, 276.1, 390.7

Sample E:
- Median: 67
- Lower Quartile: 31
- Upper Quartile: 36
- Lower Limit: 10
- Upper Limit: 48
- Outliers: 14, 56
- Values: 25.54, 60.26

O: 0.3 / U: 27
O: 0.2 / U: 25
Mandel’s h and k plots of sample A

9 - Reactive Fe - sample A

Step: 1; Nlab: 27; Mgen: 5570; Fval: 128; Pval: 0; sRep: 214.6; sLab: 1396; sRpr: 1413; CV: 25.36
Mandel’s h and k plots of sample B

Step: 1; Nlab: 27; Mgen: 2734; Fval: 188.2; Pval: 0; sRep: 73.98; sLab: 584.4; sRpr: 589.1; CV: 21.55
Mandel’s h and k plots of sample C
9 - Reactive Fe - sample C
Step: 1; Nlab: 27; Mgen: 1729; Fval: 122.1; Pval: 0; sRep: 74.88; sLab: 475.8; sRpr: 481.7; CV: 27.86
Mandel’s h and k plots of sample D

9 - Reactive Fe - sample D

Step:1; Nlab:27; Mgen:3871; Fval:405.1; Pval:0; sRep:137.1; sLab:1591; sRpr:1597; CV:41.24
Mandel’s h and k plots of sample E

Step: 1; Nlab: 26; Mgen: 306.1; Fval: 114.5; Pval: 0; sRep: 15.71; sLab: 96.62; sRpr: 97.89; CV: 31.98