PROGRAMA DE QUIMICA AÑO 2013

El programa de control de calidad externo para el área de Química, permite evaluar la exactitud de los sistemas de análisis en 27 mensurandos, detectar errores aleatorios y/o sistemáticos e implementar acciones correctivas oportunas, según corresponda.

Para el año 2013 se procesaron 12 muestras de dos niveles de control y en dos modalidades de ciclo: Mensual y Bimestral. En la modalidad mensual reportaron 508 laboratorios con un 96.60% (526 inscritos) y en la modalidad bimestral 1449 equivalente al 95.7% (1515 inscritos).

Para cada nivel de control se emplearon tres matrices diferentes y la distribución asignada fue la siguiente:

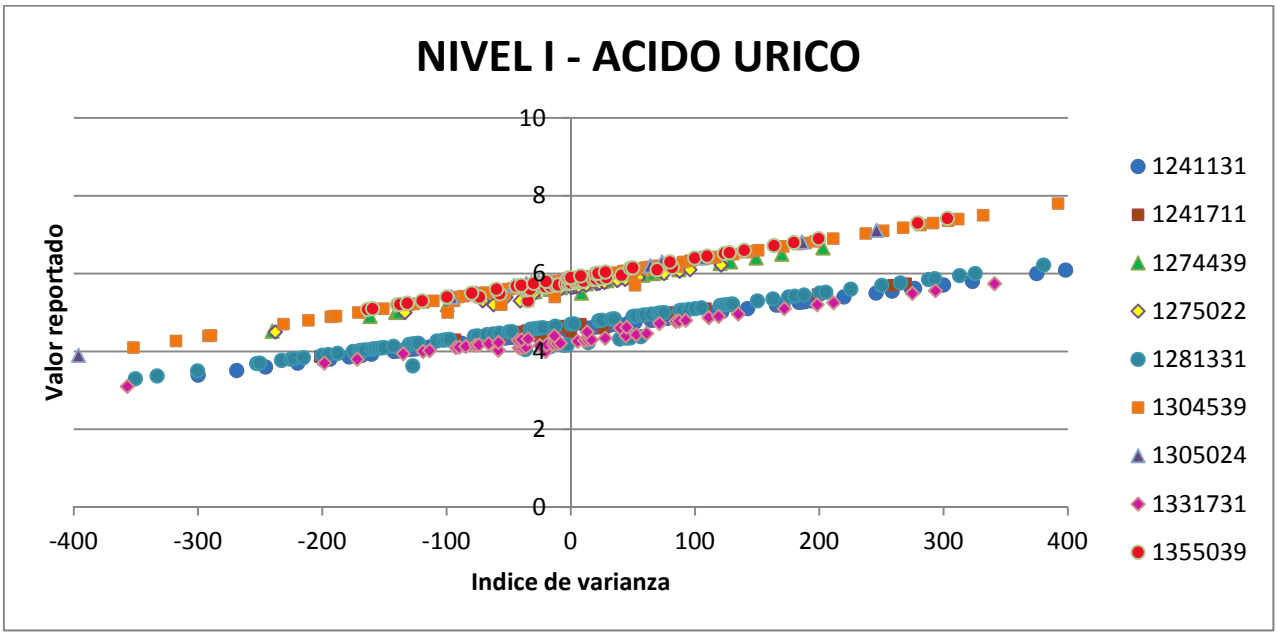
Nivel normal: Enero, Abril, Mayo, Julio, Octubre y Diciembre

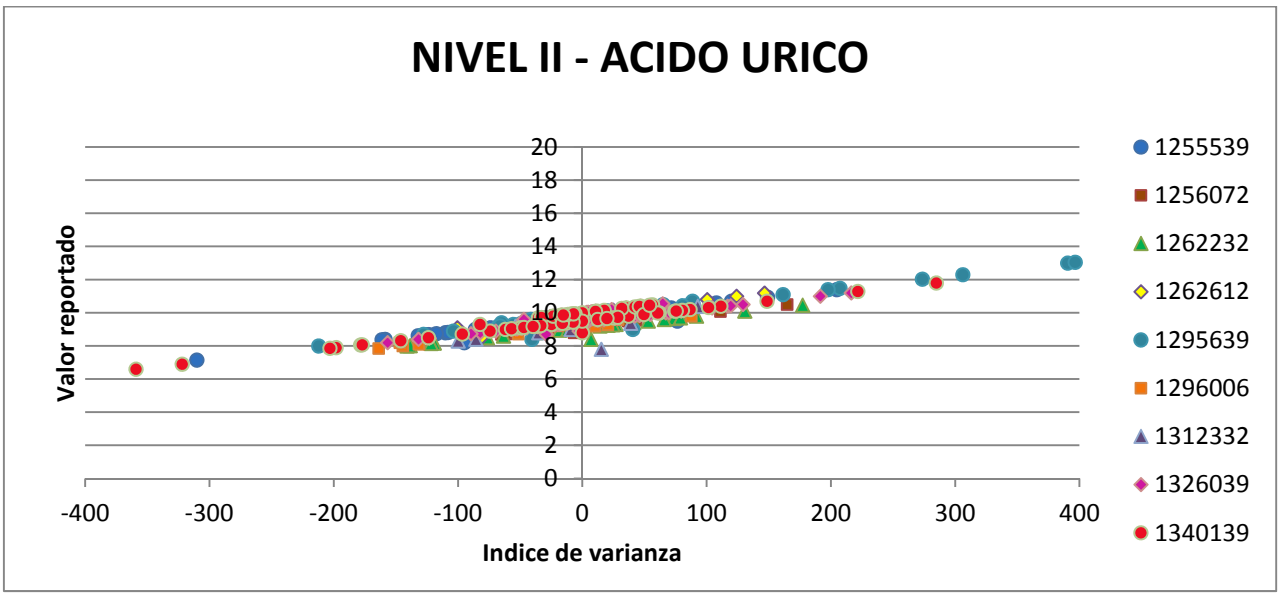
Nivel patológico: Febrero, Marzo, Junio, Agosto, Septiembre y Noviembre

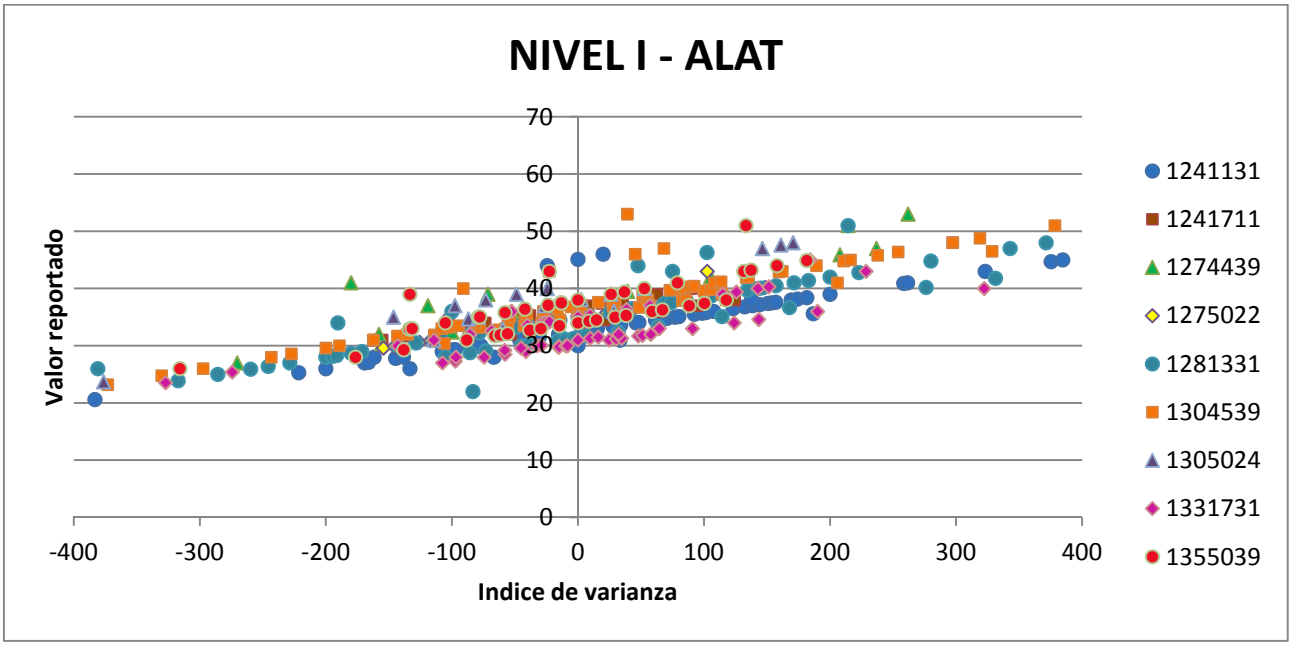
Para los participantes que trabajan el Colesterol HDL por método de precipitación se asignó un material de control diferente, en el mes de marzo un nivel normal y para el mes de septiembre un nivel patológico.

Se recibieron resultados reportados en 49 equipos y 32 marcas de reactivos diferentes.

A continuación se muestra para cada uno de los mensurandos reportados, los gráficos de los índices de varianza obtenidos por nivel de control, incluyendo los valores aberrantes. Se puede observar que el nivel II es más estable y evidencia menos datos fuera de rango. Adicionalmente pese a la diferencia en las matrices utilizadas el comportamiento es muy homogéneo



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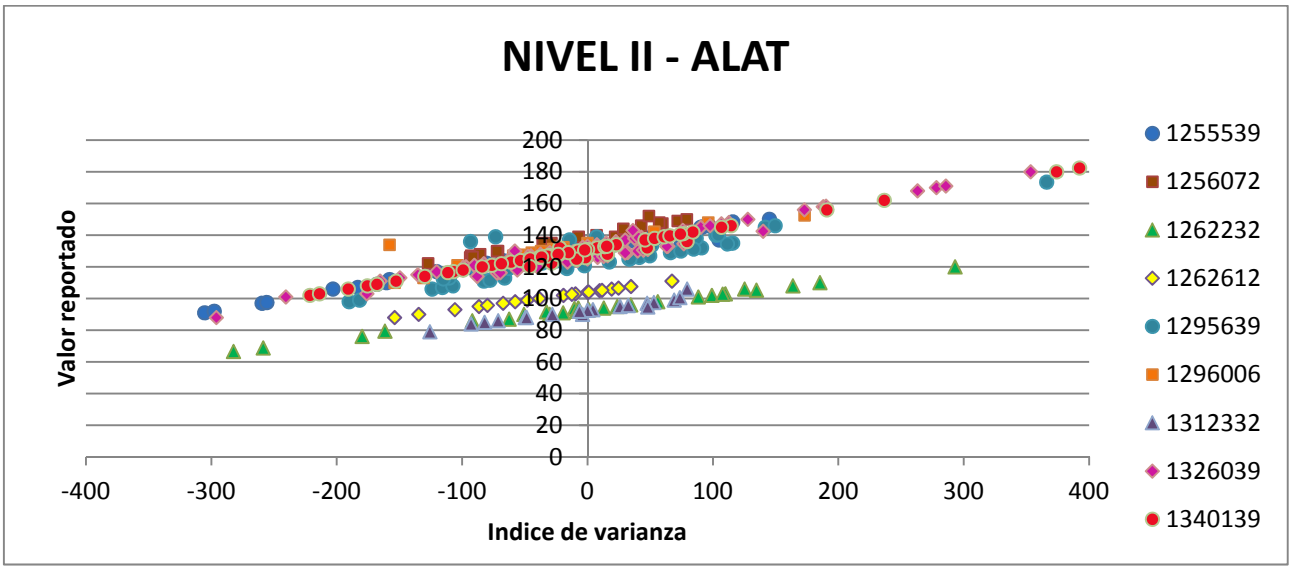
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-200
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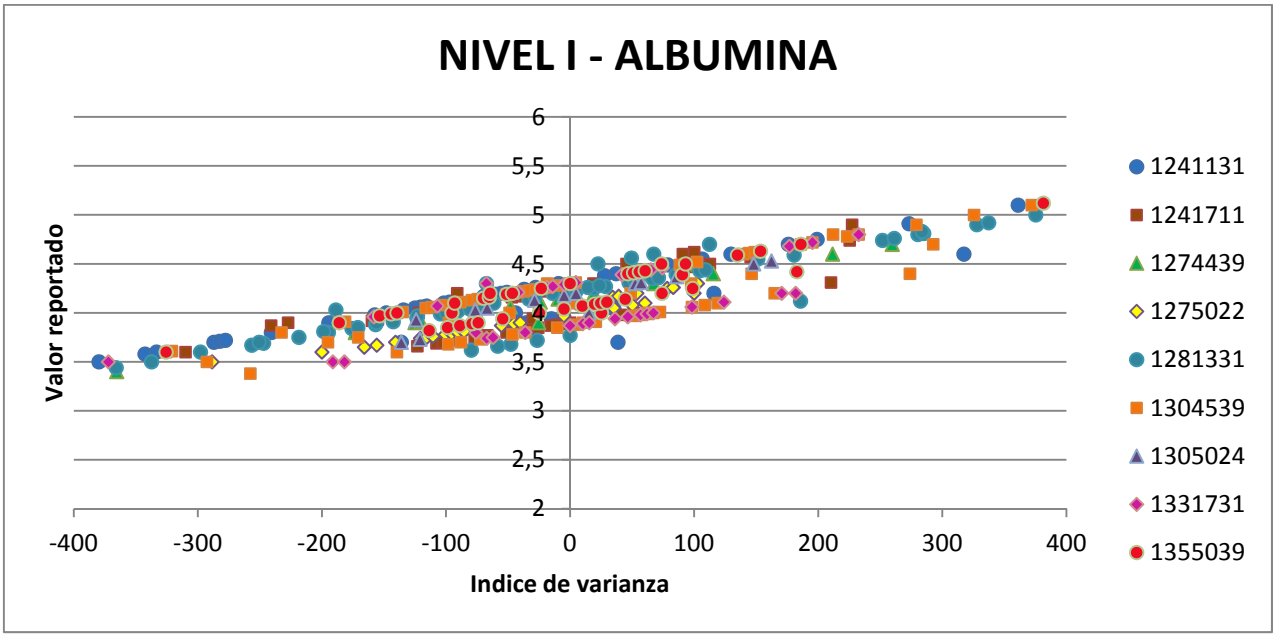
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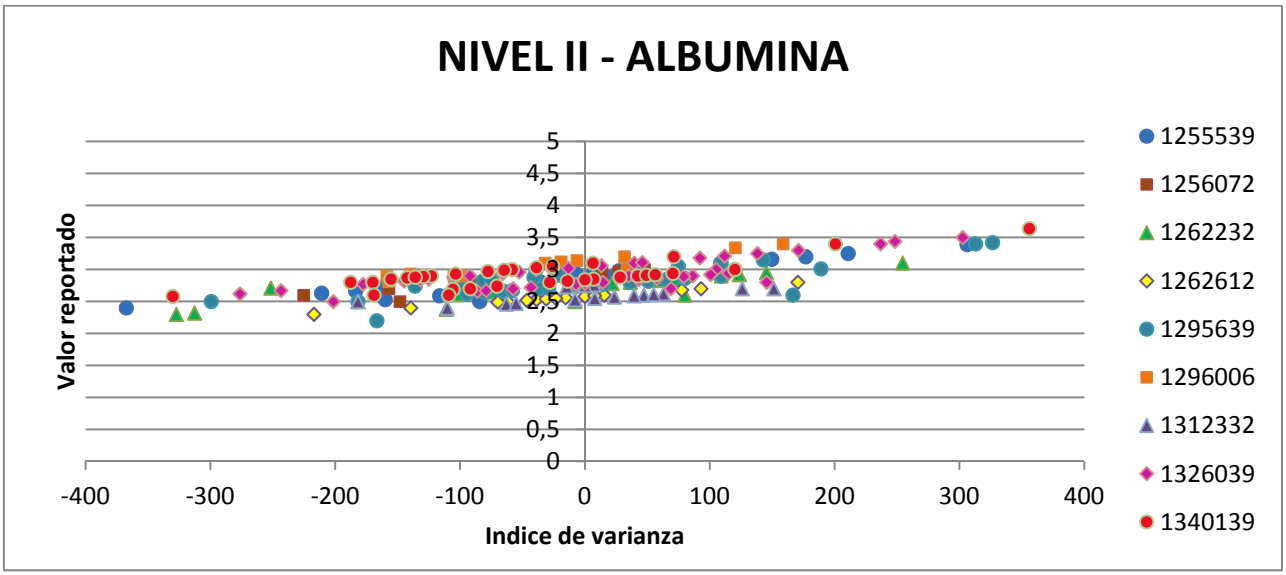
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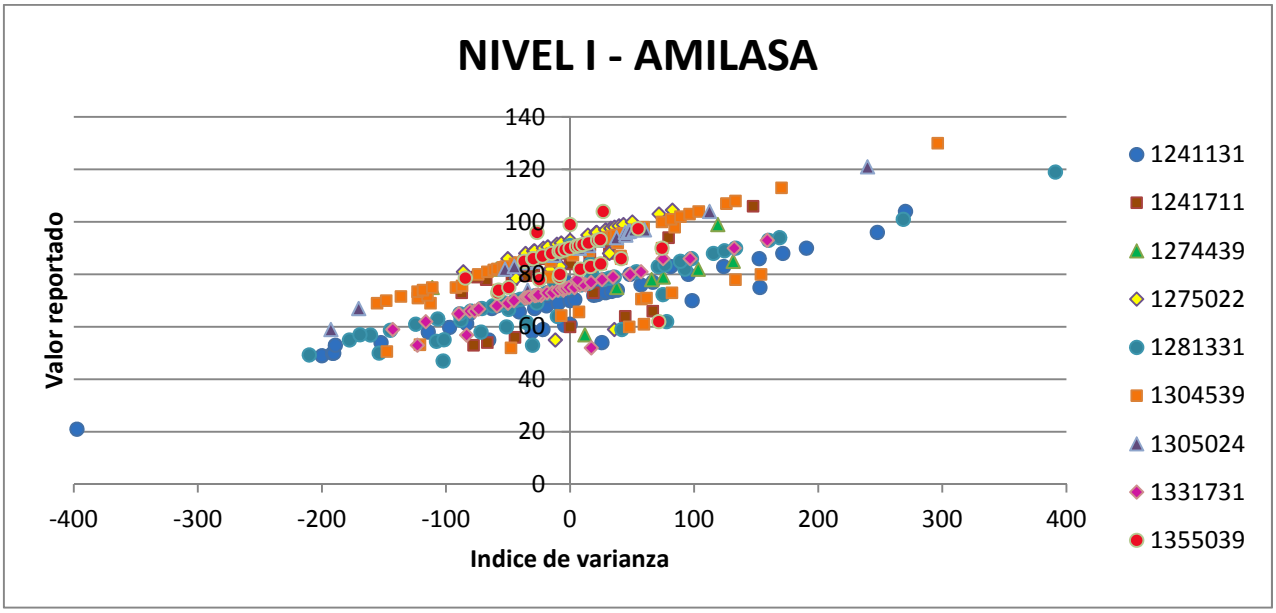
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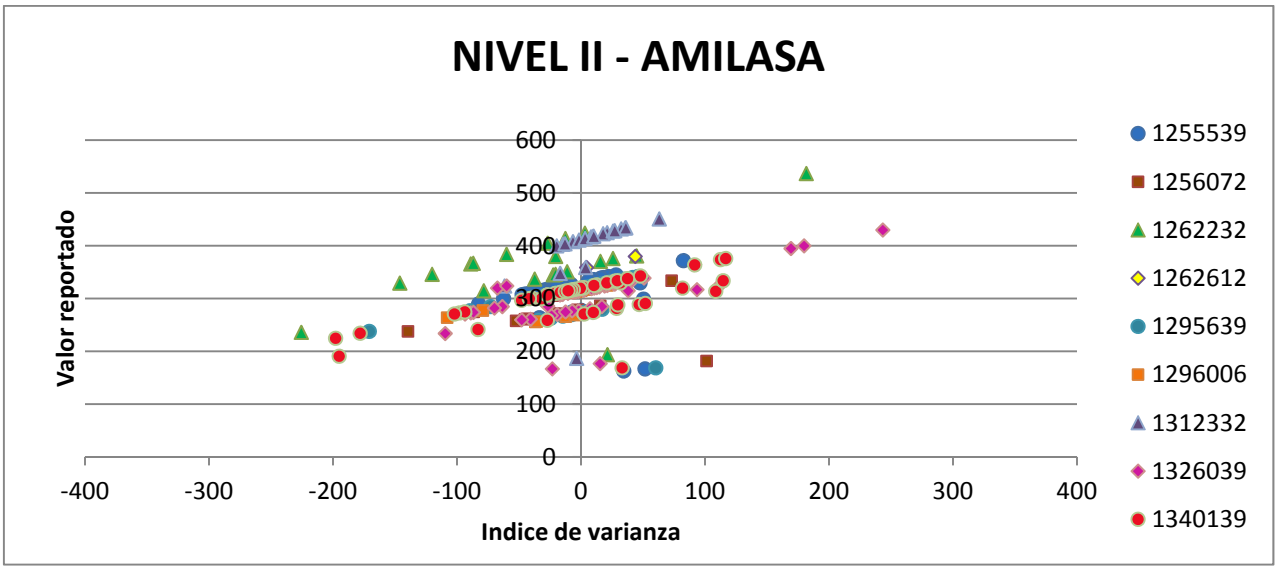
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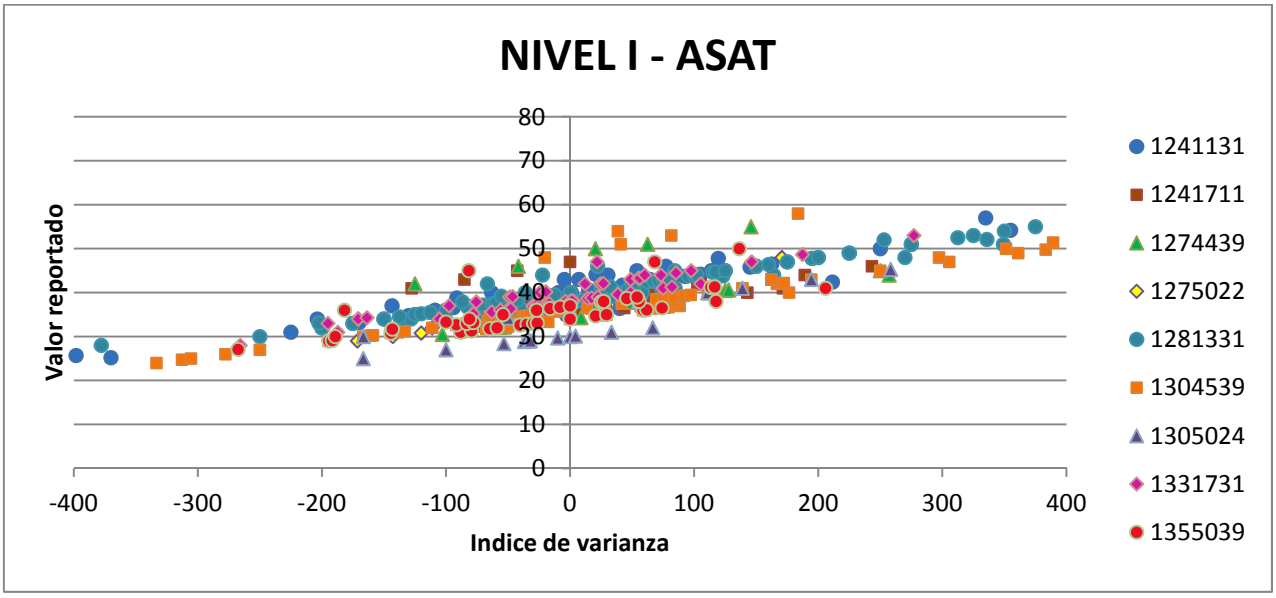
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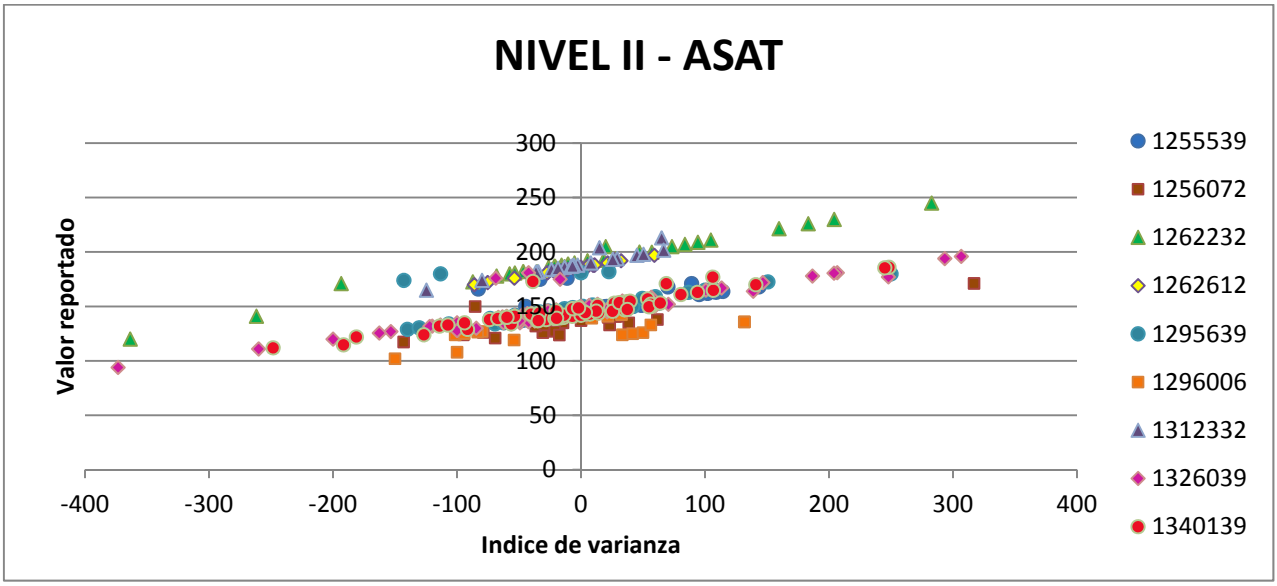
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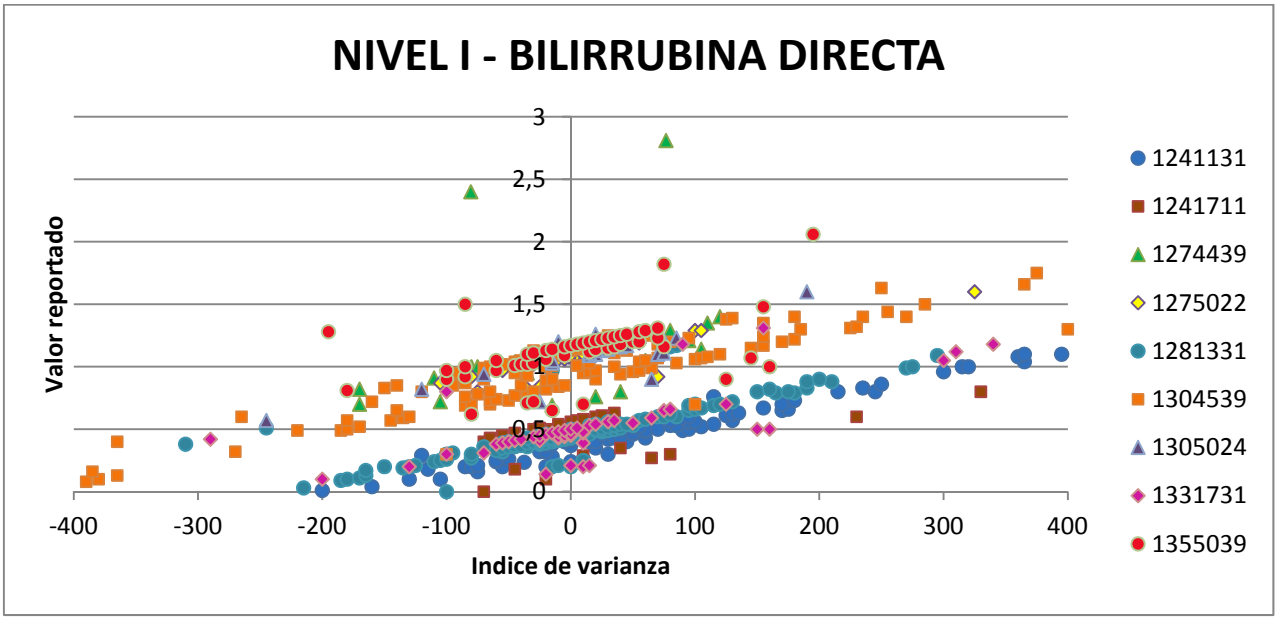
NIVEL I - BILIRRUBINA DIRECTA
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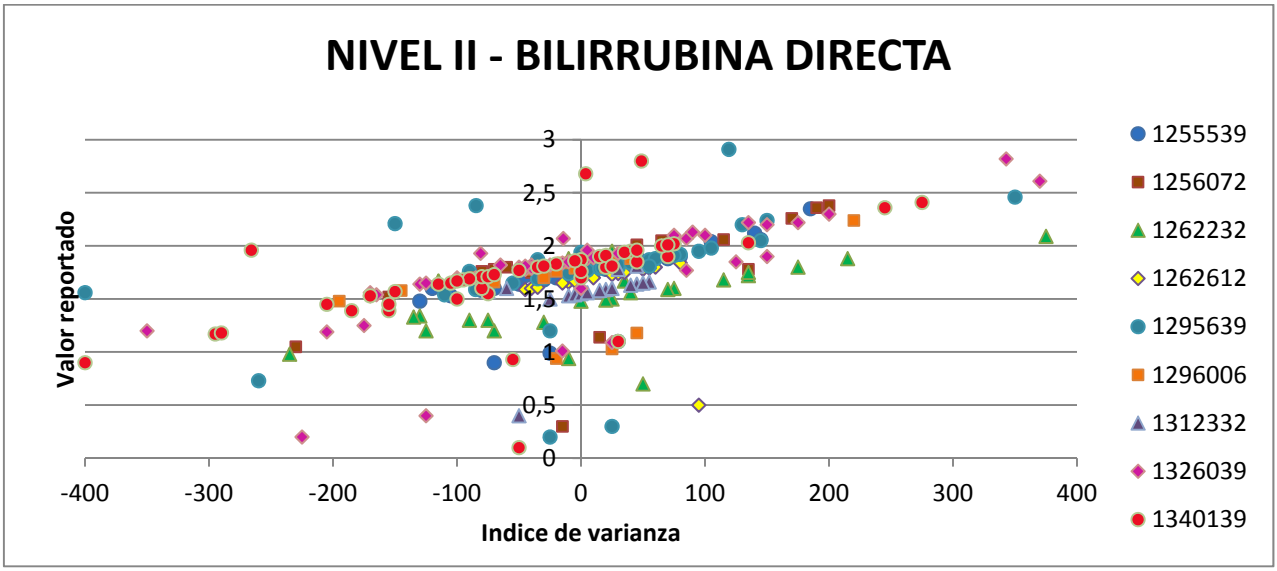
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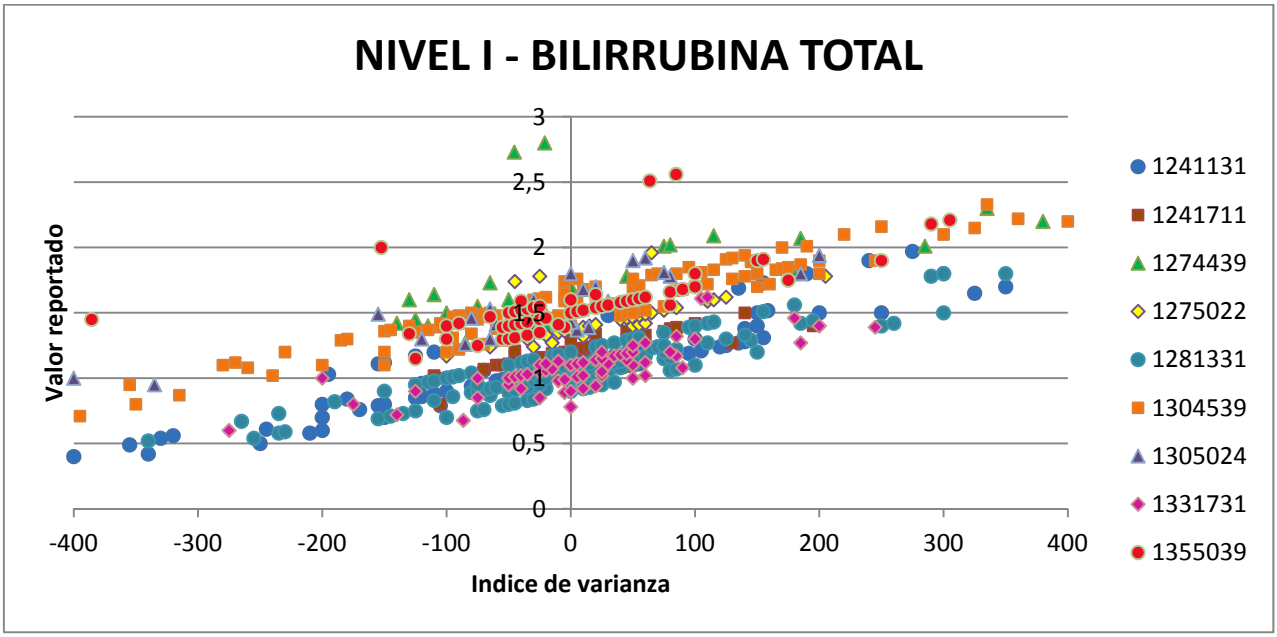
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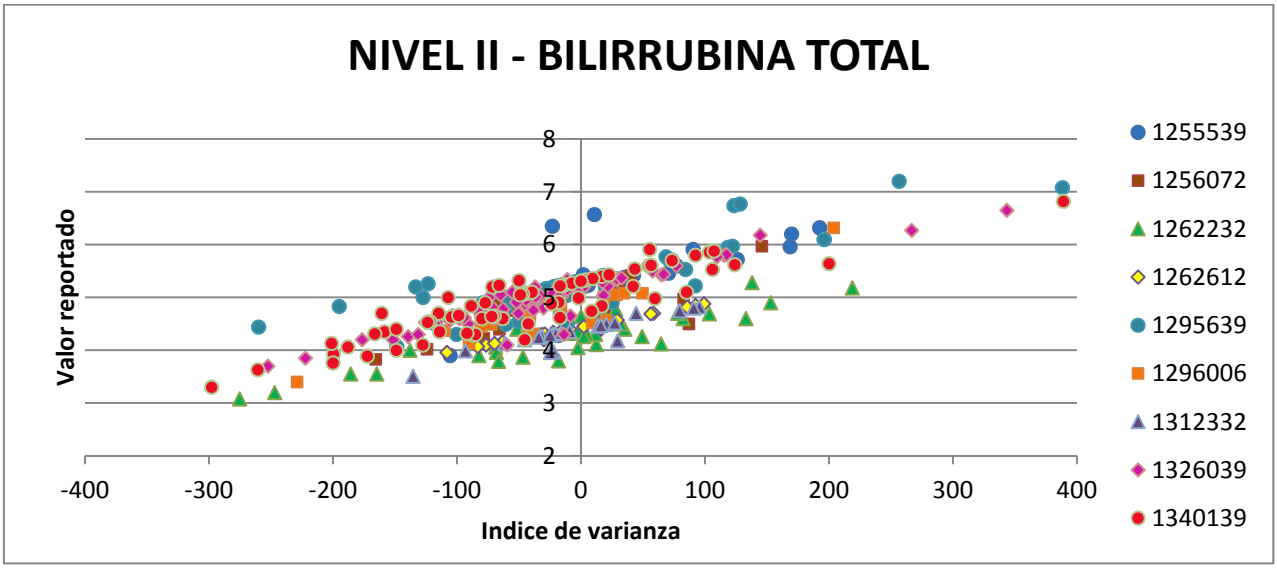
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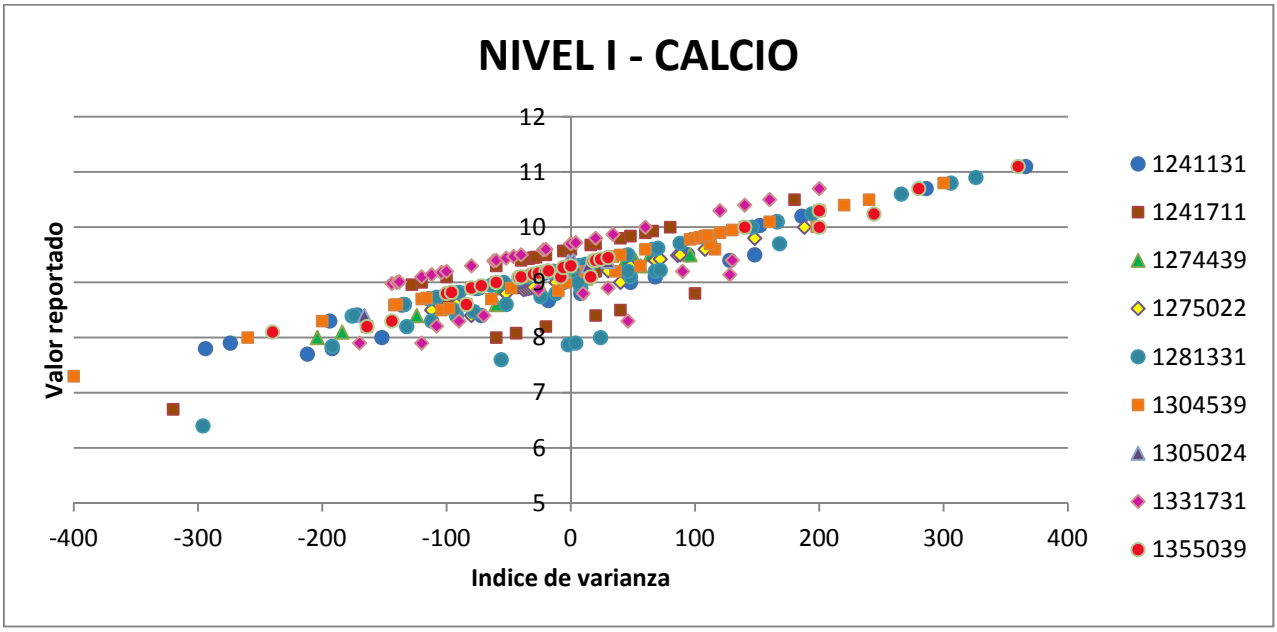
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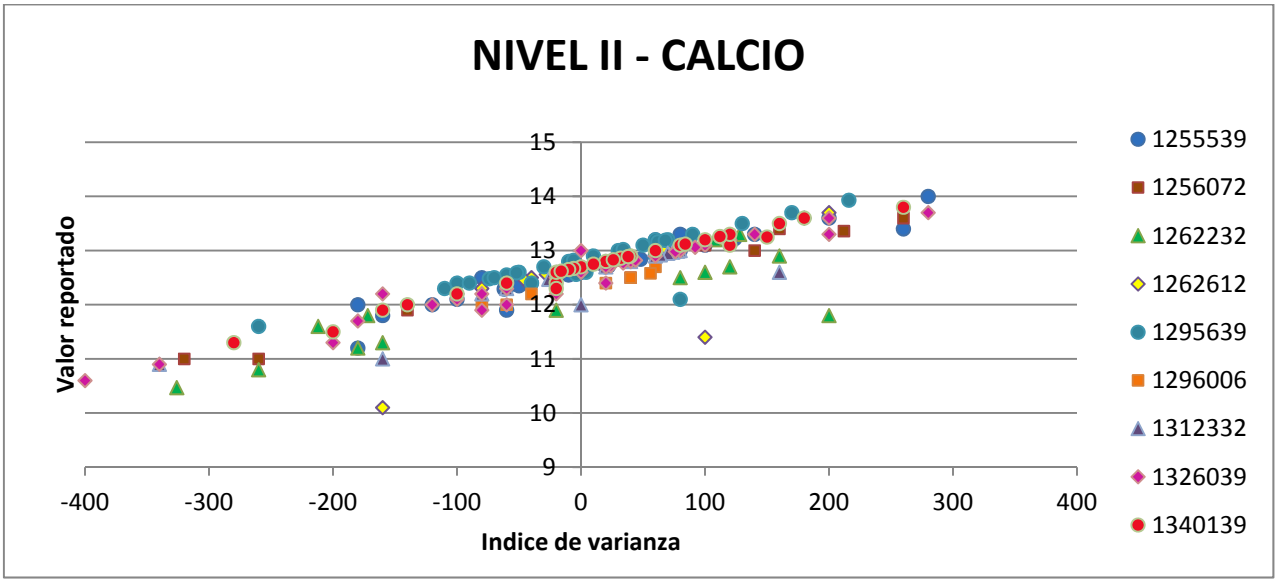
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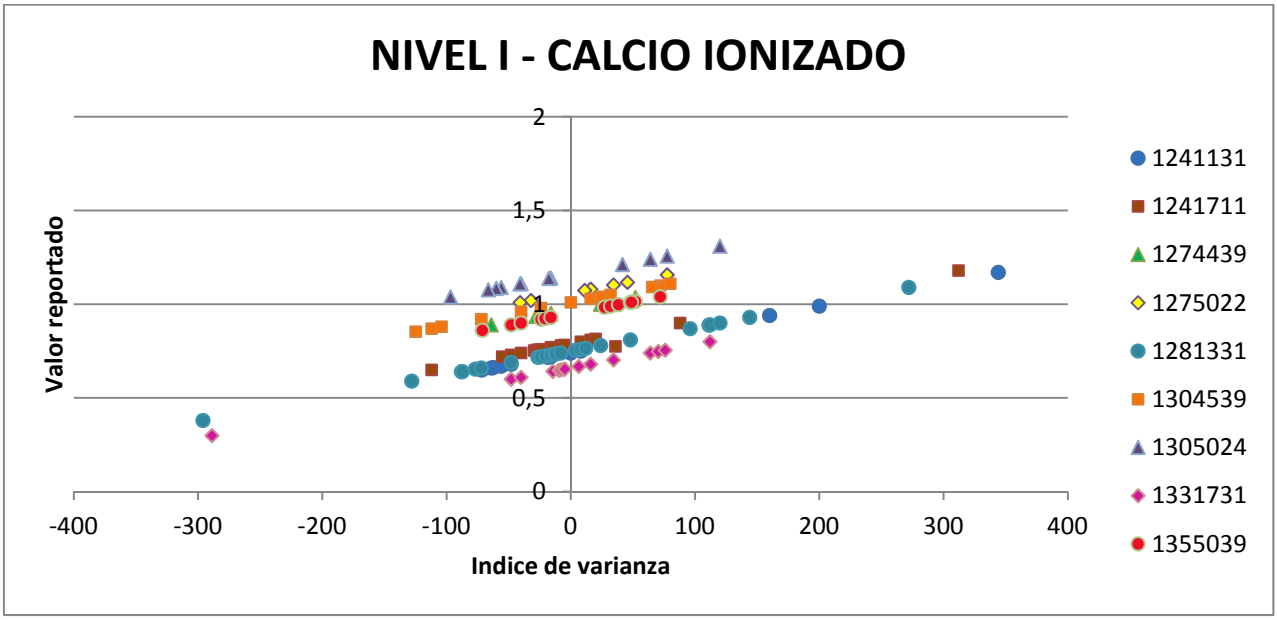
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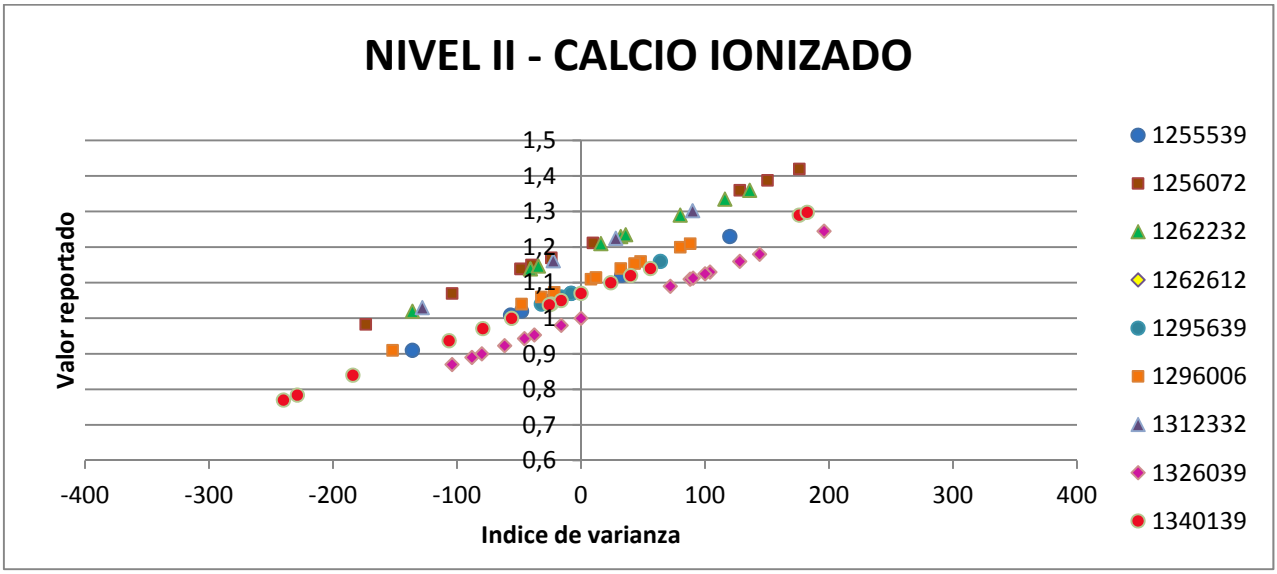
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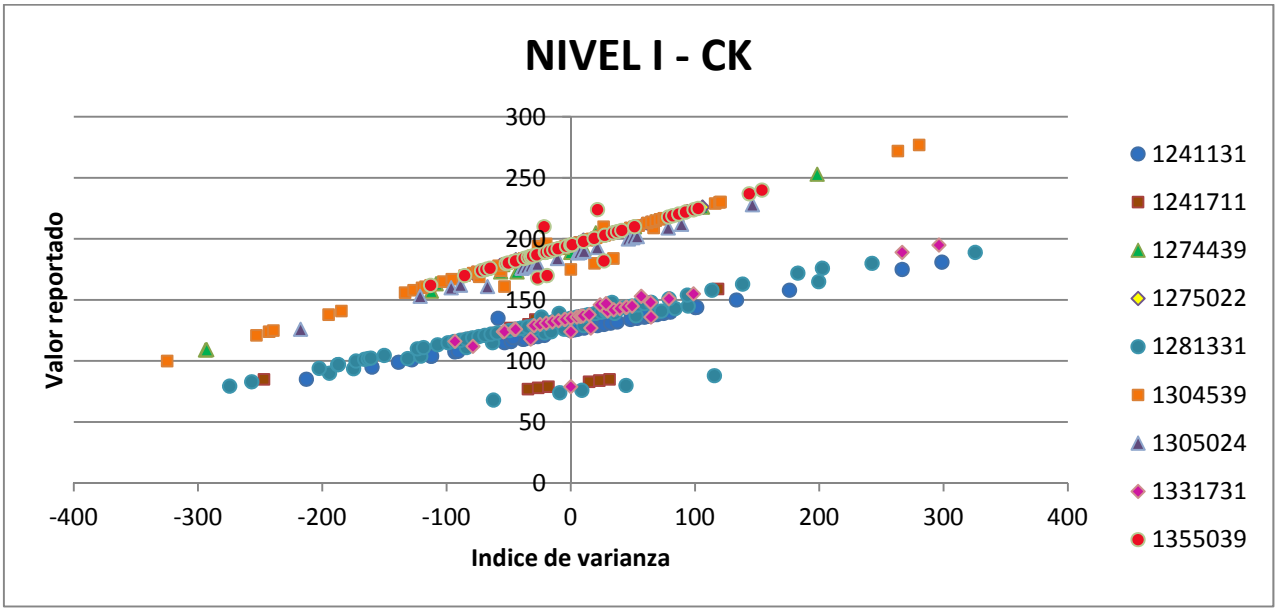
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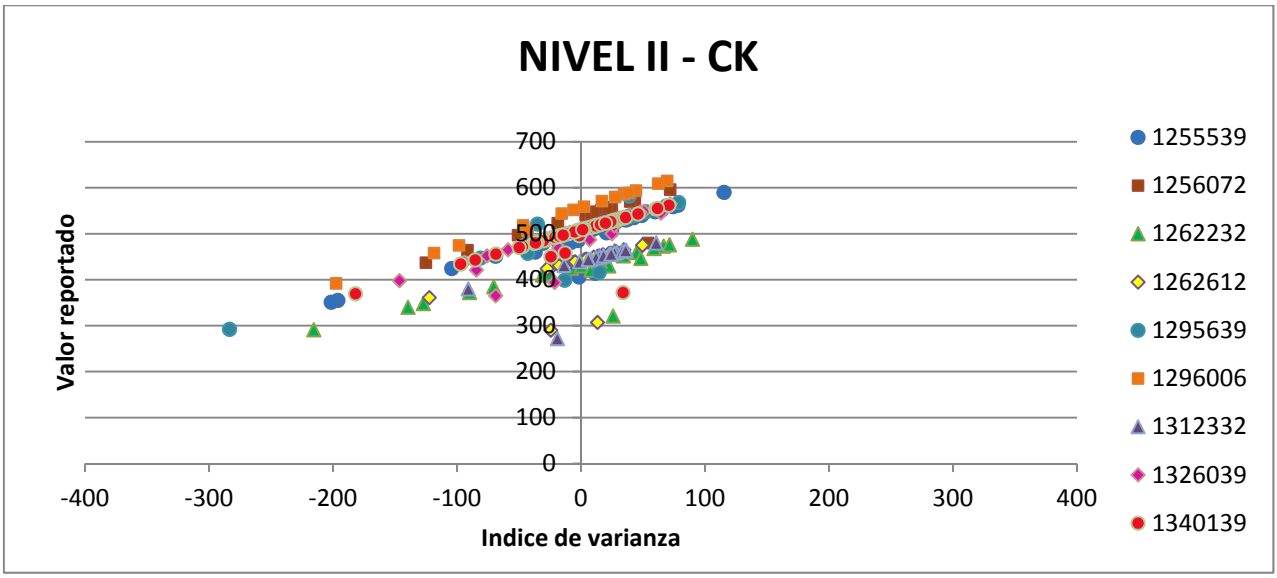
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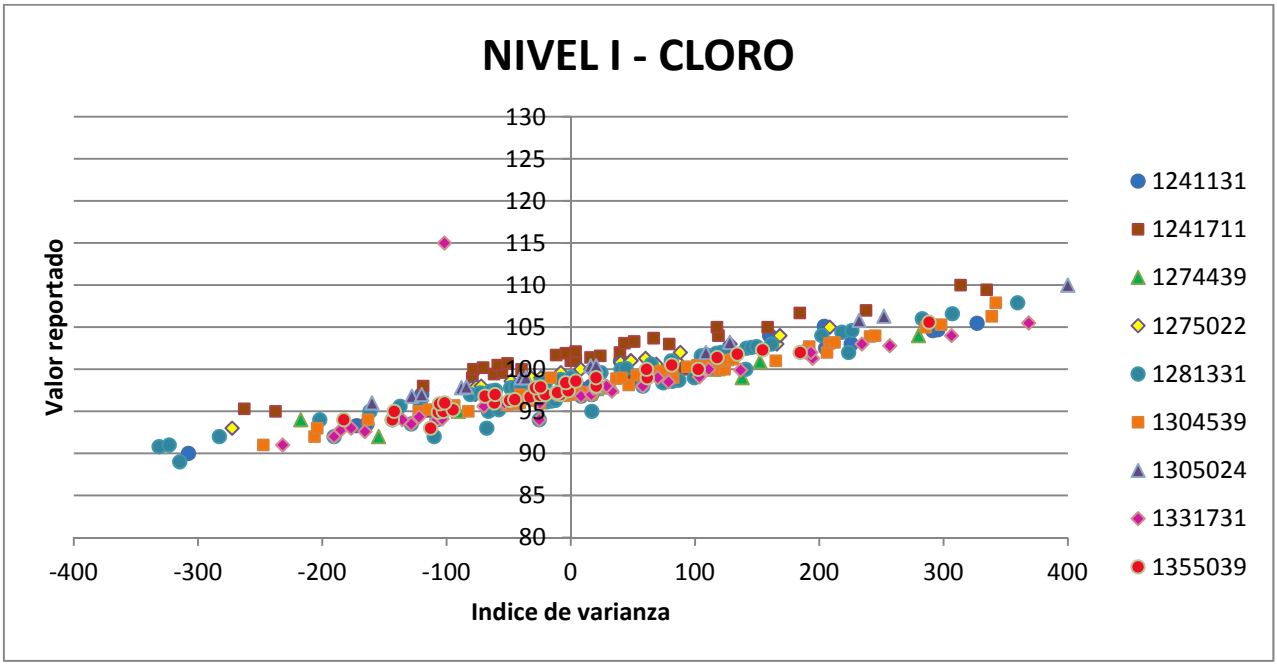
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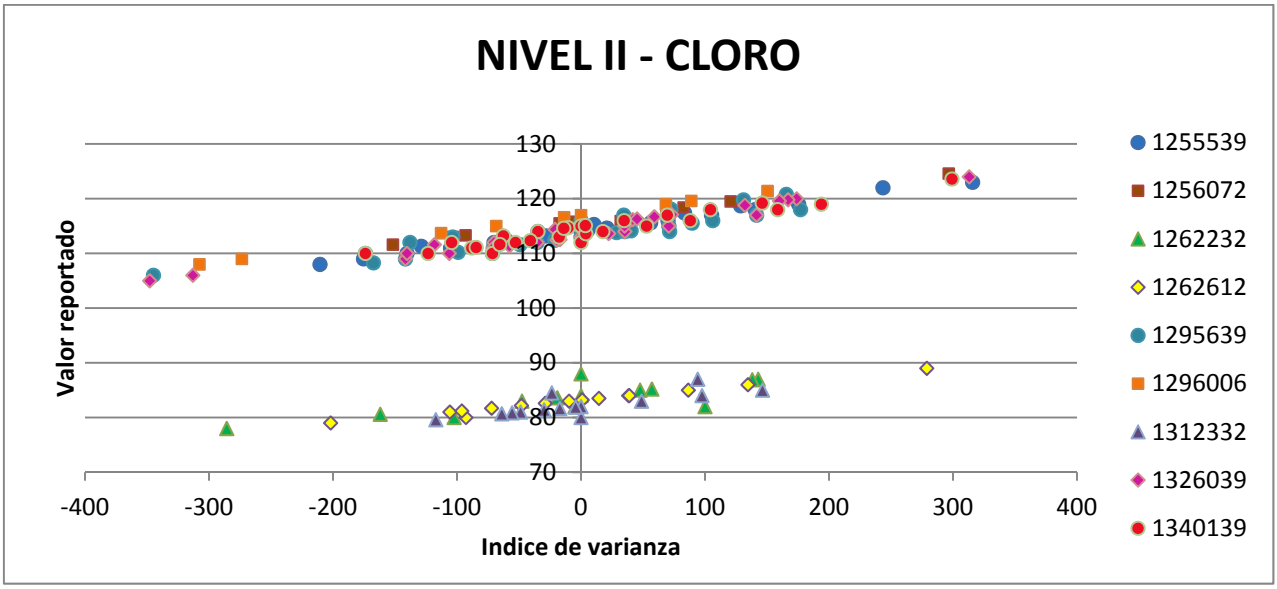
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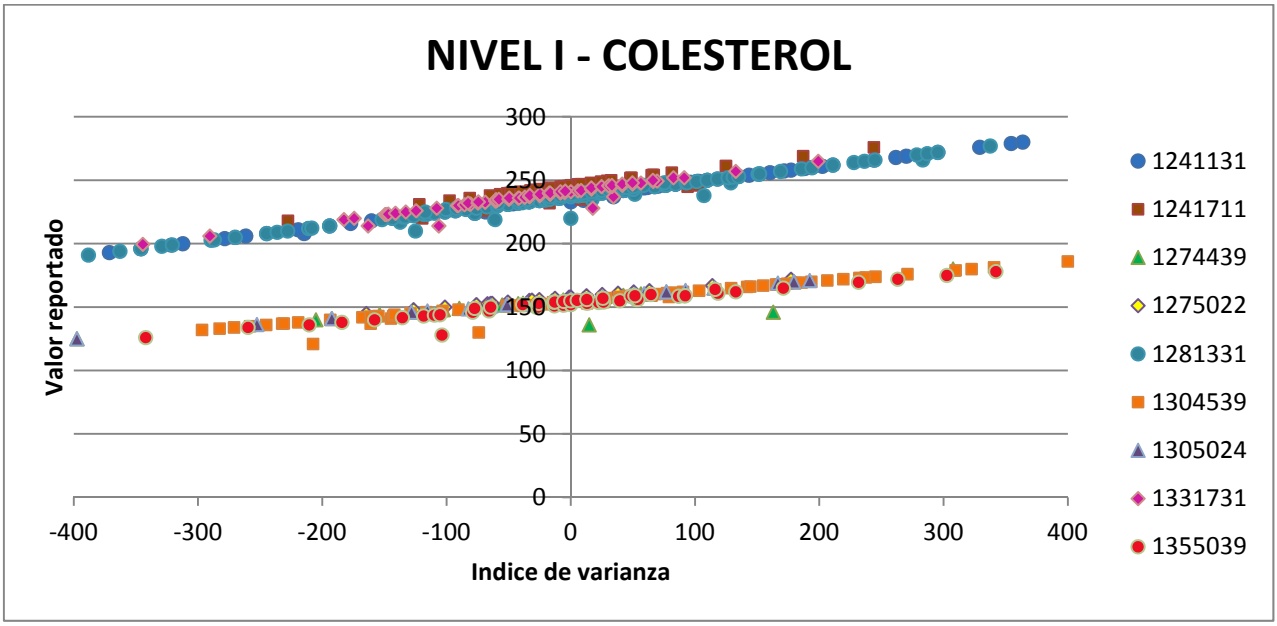
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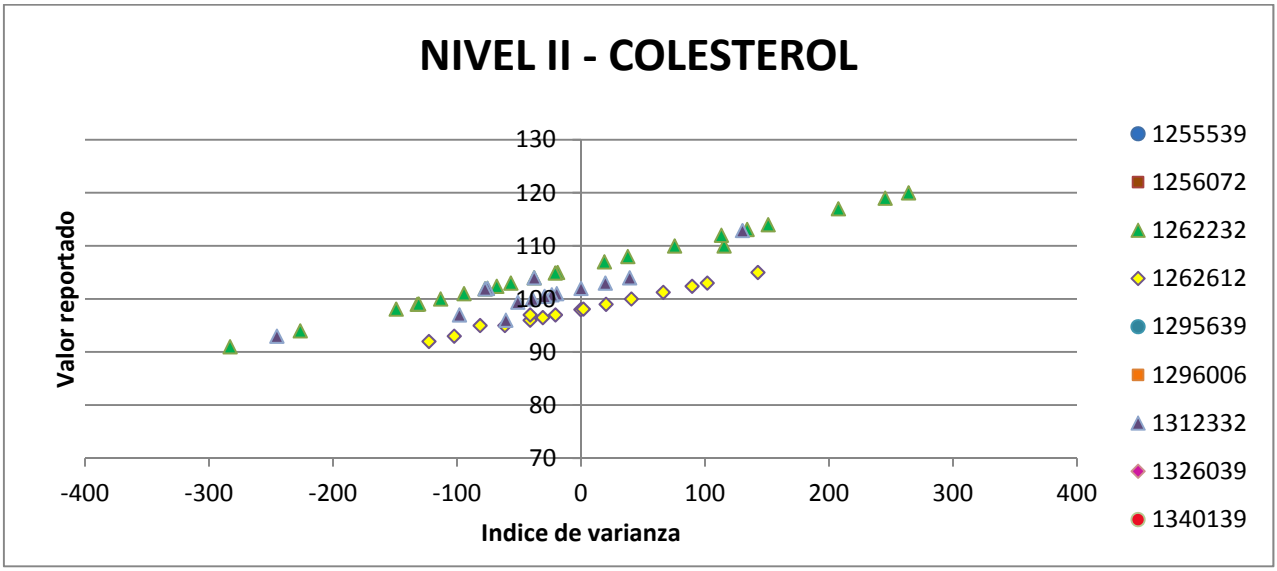
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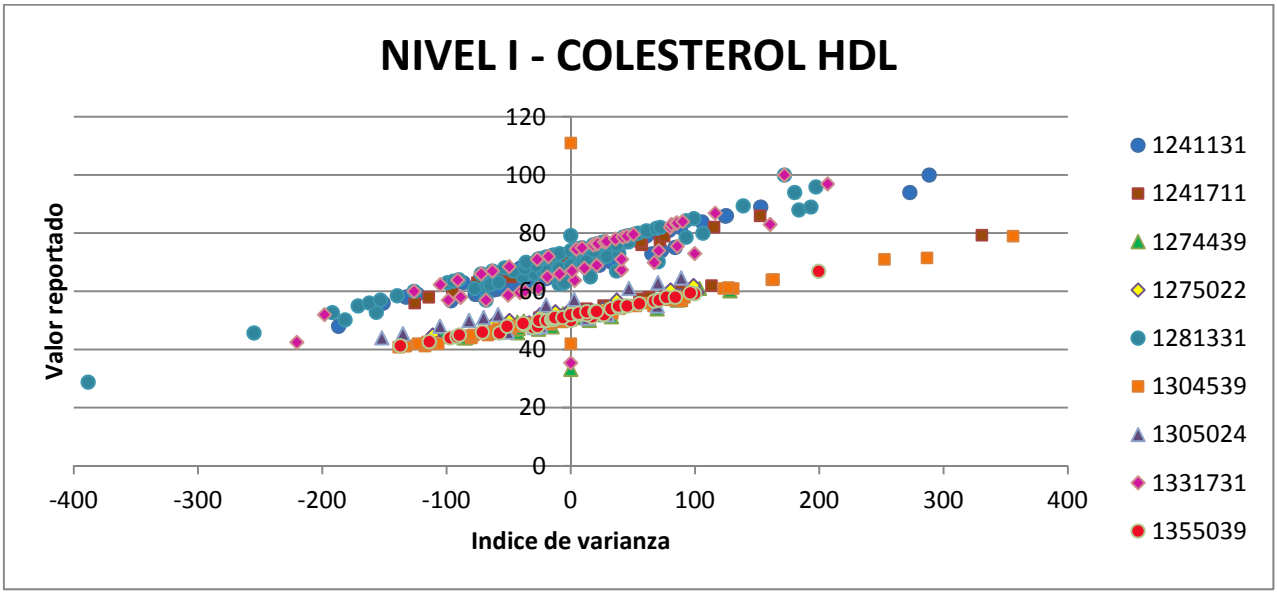
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Valor reportado
Indice de varianza
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60
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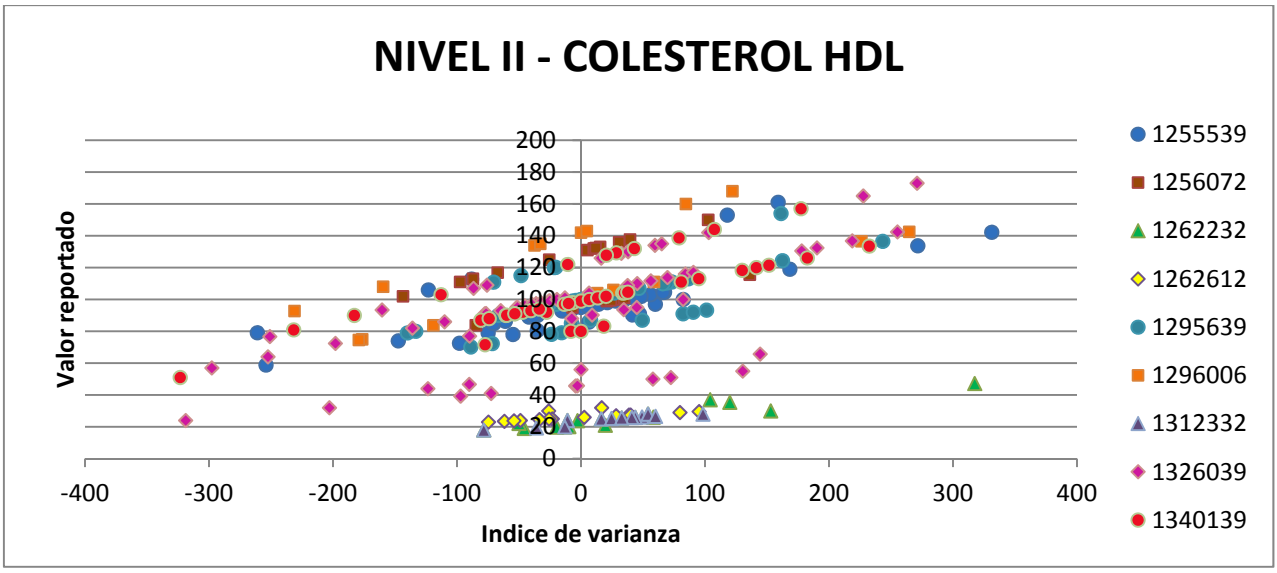
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Indice de varianza
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60
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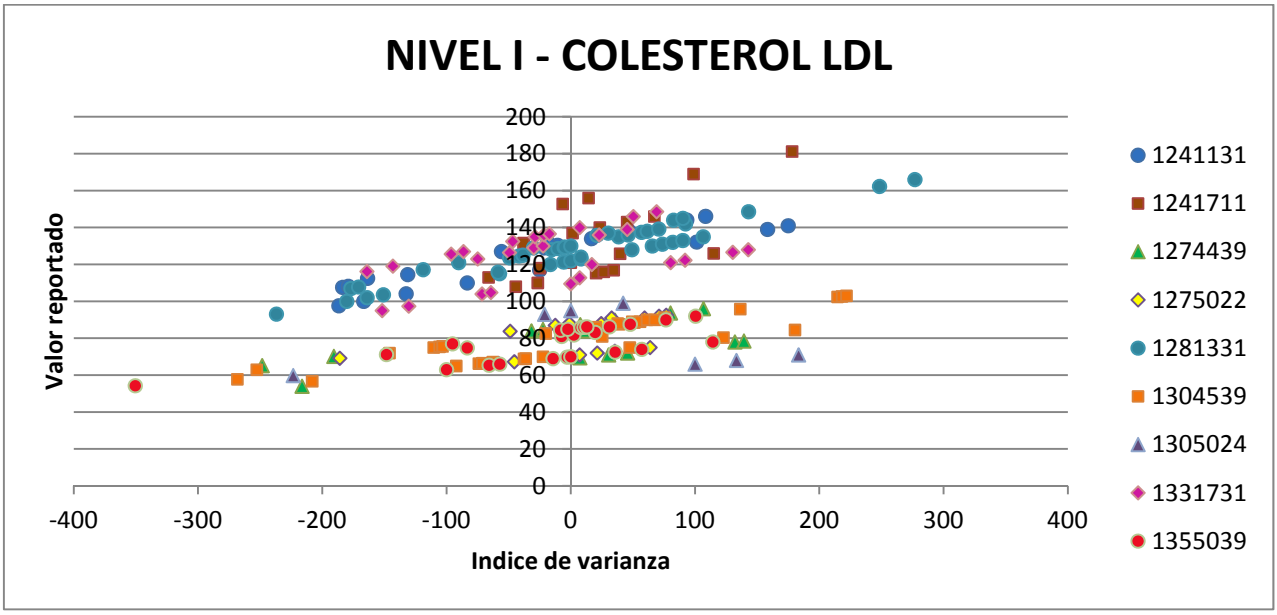
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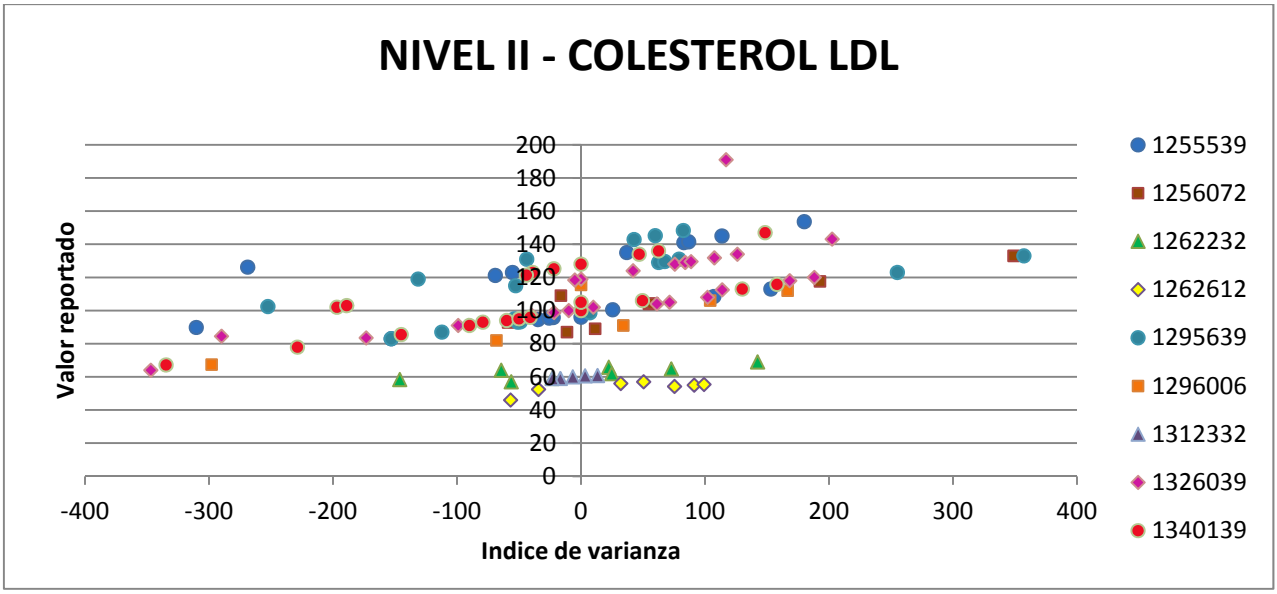
NIVEL II - COLESTEROL LDL
Valor reportado
Indice de varianza
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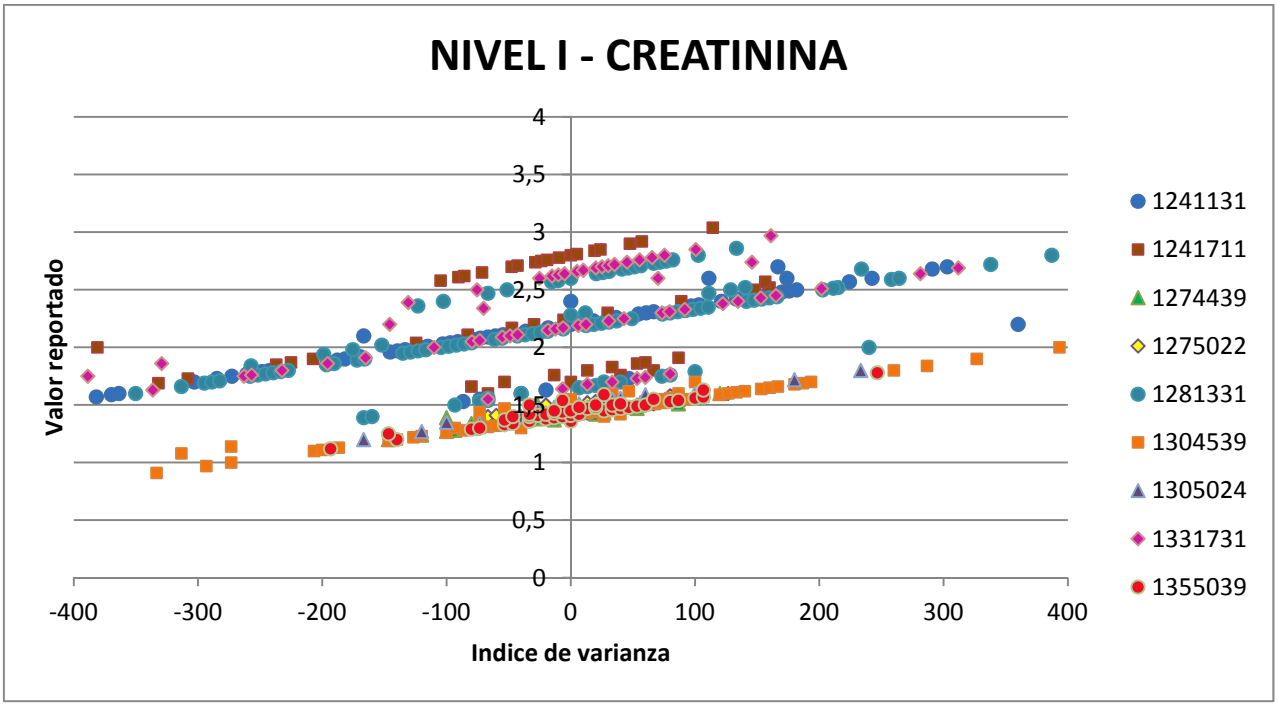
NIVEL I - CREATININA
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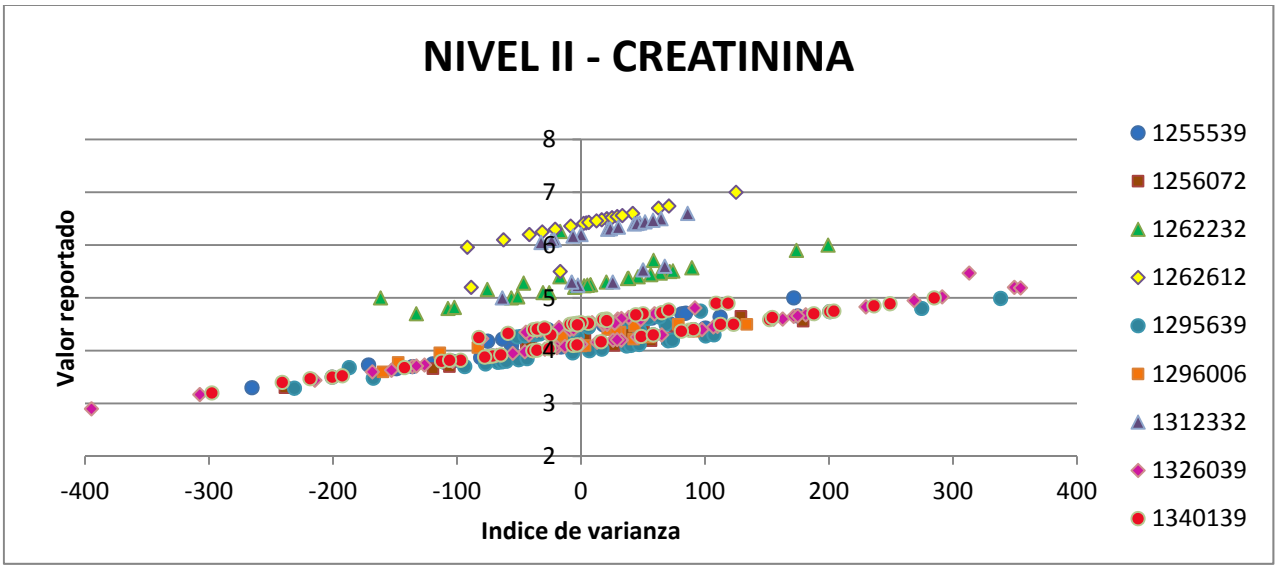
NIVEL II - CREATININA
Valor reportado
Indice de varianza
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7
6
5
4
3
2
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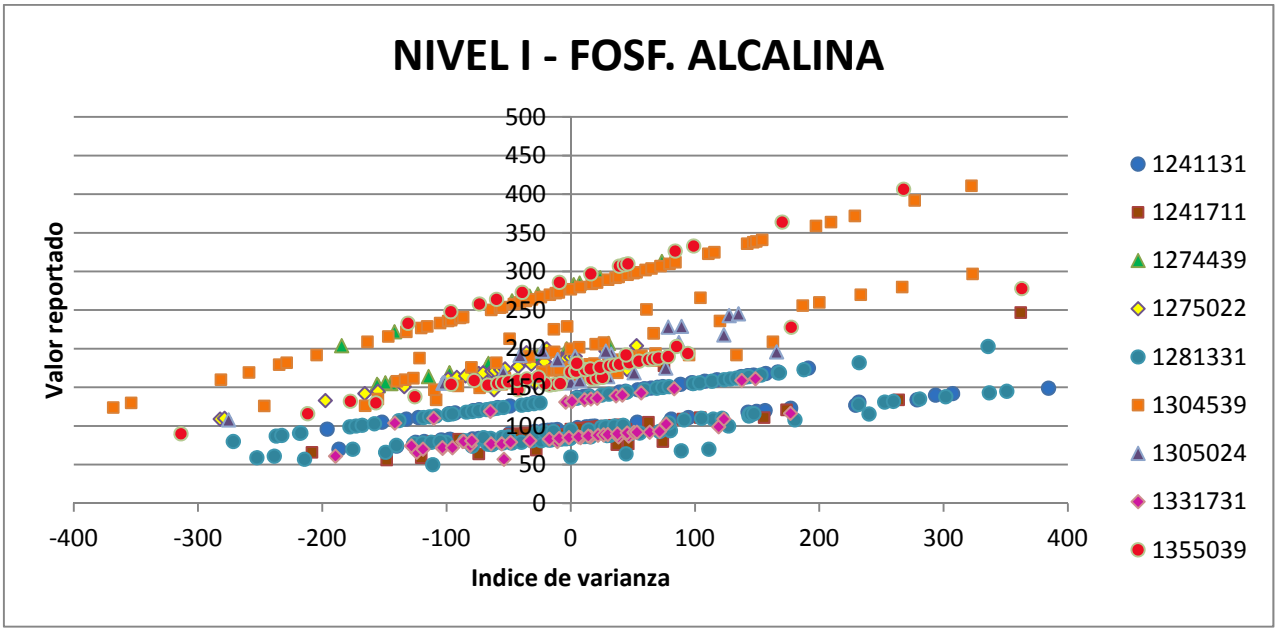
NIVEL I - FOSF. ALCALINA
Valor reportado
Indice de varianza
500
450
400
350
300
250
200
150
100
50
0
-400
-300
-200
-100
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400
1241131
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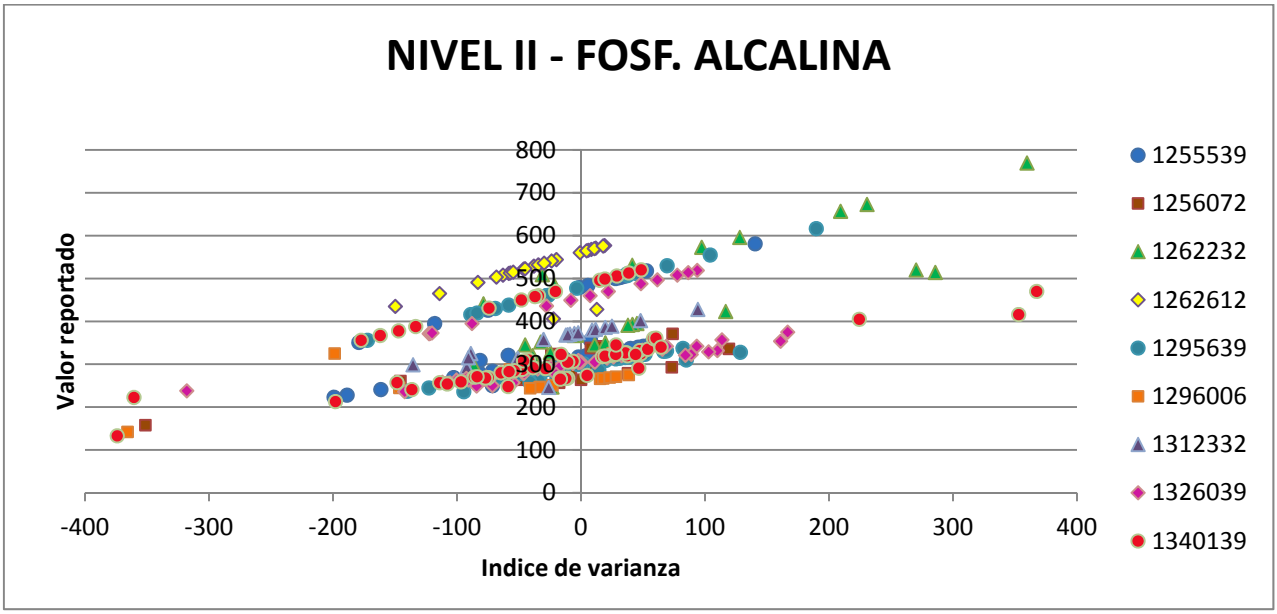
NIVEL II - FOSF. ALCALINA
Valor reportado
Indice de varianza
800
700
600
500
400
300
200
100
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-400
-300
-200
-100
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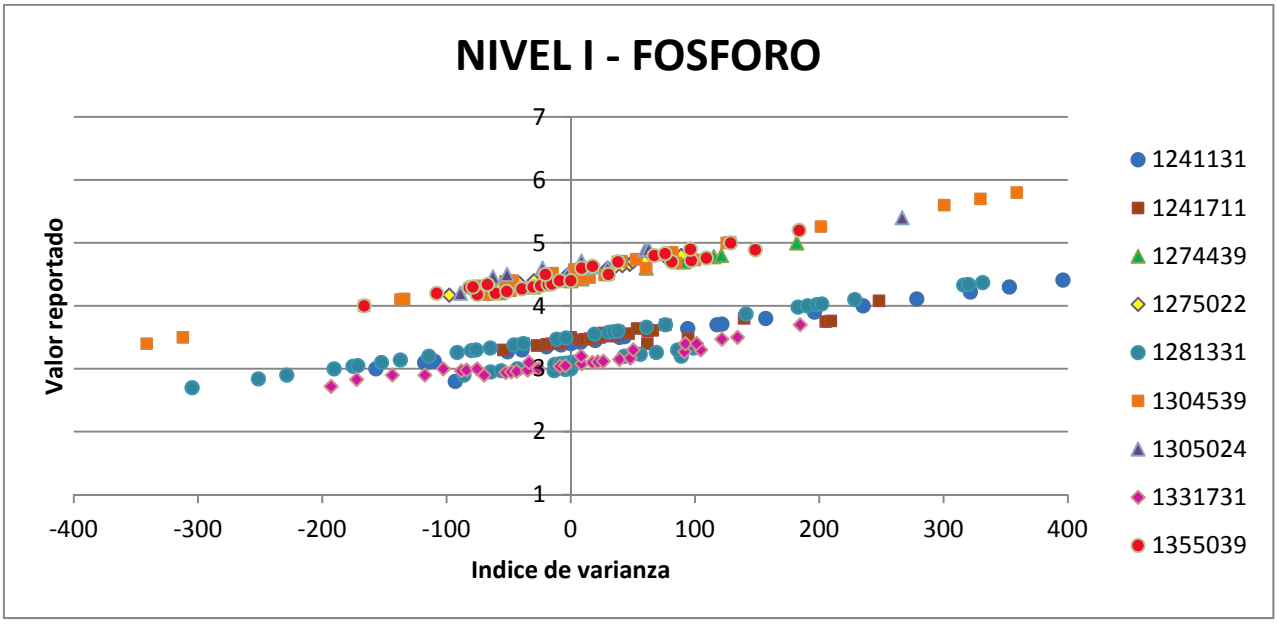
NIVEL I - FOSFORO
Valor reportado
Indice de varianza
7
6
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4
3
2
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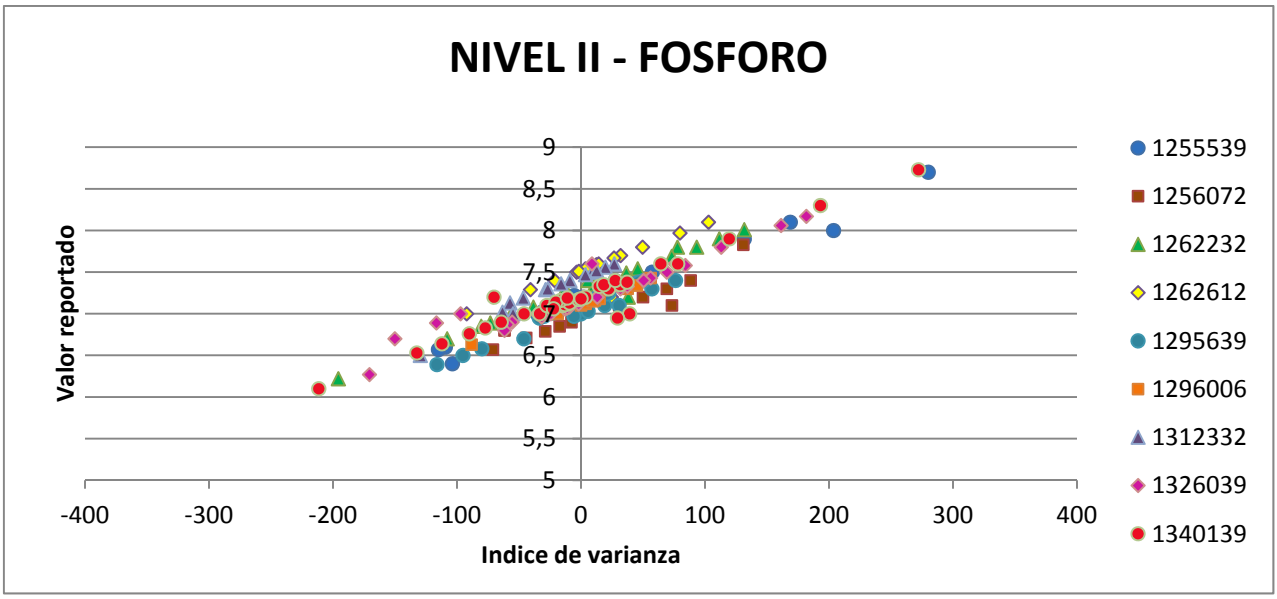
NIVEL II - FOSFORO
Valor reportado
Indice de varianza
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6
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-400
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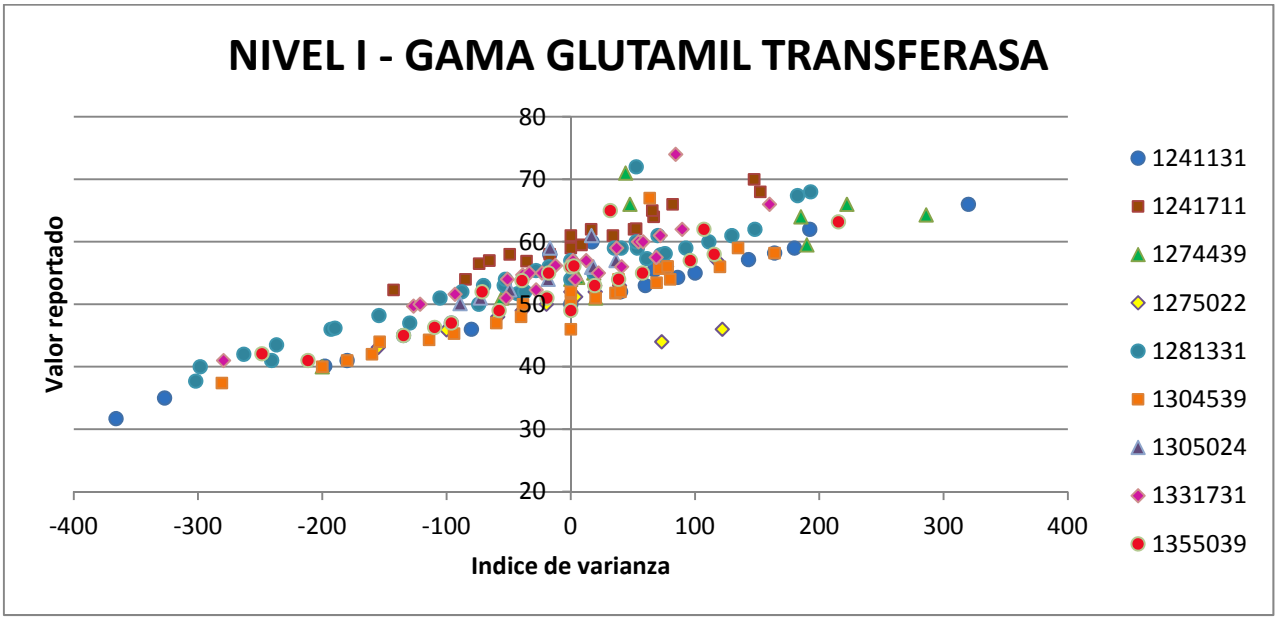
NIVEL I - GAMA GLUTAMIL TRANSFERASA
Valor reportado
Indice de varianza
80
70
60
50
40
30
20
-400
-300
-200
-100
0
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400
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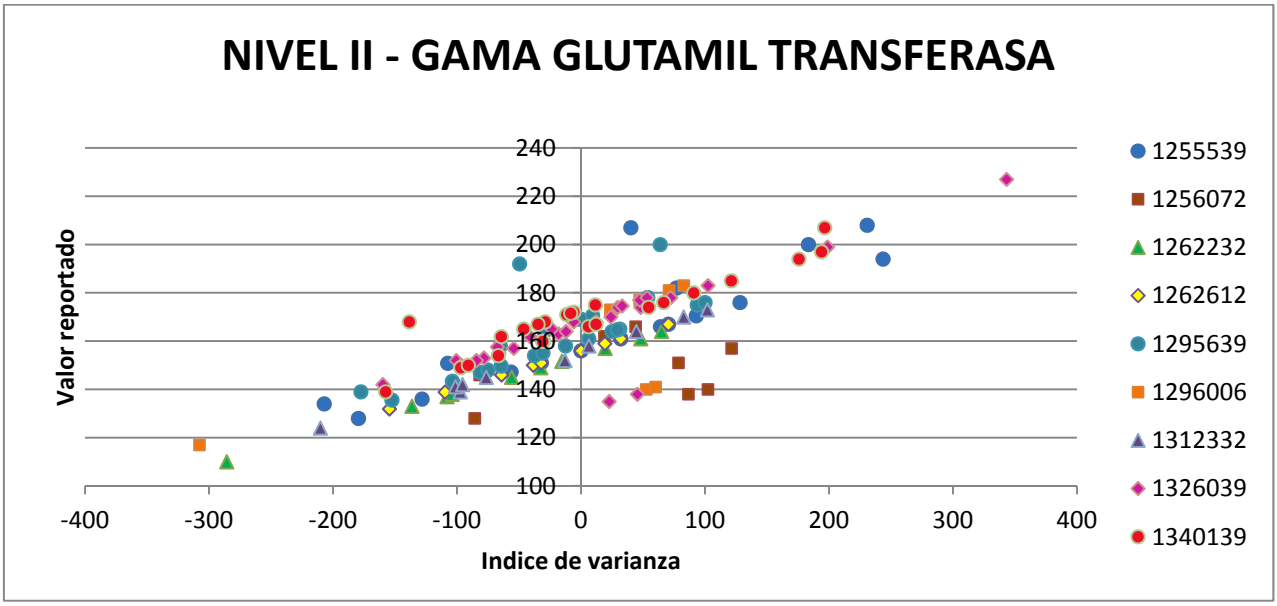
NIVEL II - GAMA GLUTAMIL TRANSFERASA
Valor reportado
Indice de varianza
240
220
200
180
160
140
120
100
-400
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-200
-100
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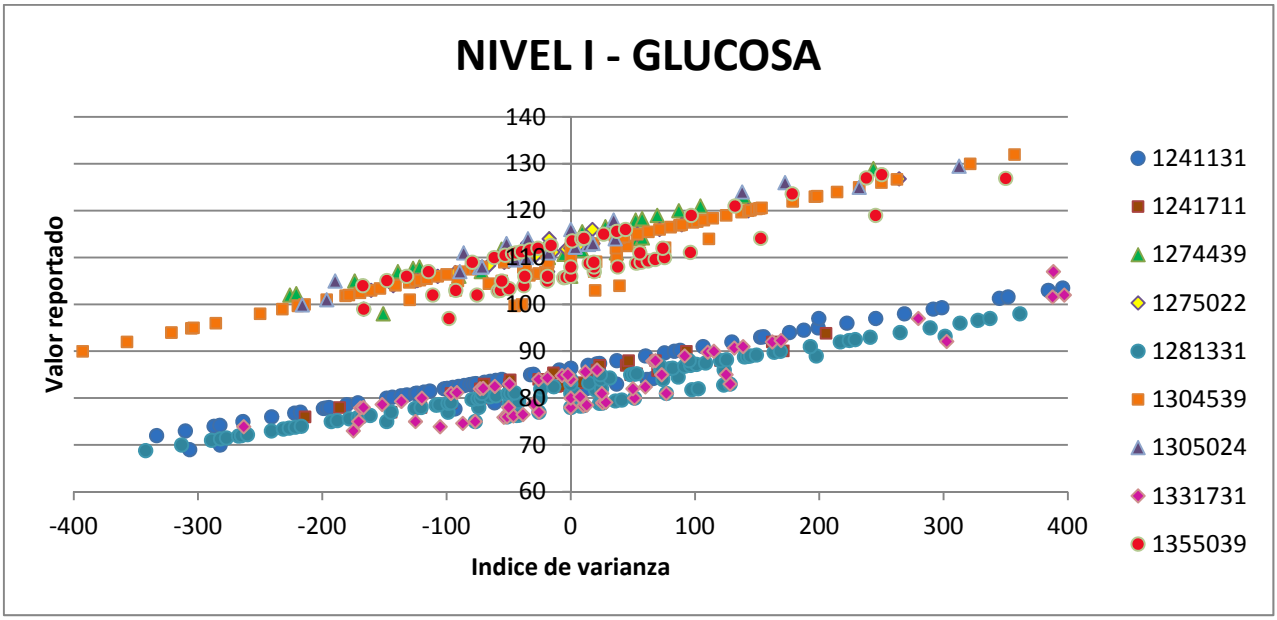
NIVEL I - GLUCOSA
Valor reportado
Indice de varianza
140
130
120
110
100
90
80
70
60
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-200
-100
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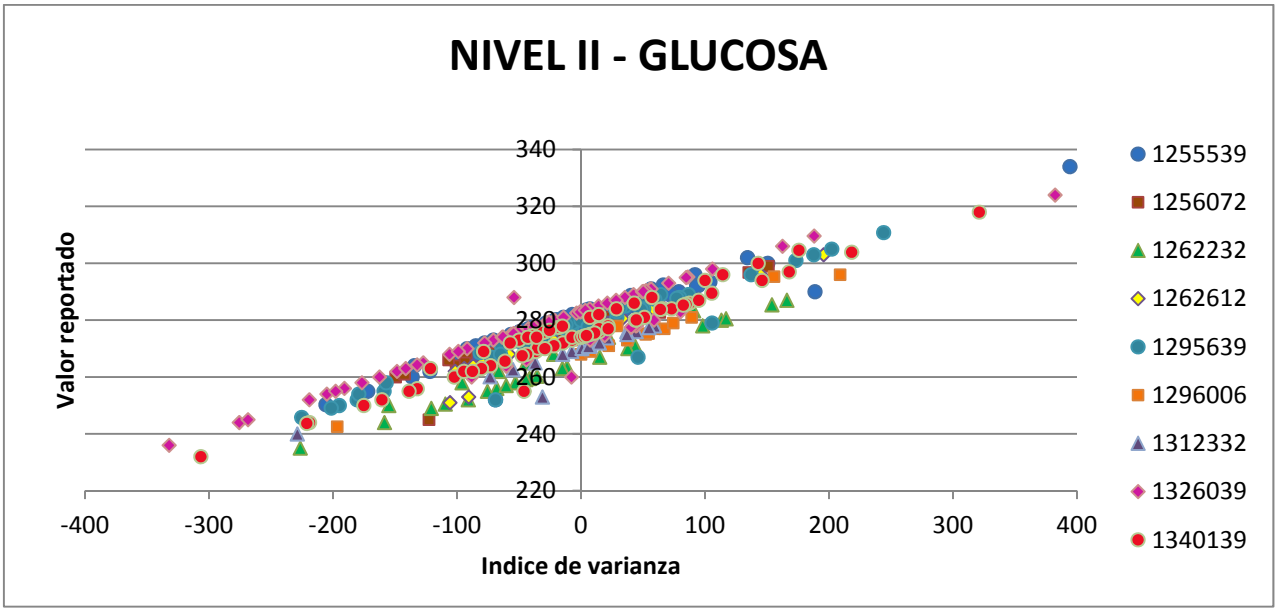
NIVEL II - GLUCOSA
Valor reportado
Indice de varianza
340
320
300
280
260
240
220
-400
-300
-200
-100
0
100
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400
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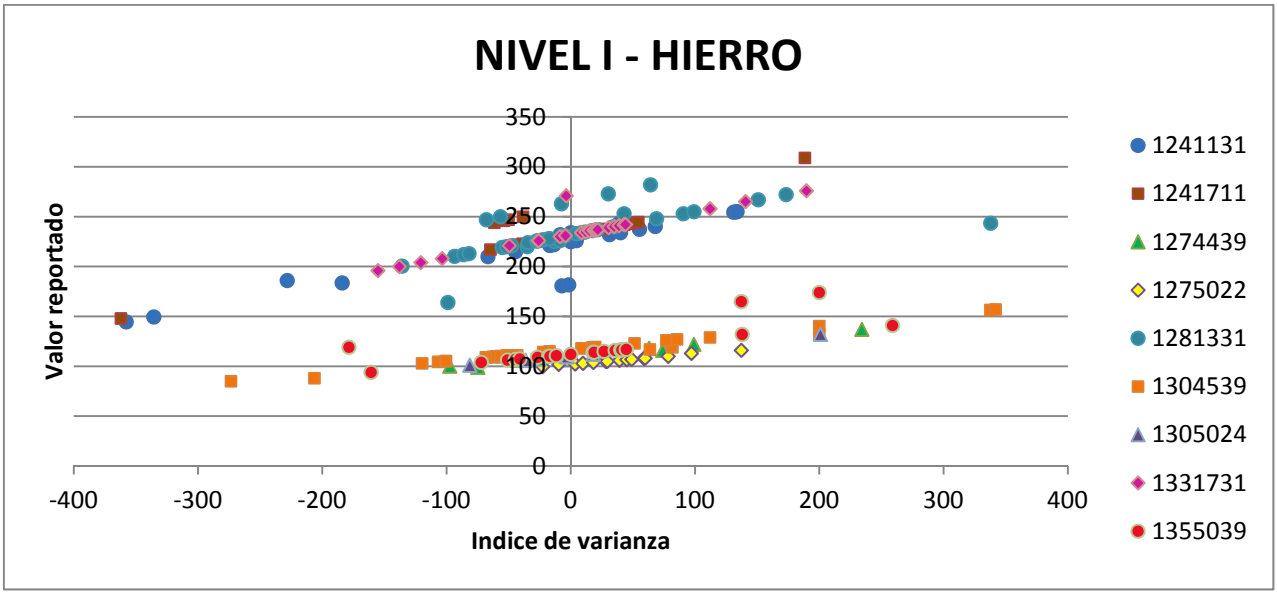
NIVEL I - HIERRO
Valor reportado
Indice de varianza
350
300
250
200
150
100
50
0
-400
-300
-200
-100
0
100
200
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400
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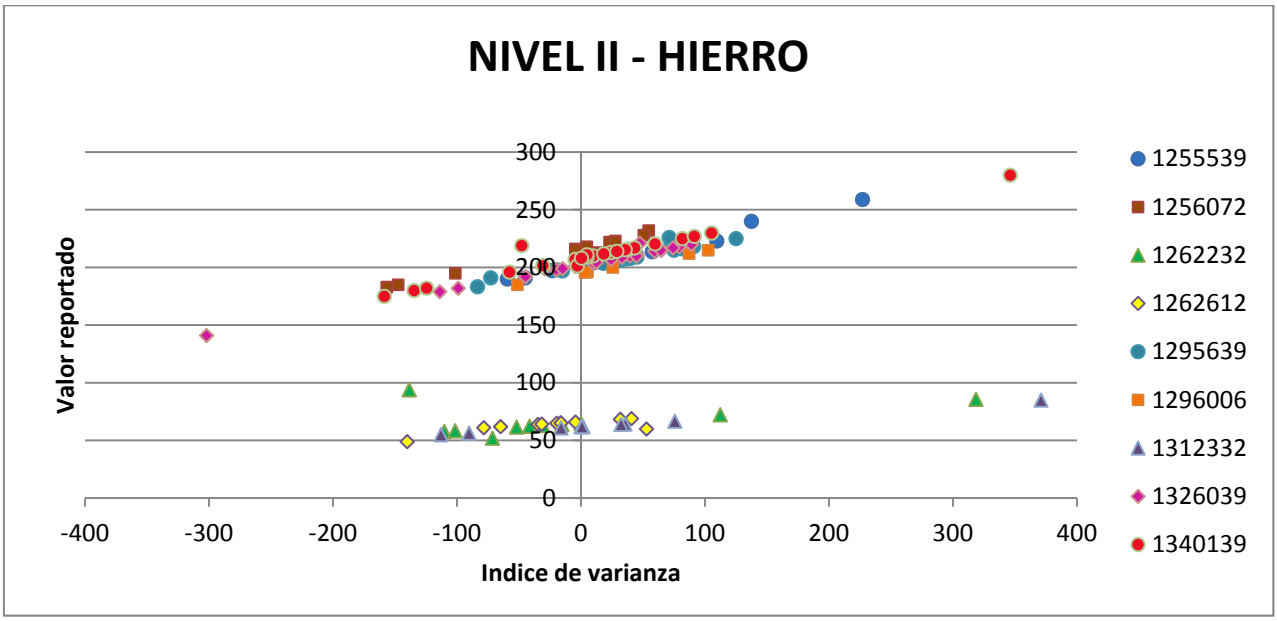
NIVEL II - HIERRO
Valor reportado
Indice de varianza
300
250
200
150
100
50
0
-400
-300
-200
-100
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400
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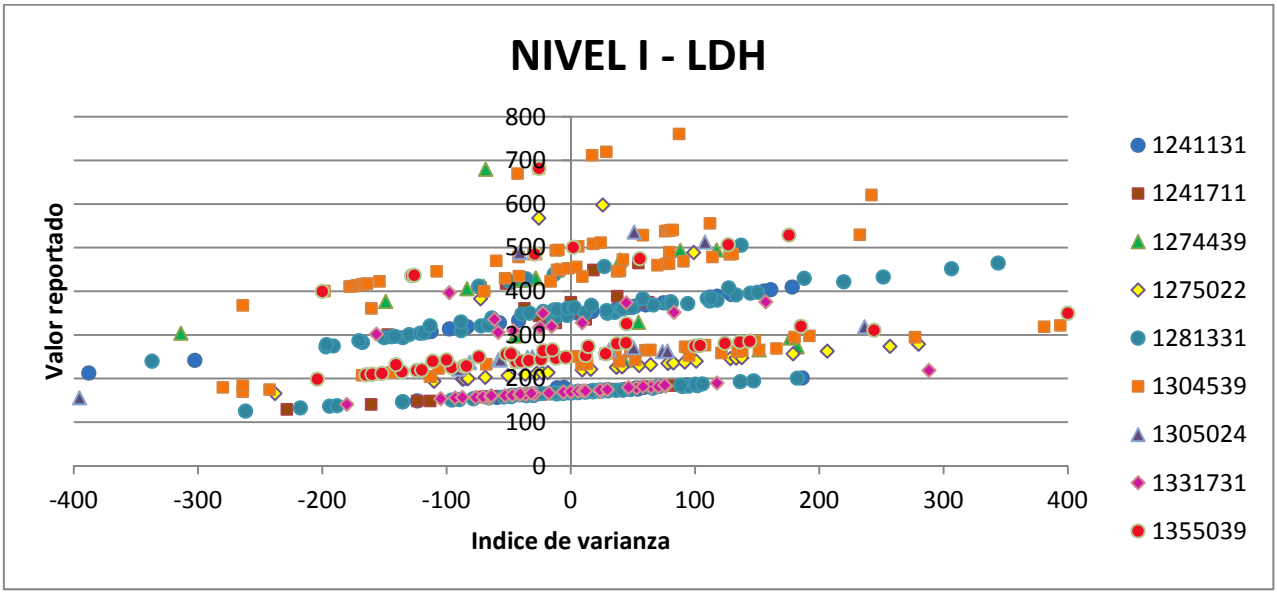
NIVEL I - LDH
Valor reportado
Indice de varianza
800
700
600
500
400
300
200
100
0
-400
-300
-200
-100
0
100
200
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400
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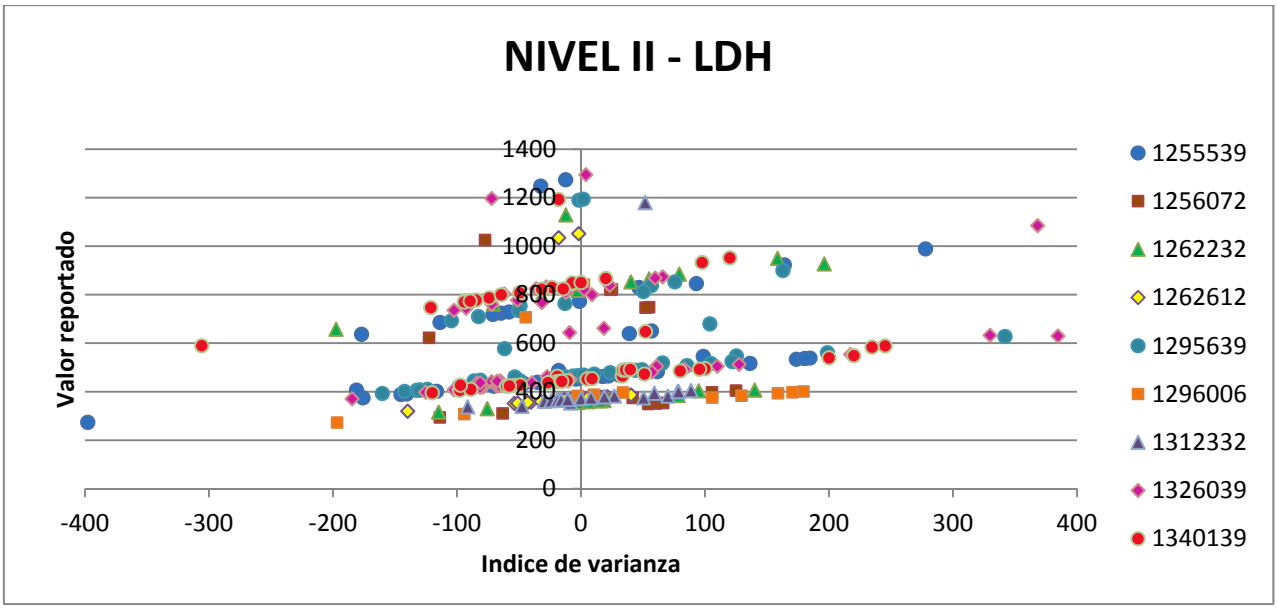
1355039


NIVEL II - LDH
Valor reportado
Indice de varianza
1400
1200
1000
800
600
400
200
0
-400
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-200
-100
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400
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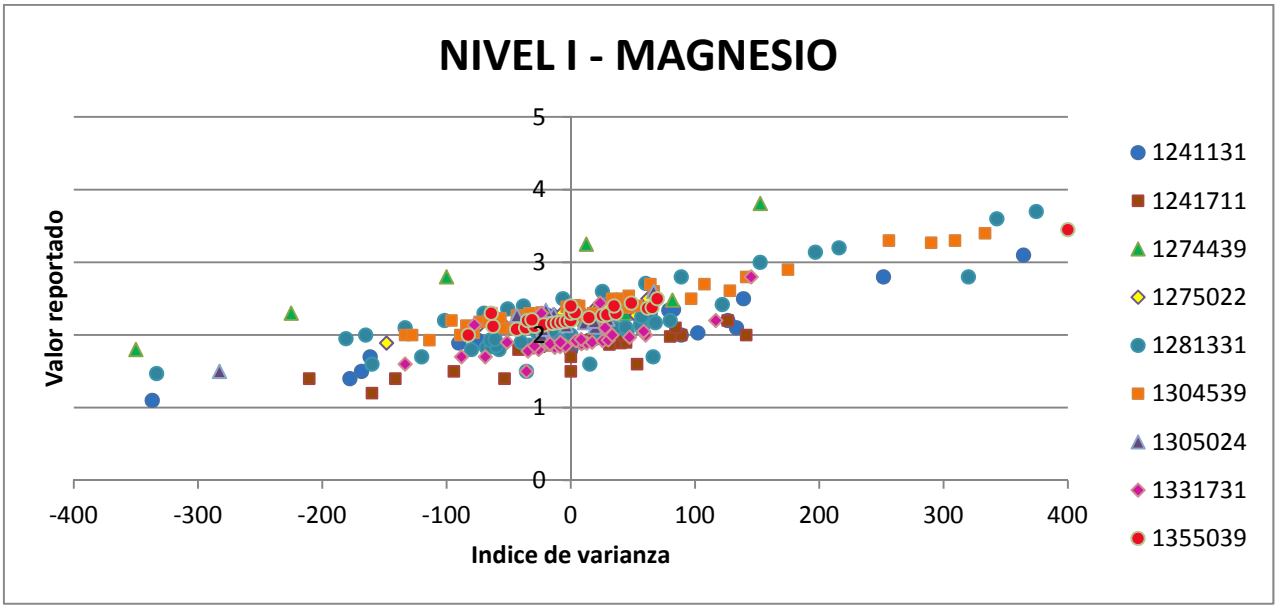
NIVEL I - MAGNESIO
Valor reportado
Indice de varianza
5
4
3
2
1
0
-400
-300
-200
-100
0
100
200
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400
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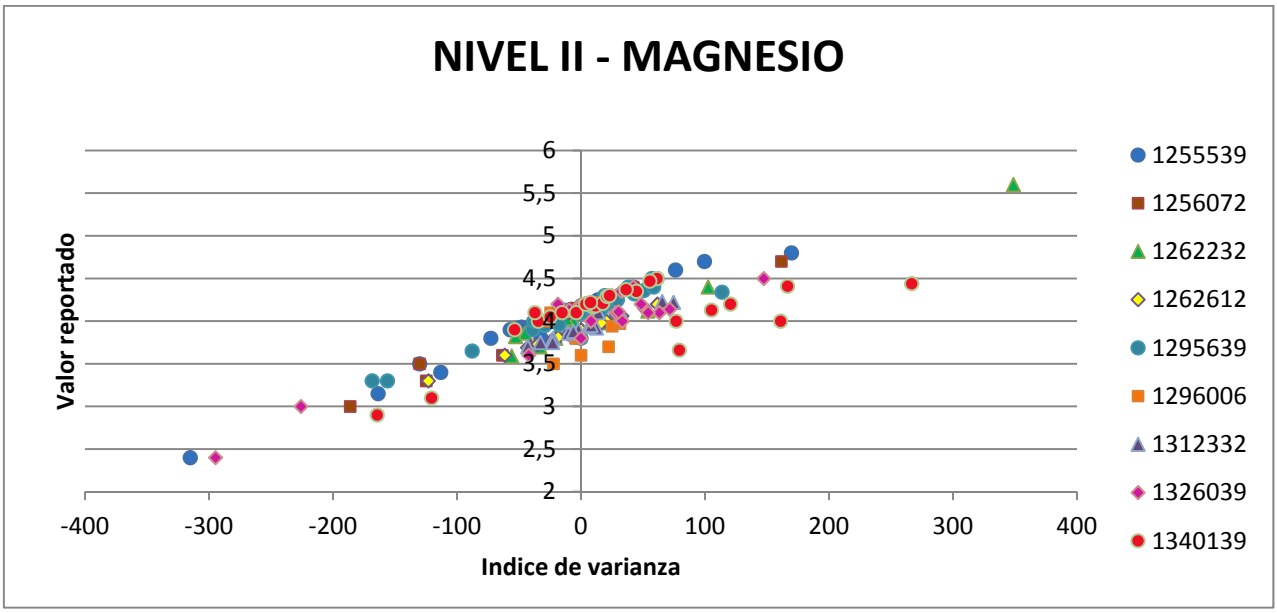
NIVEL II - MAGNESIO
Valor reportado
Indice de varianza
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5,5
5
4,5
4
3,5
3
2,5
2
-400
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-200
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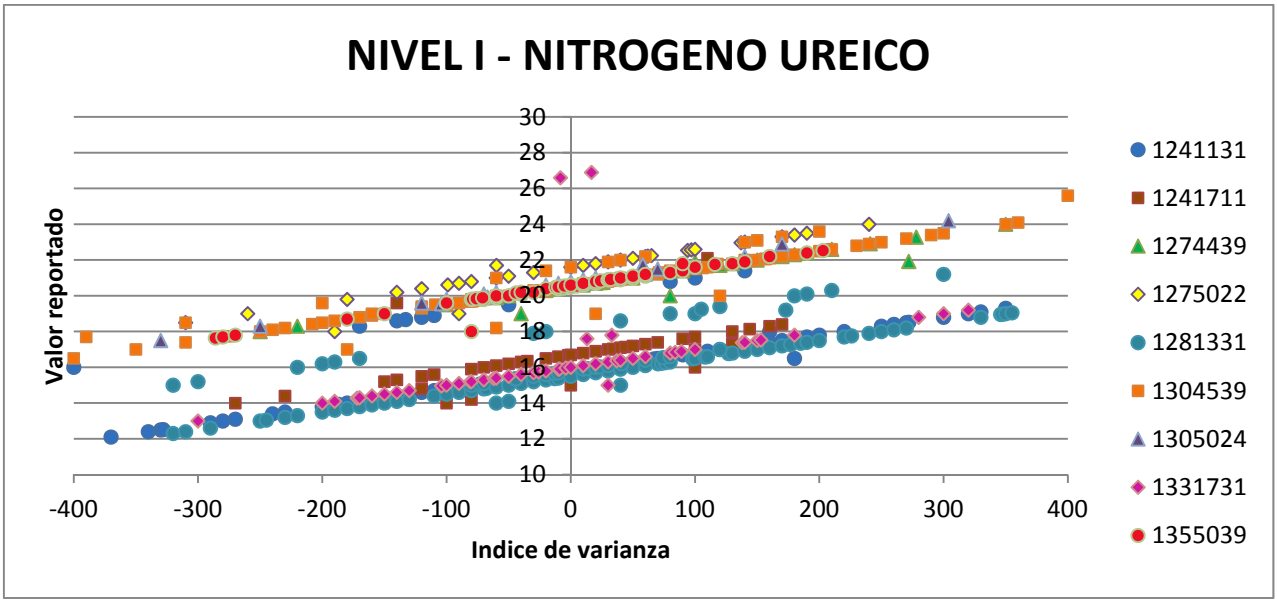
NIVEL I - NITROGENO UREICO
Valor reportado
Indice de varianza
30
28
26
24
22
20
18
16
14
12
10
-400
-300
-200
-100
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100
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400
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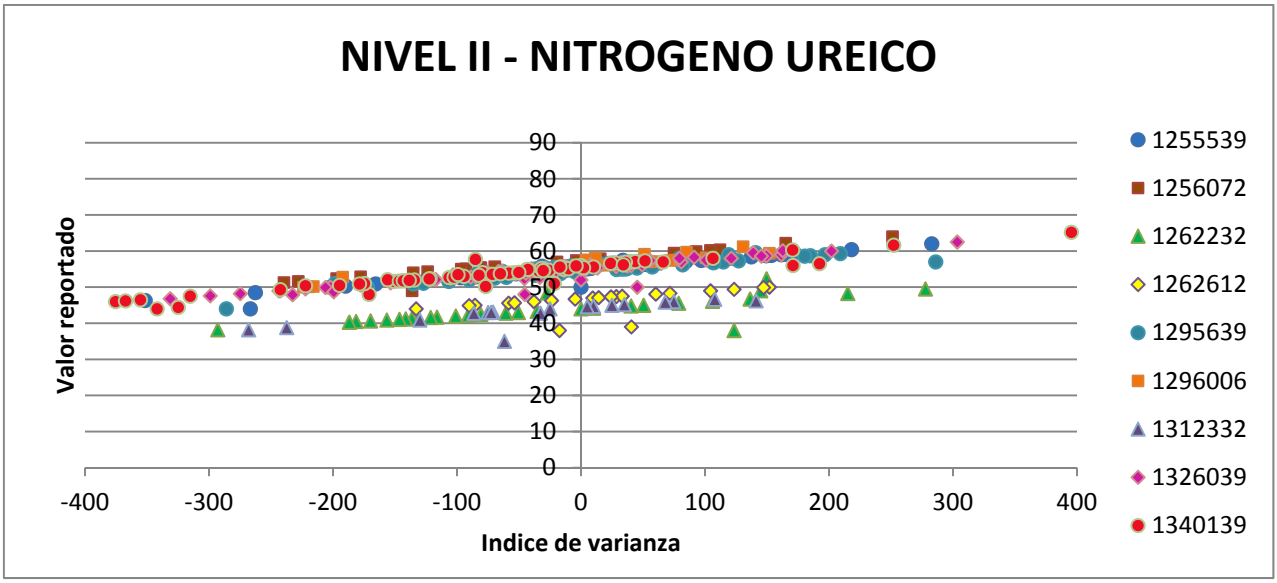
NIVEL II - NITROGENO UREICO
Valor reportado
Indice de varianza
90
80
70
60
50
40
30
20
10
0
-400
-300
-200
-100
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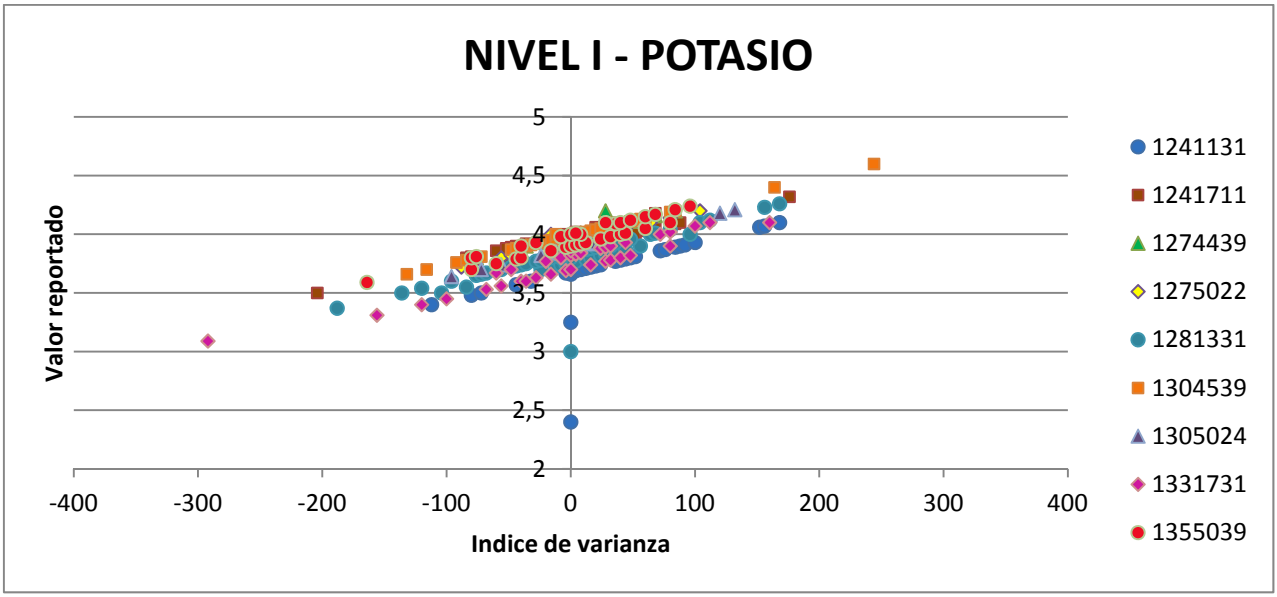
NIVEL I - POTASIO
Valor reportado
Indice de varianza
5
4,5
4
3,5
3
2,5
2
-400
-300
-200
-100
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100
200
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400
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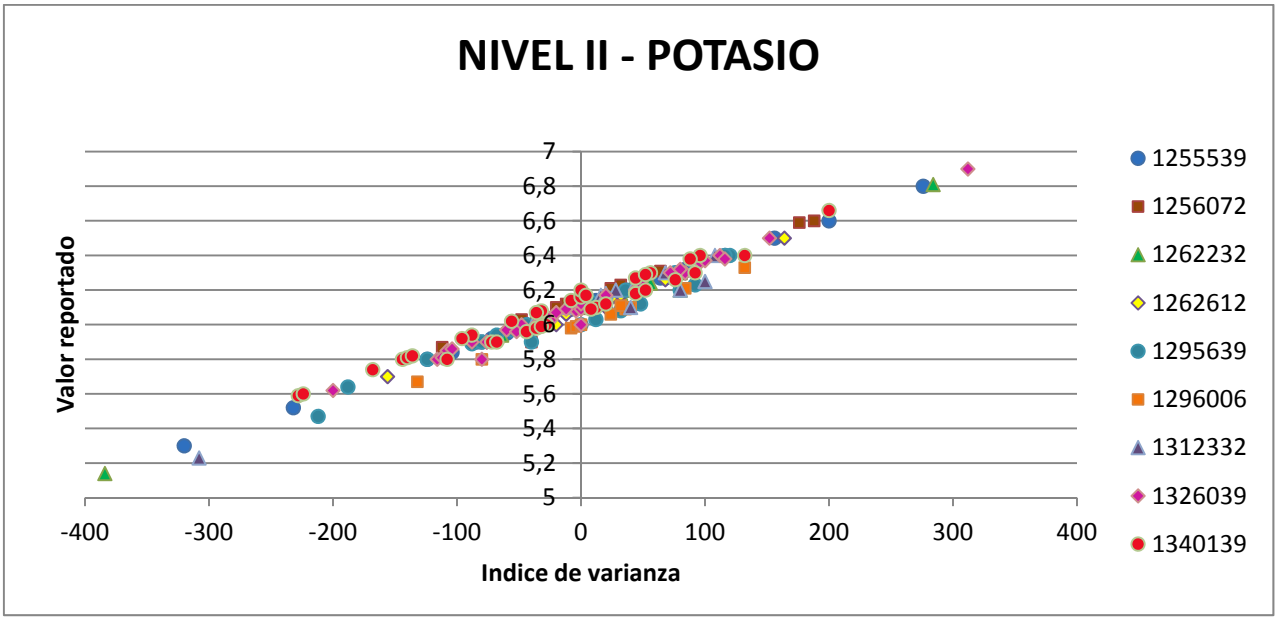
1355039


NIVEL II - POTASIO
Valor reportado
Indice de varianza
7
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6,6
6,4
6,2
6
5,8
5,6
5,4
5,2
5
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-200
-100
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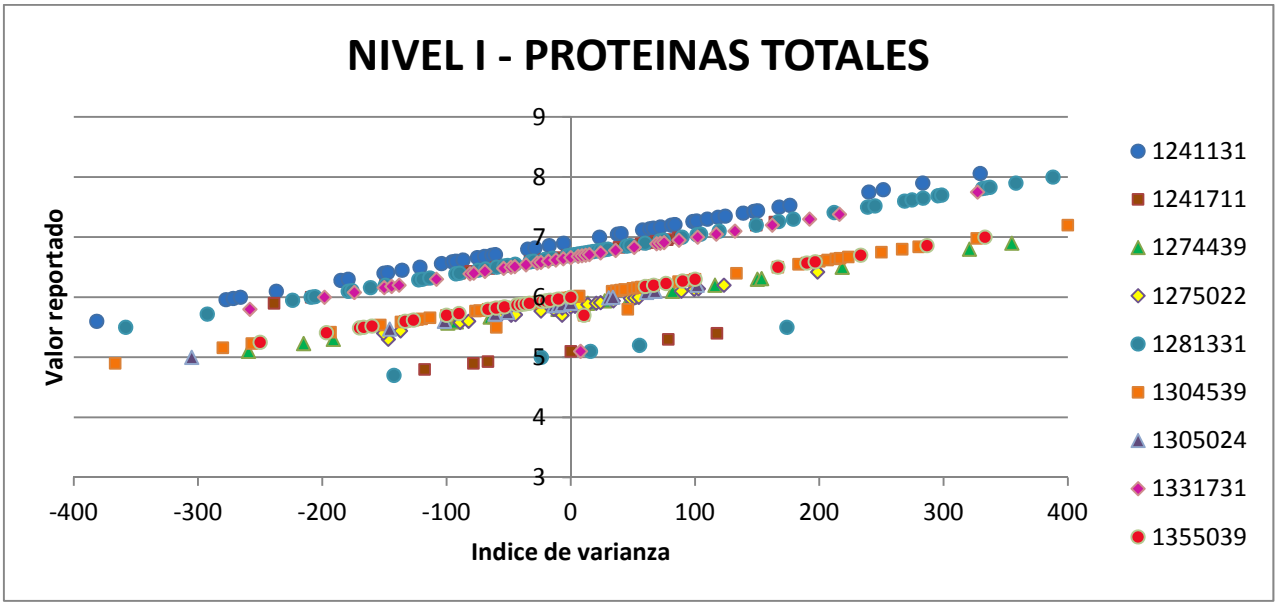
NIVEL I - PROTEINAS TOTALES
Valor reportado
Indice de varianza
9
8
7
6
5
4
3
-400
-300
-200
-100
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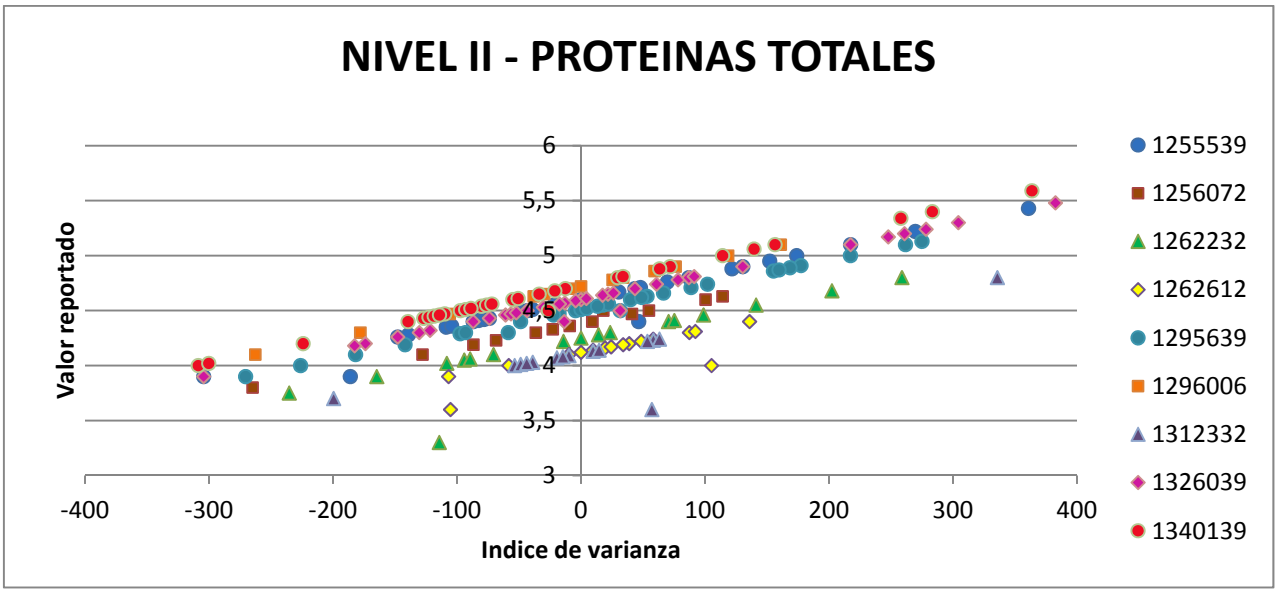
NIVEL II - PROTEINAS TOTALES
Valor reportado
Indice de varianza
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4,5
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3,5
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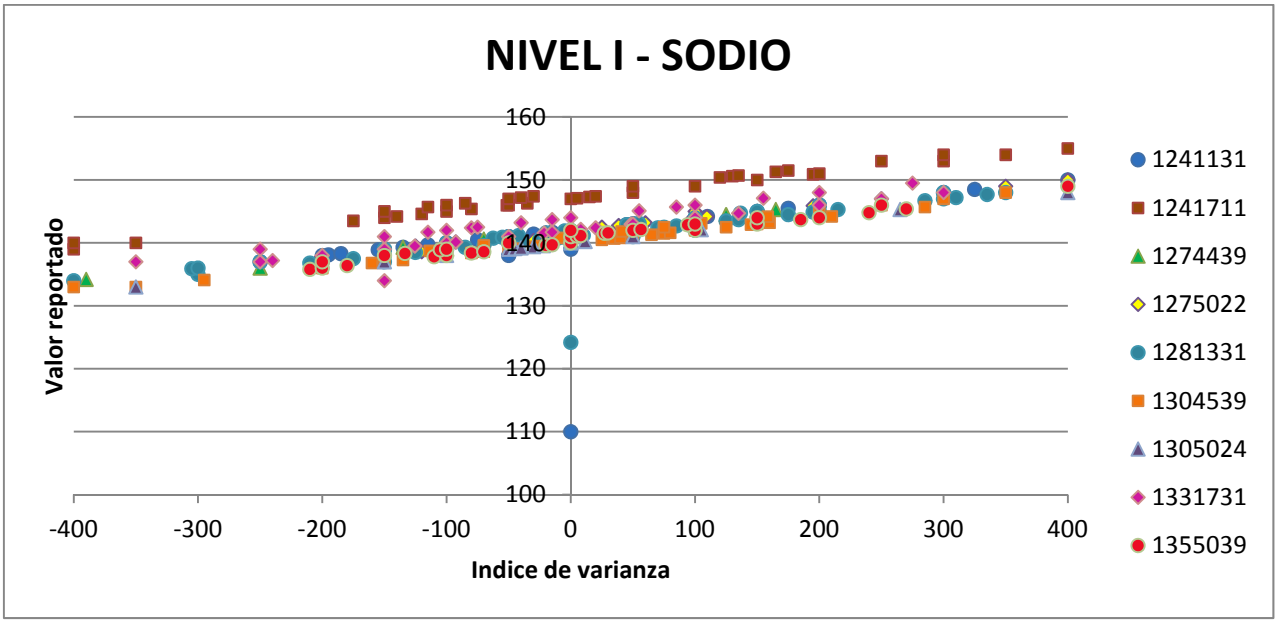
NIVEL I - SODIO
Valor reportado
160
150
140
130
120
110
100
-400
-300
-200
-100
0
100
200
300
400
Indice de varianza
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1241711
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1281331
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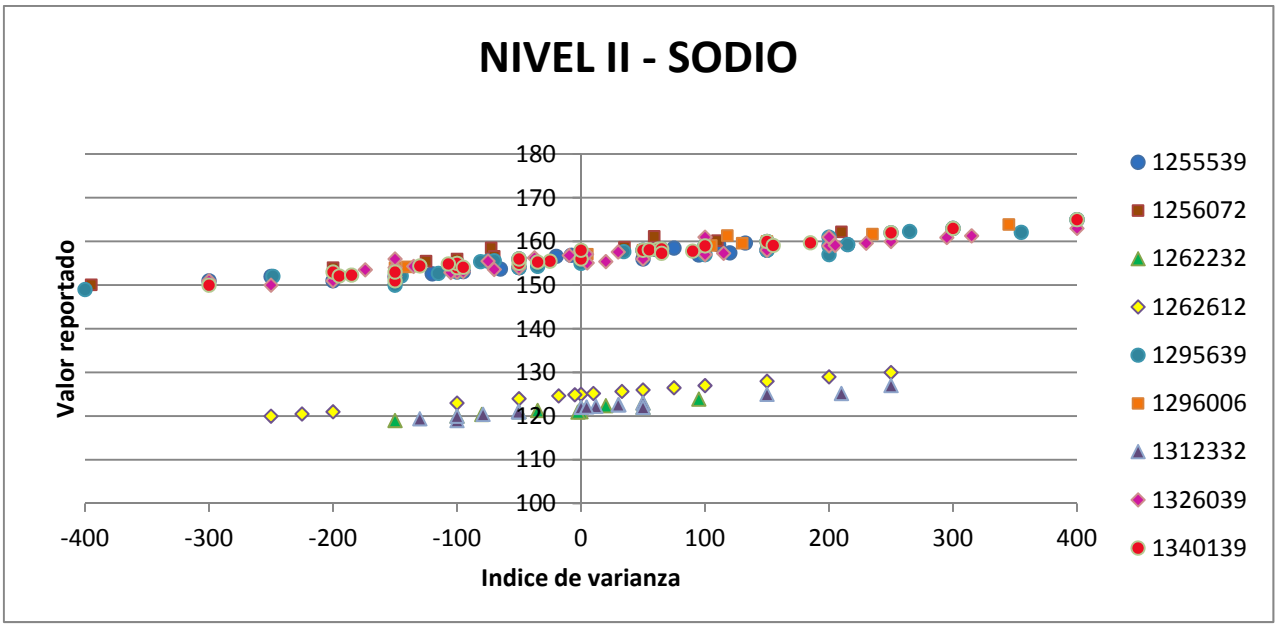
1355039


NIVEL II - SODIO
Valor reportado
180
170
160
150
140
130
120
110
100
-400
-300
-200
-100
0
100
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300
400
Indice de varianza
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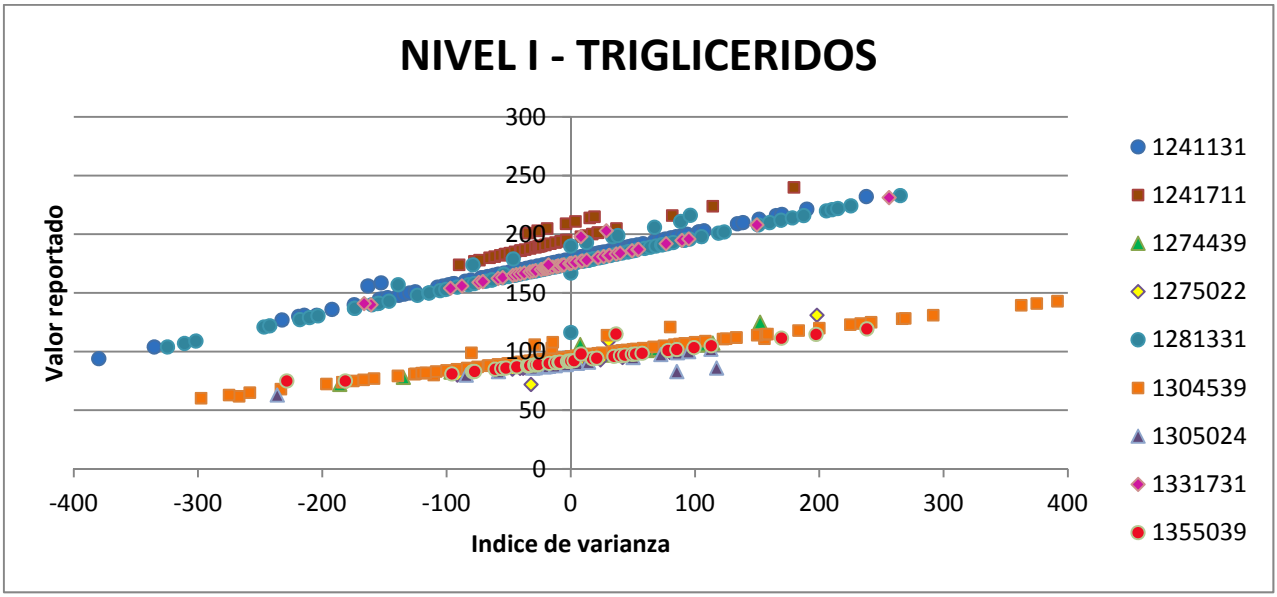
NIVEL I - TRIGLICERIDOS
Valor reportado
Indice de varianza
300
250
200
150
100
50
0
-400
-300
-200
-100
0
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400
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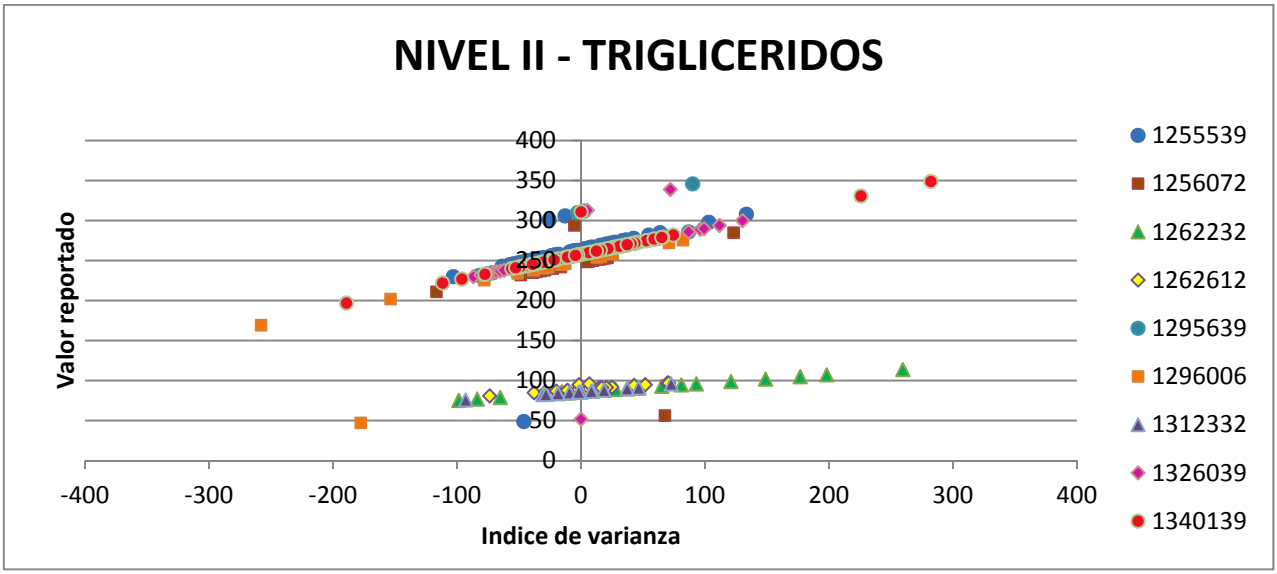
NIVEL II - TRIGLICERIDOS
Valor reportado
Indice de varianza
400
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300
250
200
150
100
50
0
-400
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-200
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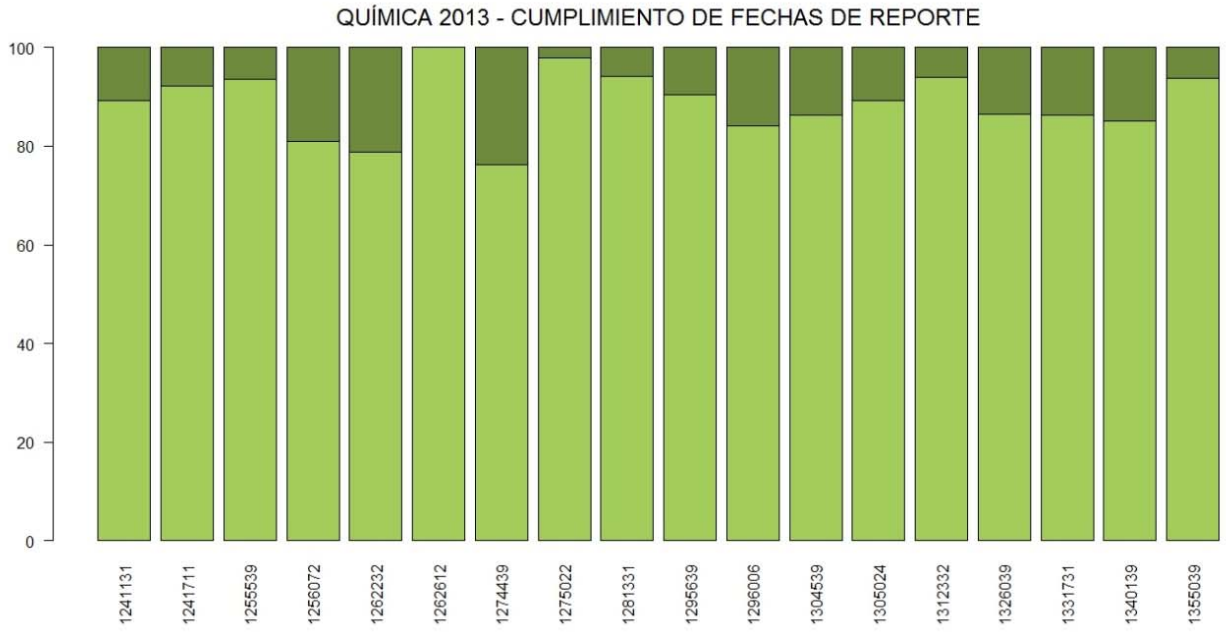
0
100
200
300
400
1255539
1256072
1262232
1262612
1295639
1296006
1312332
1326039
1340139

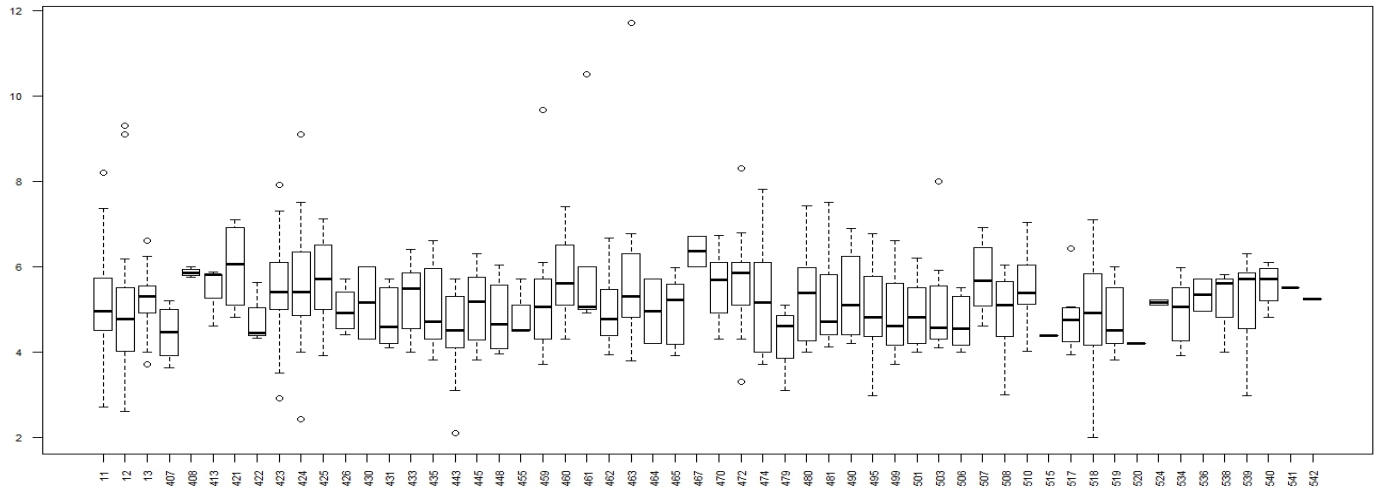
Pese a la gran campaña realizada para que los laboratorios participantes hicieran sus reportes dentro de las fechas establecidas, sólo se logró con una de las referencias enviadas para el mes de marzo



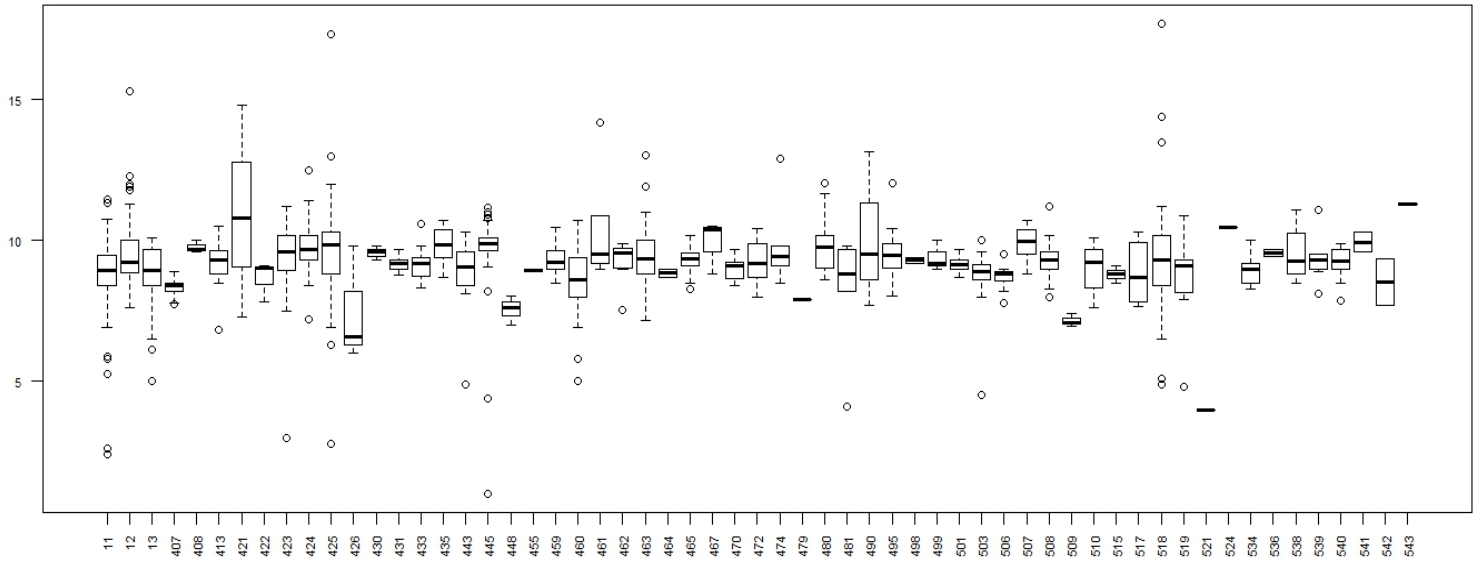
En el siguiente cuadro se muestran los equipos reportados durante el año con los códigos que fueron asignados y su comportamiento se muestra en los gráficos Box Plot que se leen a continuación.

grupo	Equipo	grupo	Equipo
11	A 15 / A 25 Biosystems	470	Microlab 300
12	BTS 310/ 330/ Biosystems BTS 350 Biosystems	472	Mindray BS 300
13	Humalyser Junior/ 2000/ Primus/Human/3000 Human	474	Rayto RT 9200
407	Vitros 250/500 OCD	479	Espectrofotometros Analogos
408	Clinicon 4010 Roche	480	Advia1200/1650/1800/2400 Siemens
421	Microlab 100/ Merck	481	Metrolab 2300
422	RA 1000 Siemens/Technicon	490	Erba Mannheim Chem 7
423	RA 50 Siemens/Technicon	491	CardioChek P,A,
424	Vitalab Selectra/2/Pro M	495	Mindray BS 120
425	Vitalab Selectra Junior/ E/ XL/pro XS	499	Rayto RT 9600/240
426	Spectronic 20 series /Milton Roy	501	Cobas 6000/C501/E601 / Roche
430	Hitachi 917/ Roche	503	Dimension RXL / Siemens
431	Modular P800 /Roche	506	Vitros 5,1 FS /5600 OCD
433	Synchron CX 4/7/9/ Beckman	507	Mindray BS 380
435	Konelab Series	508	Cobas c 311/ Roche
443	Cobas c111/ Roche	510	Erba Mannheim Chem 5
445	Architect ci 4100/ 8100/16200 Abbott	515	LX20/PRO/LXi725/Unicel DxC/ Beckman
448	Metrolab 1600 DR	517	Elan Atac 8000
455	Turner 340/390	518	Mindray BA 88
459	Prestige 24 i/Tokyo Boeki	519	Metrolab CM 250
460	Rayto RT-1904C	520	Linear Chemicals
461	Stat Fax Series	524	Mindray BS 400
462	BT 3000/3500/CD 400 Wiener lab	534	CM 200/ 250/Wiener
463	Mindray BS 200	536	LW C100/200/Landwind Medical
465	Olympus AU Series/ Beckman		

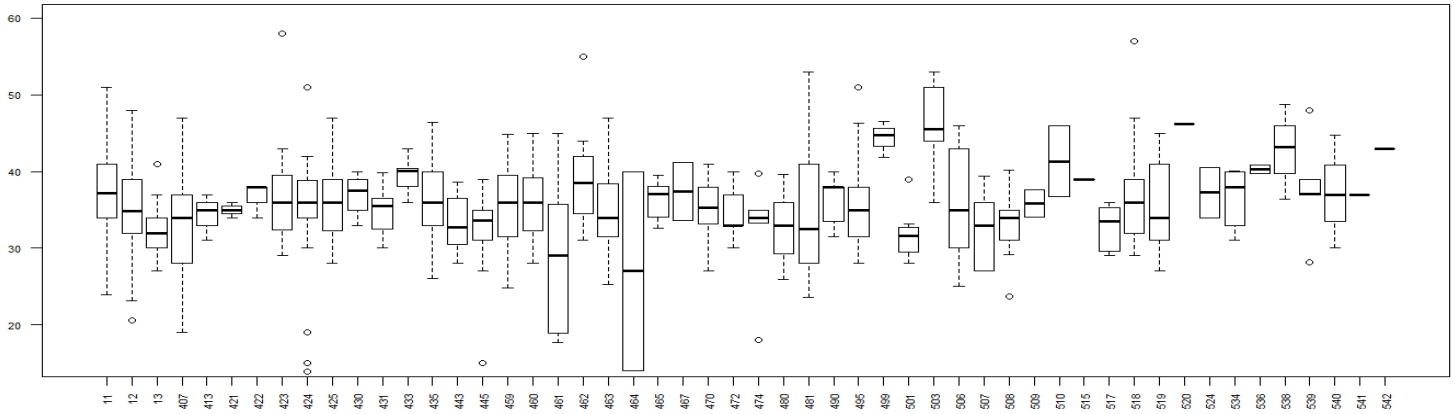
NIVEL I - ACIDO URICO: GRUPO DE EQUIPOS



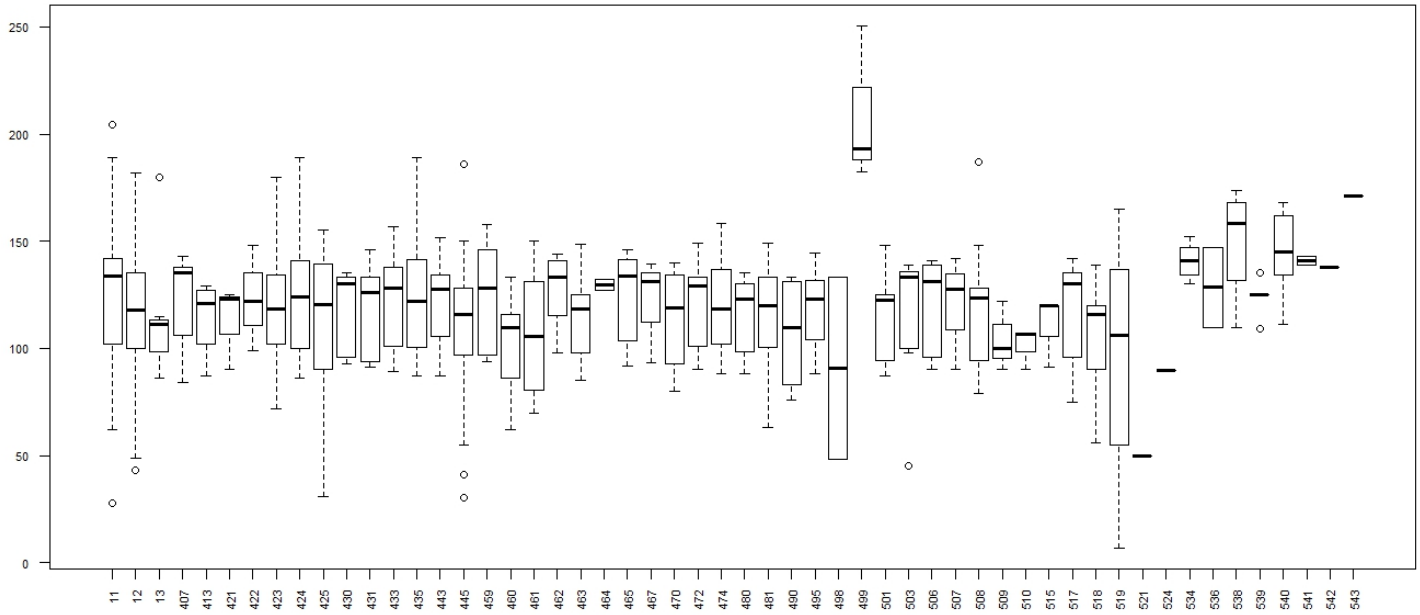
NIVEL II - ACIDO URICO: GRUPO DE EQUIPOS



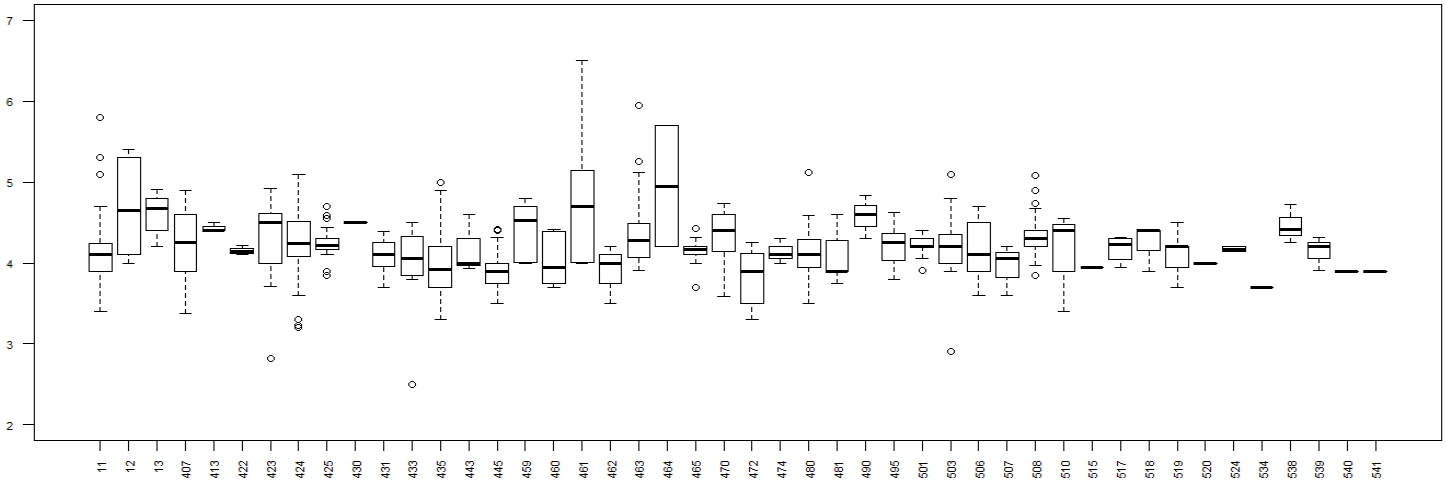
NIVEL I - ALAT: GRUPO DE EQUIPOS



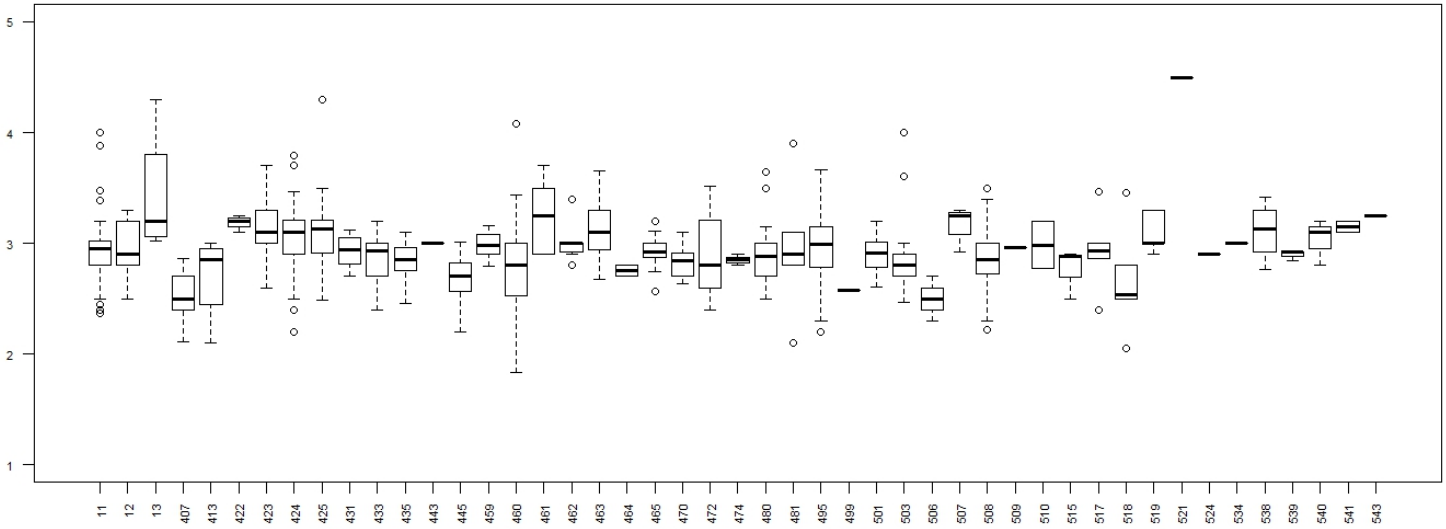
NIVEL II - ALAT: GRUPO DE EQUIPOS



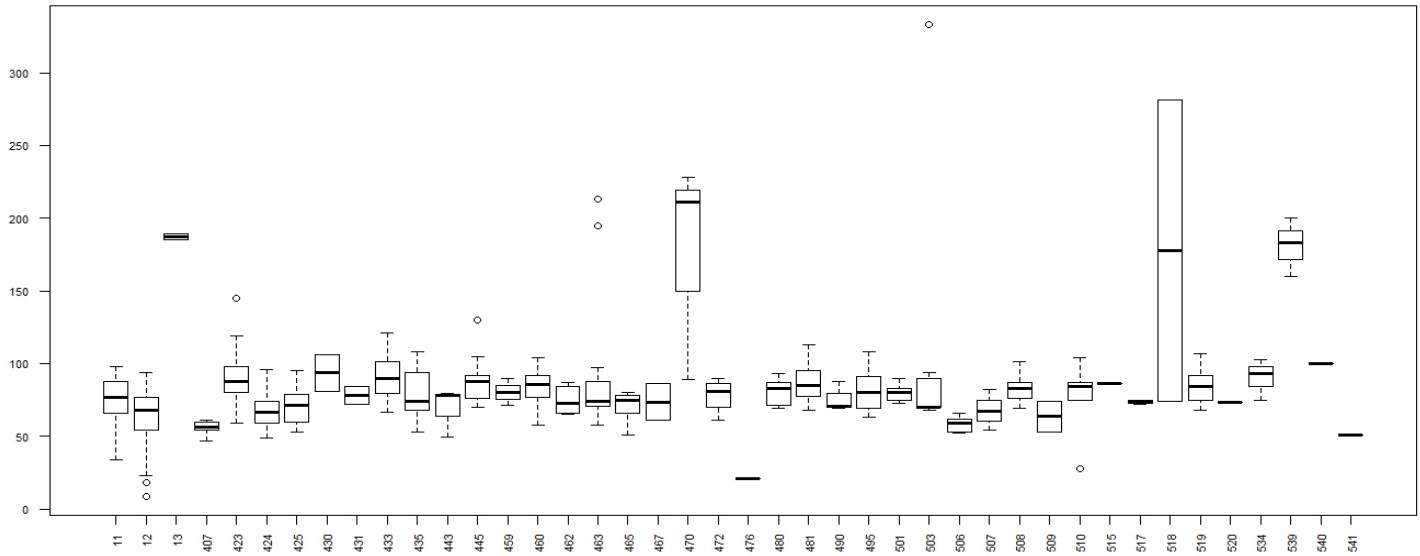
NIVEL I - ALBUMINA: GRUPO DE EQUIPOS



NIVEL II - ALBUMINA: GRUPO DE EQUIPOS



NIVEL I - AMILASA: GRUPO DE EQUIPOS



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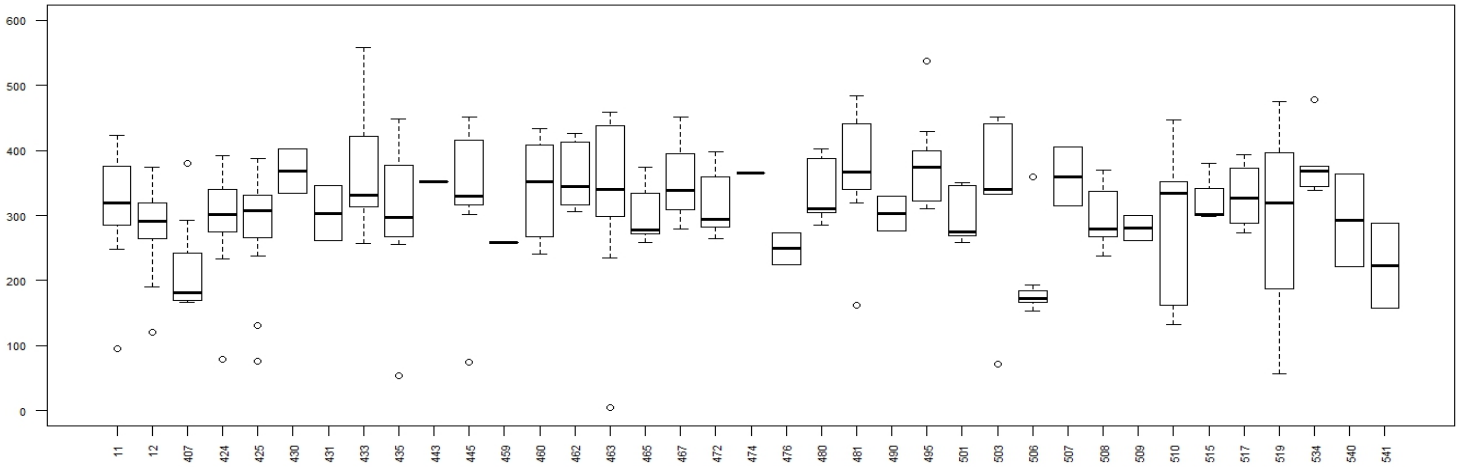
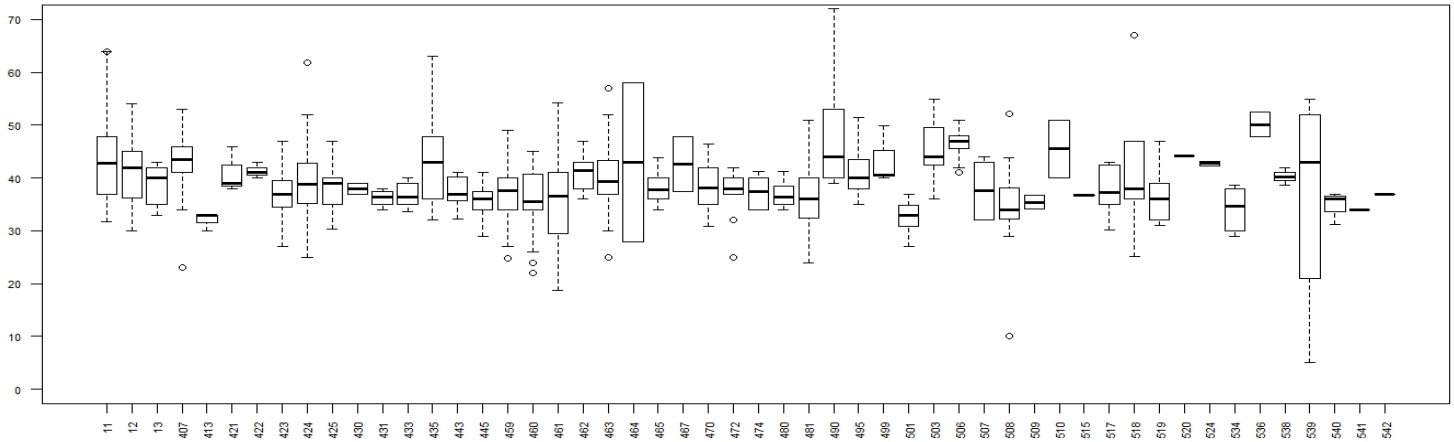


NIVEL I - ASAT: GRUPO DE EQUIPOS



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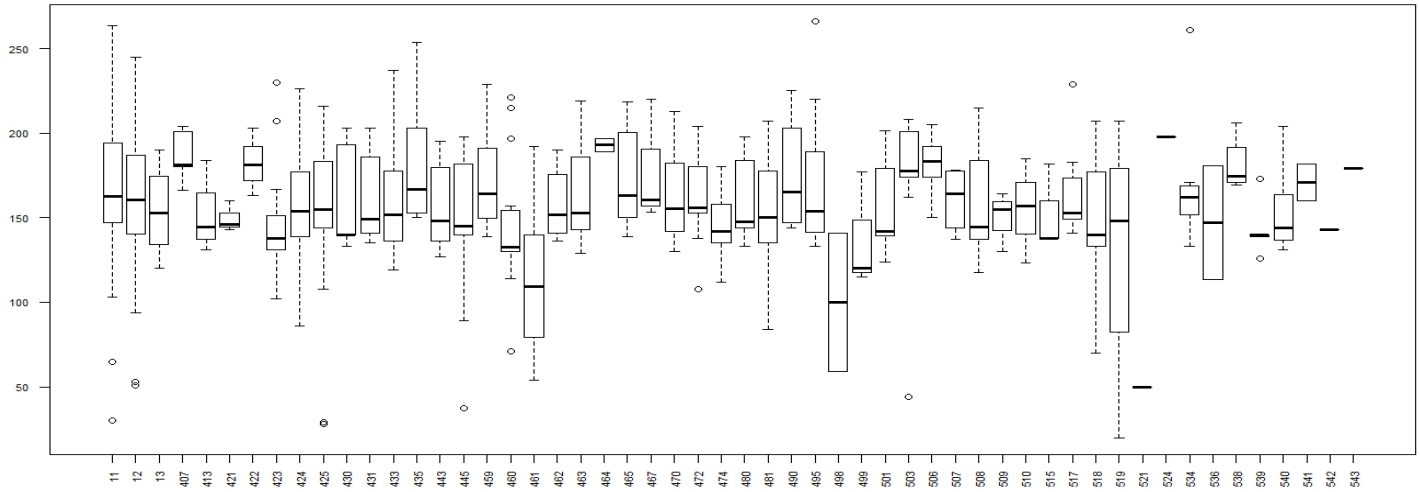
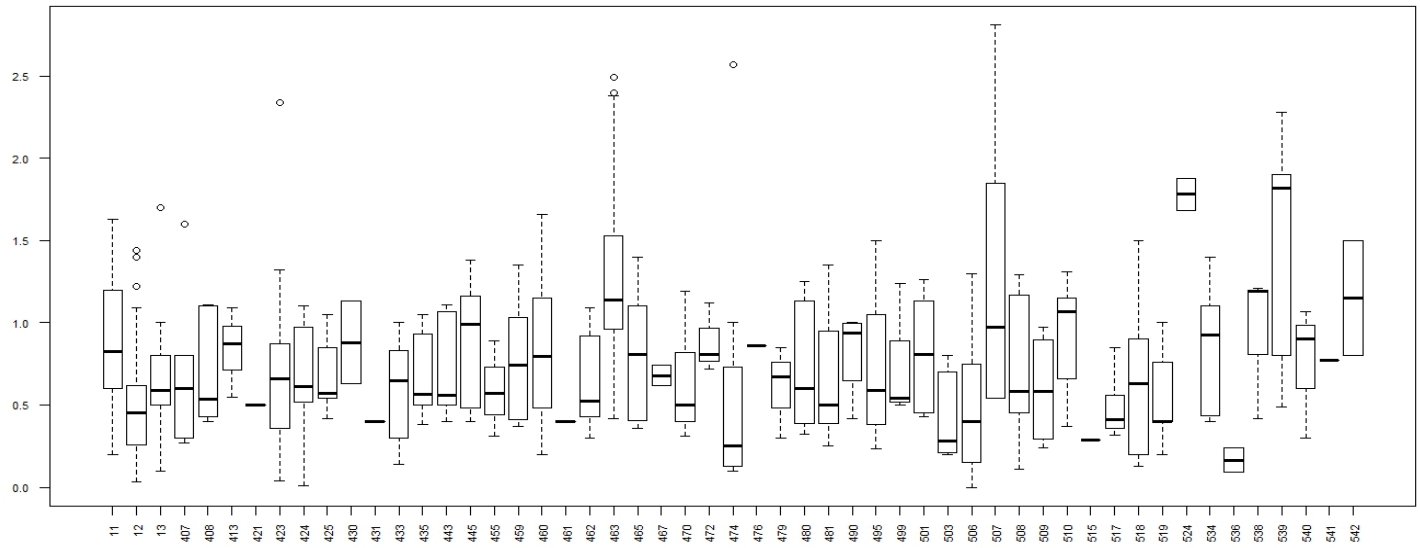
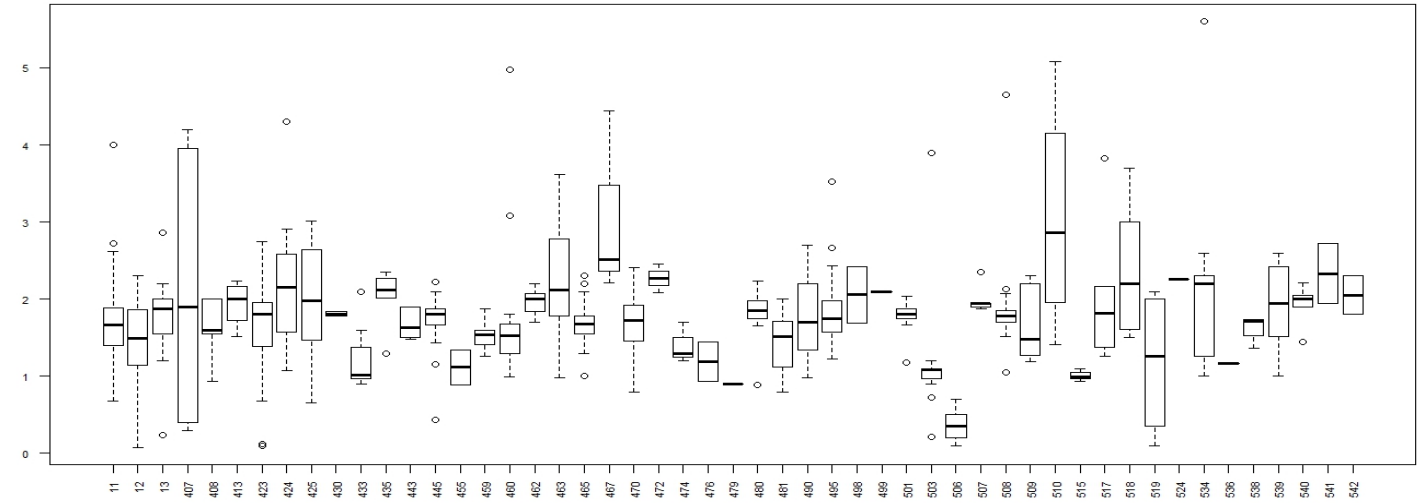


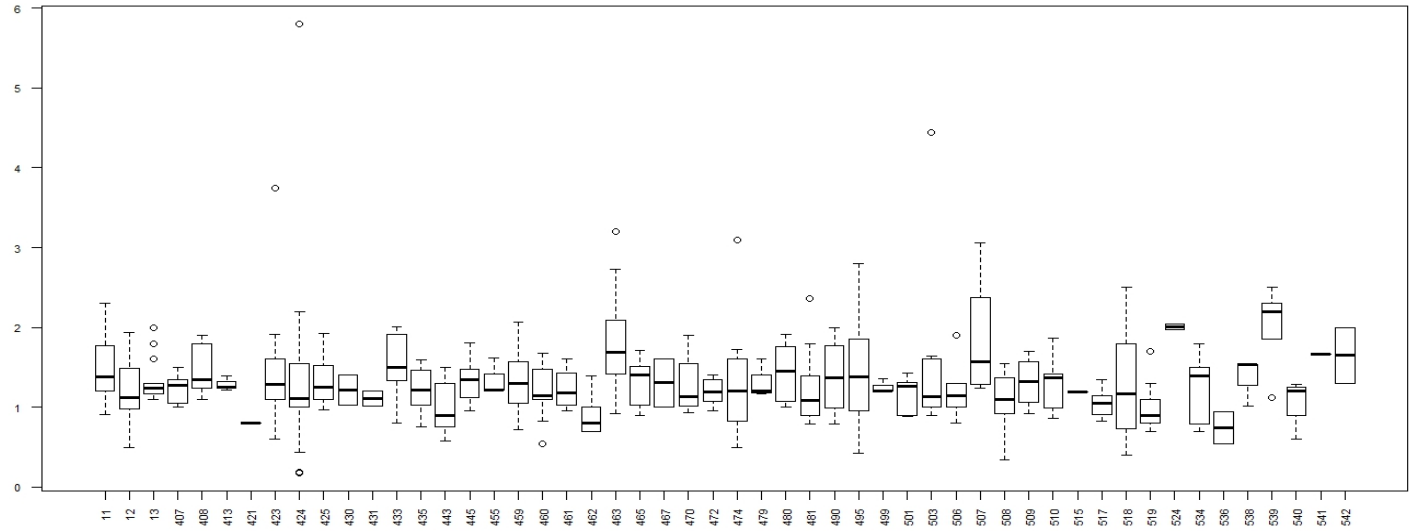
NIVEL I - BILIRRUBINA DIRECTA: GRUPO DE EQUIPOS



NIVEL II - BILIRRUBINA DIRECTA: GRUPO DE EQUIPOS



NIVEL I - BILIRRUBINA TOTAL: GRUPO DE EQUIPOS



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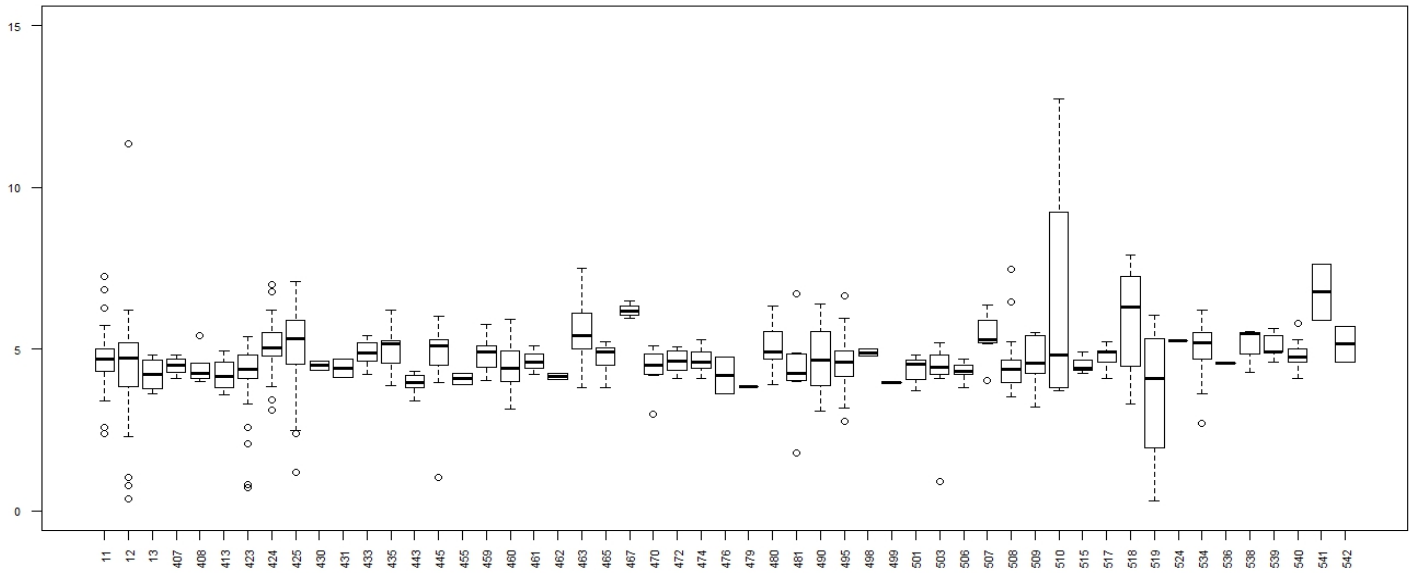
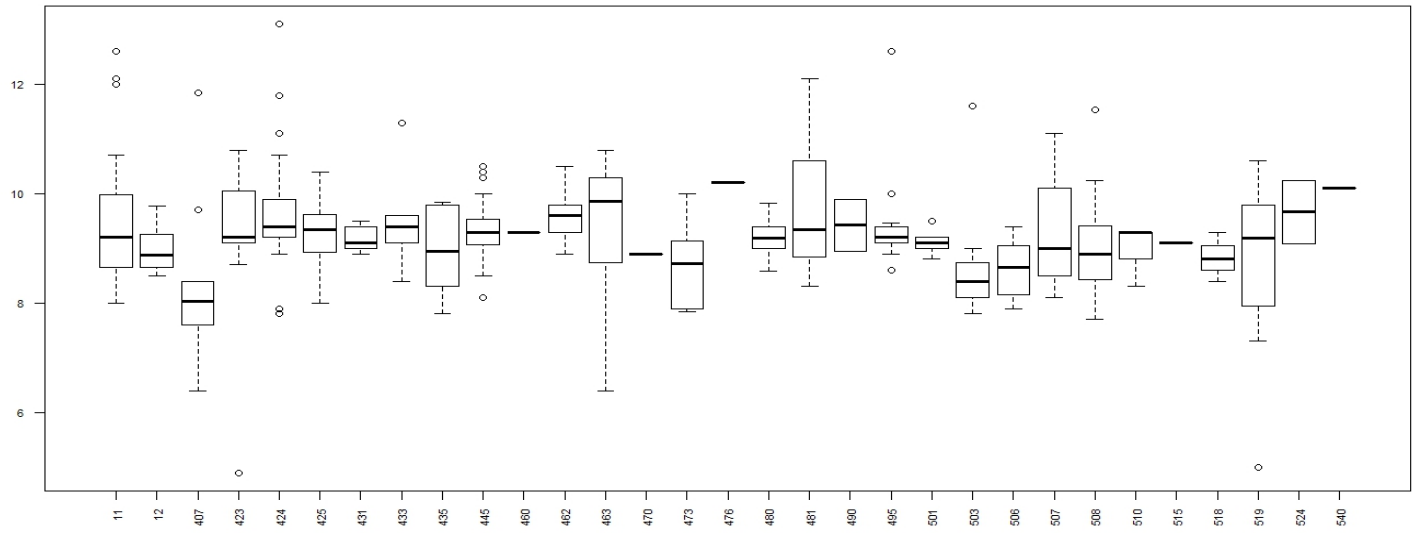


NIVEL I - CALCIO: GRUPO DE EQUIPOS



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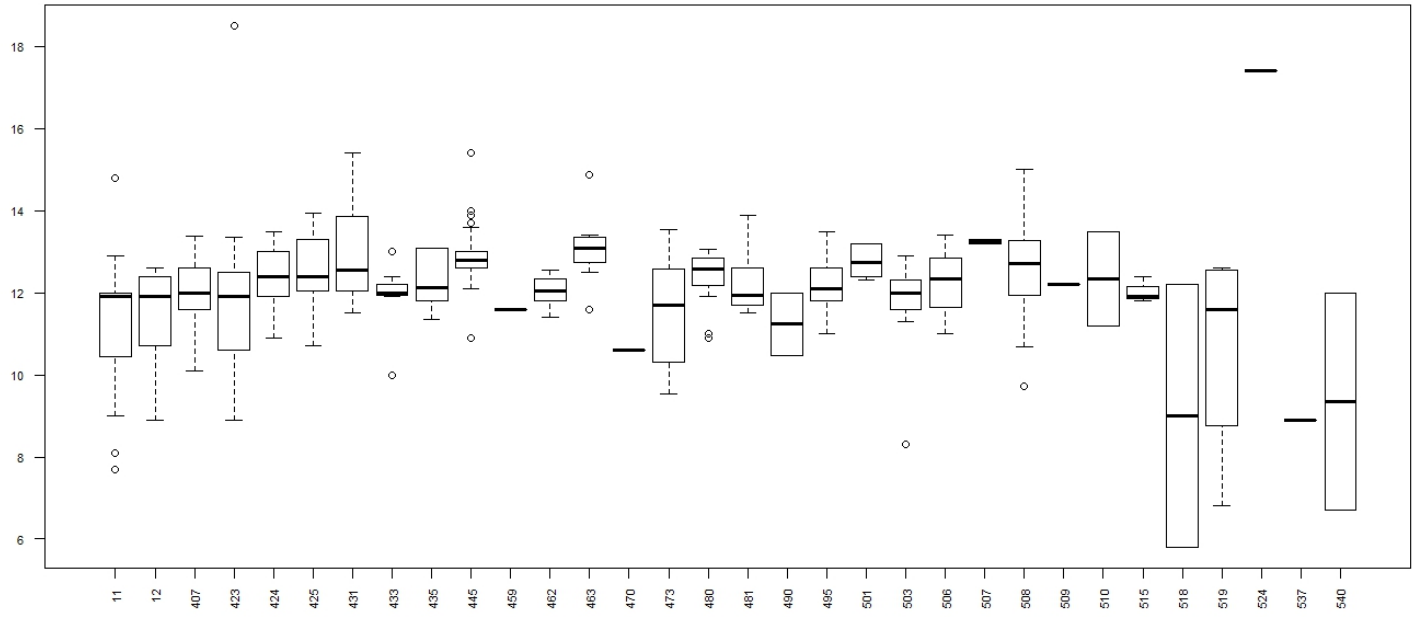
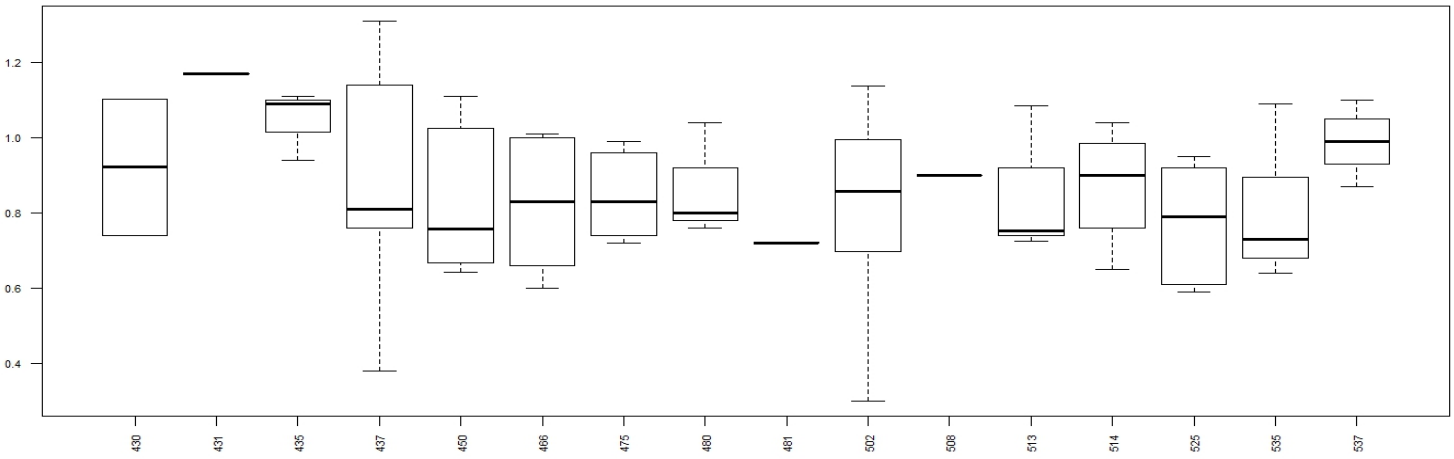


NIVEL I - CALCIO IONIZADO: GRUPO DE EQUIPOS



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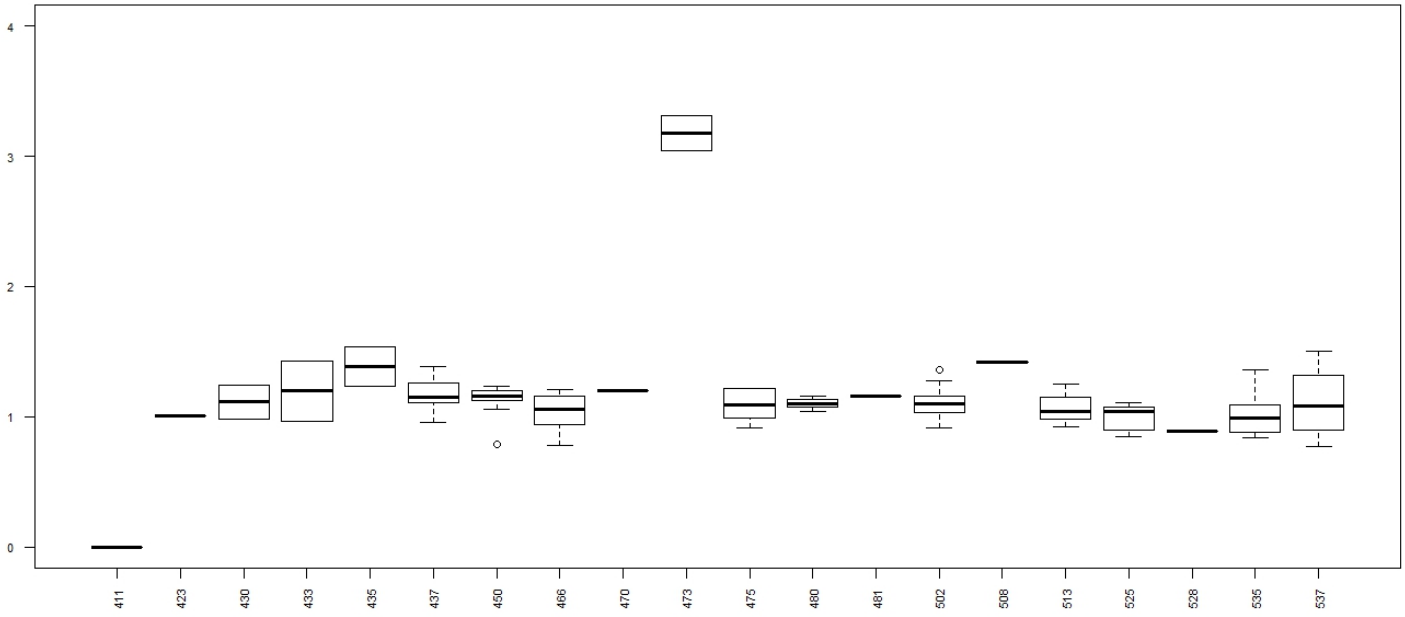
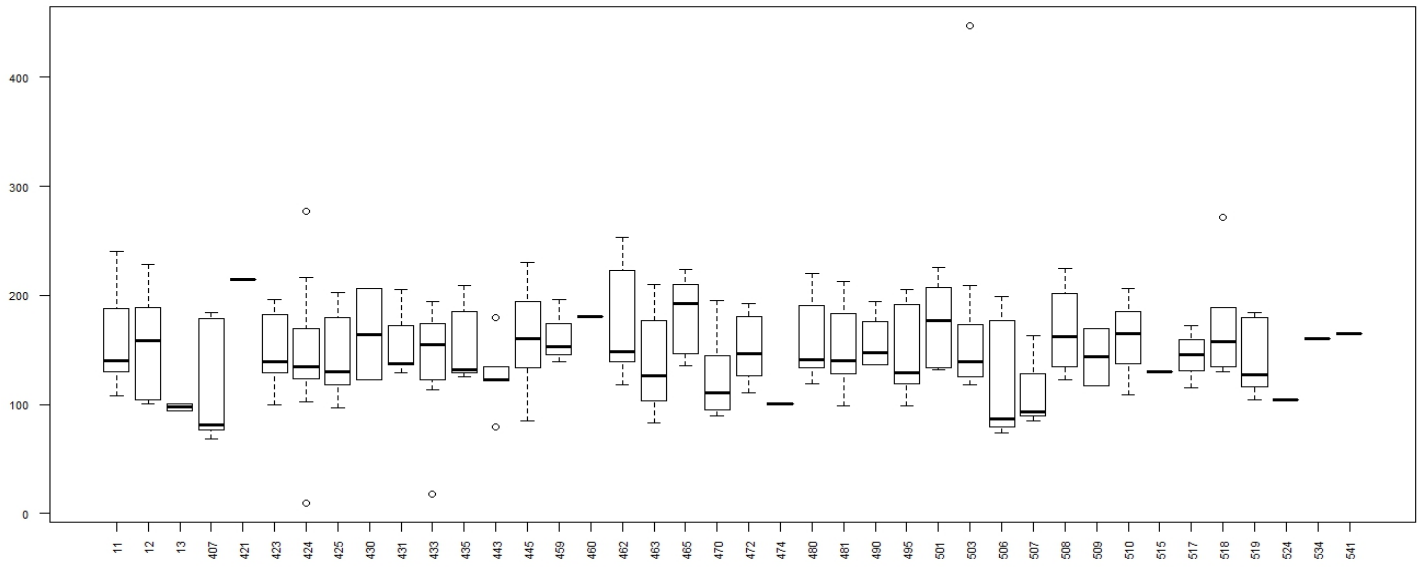


NIVEL I - CK: GRUPO DE EQUIPOS



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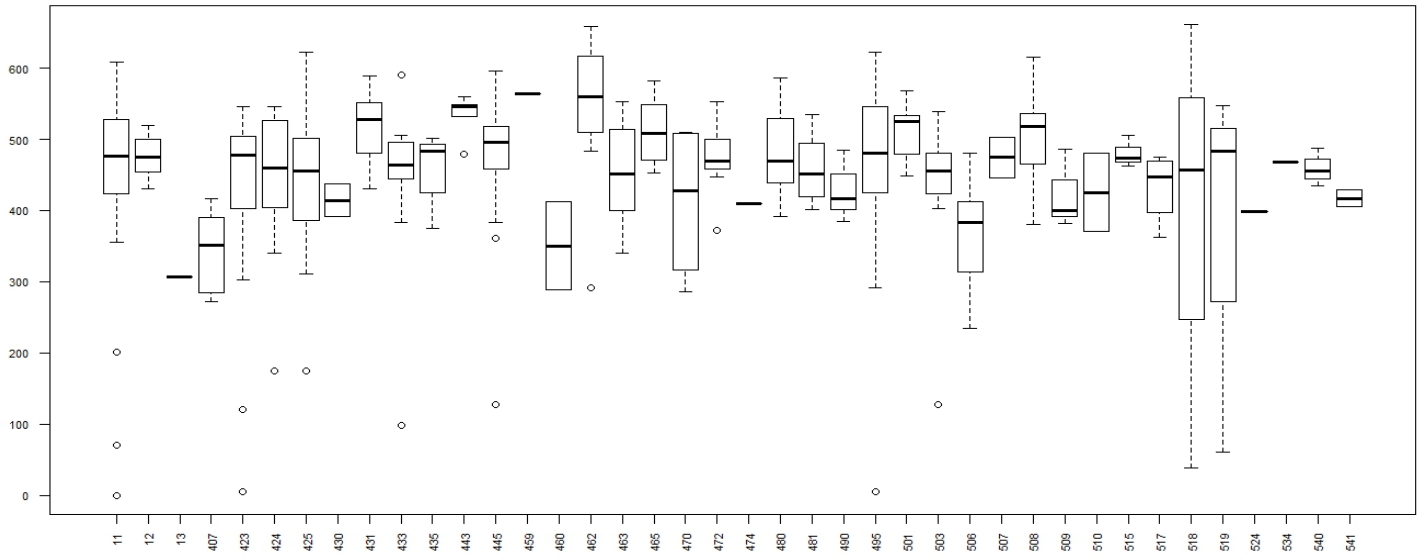
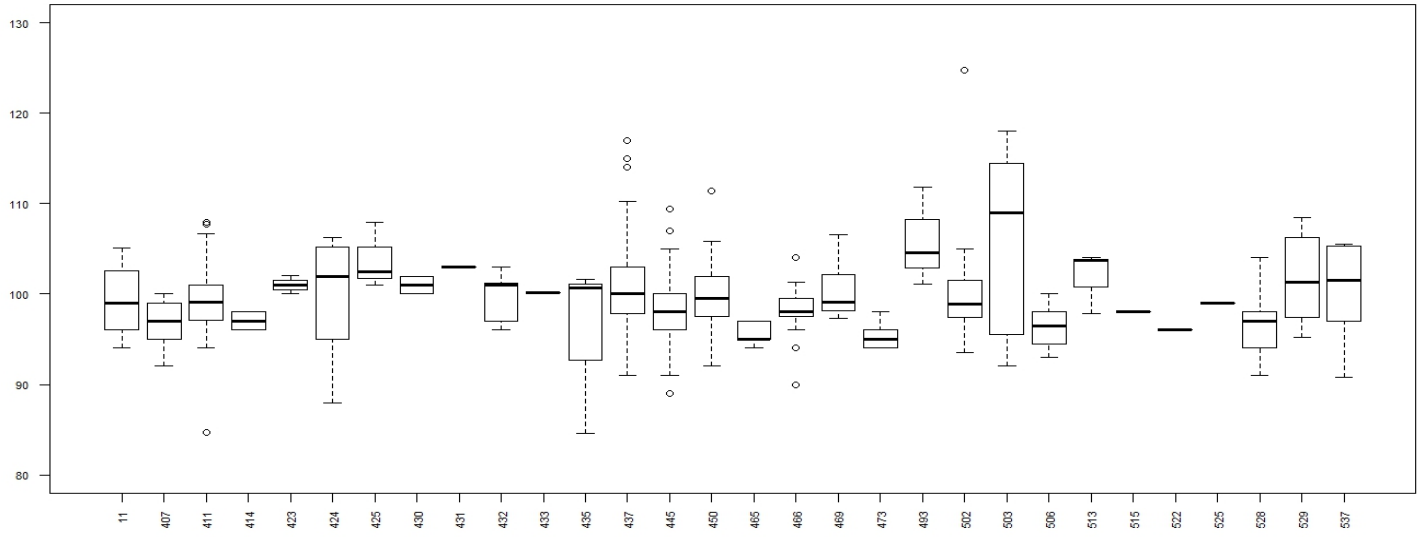


NIVEL I - CLORO: GRUPO DE EQUIPOS



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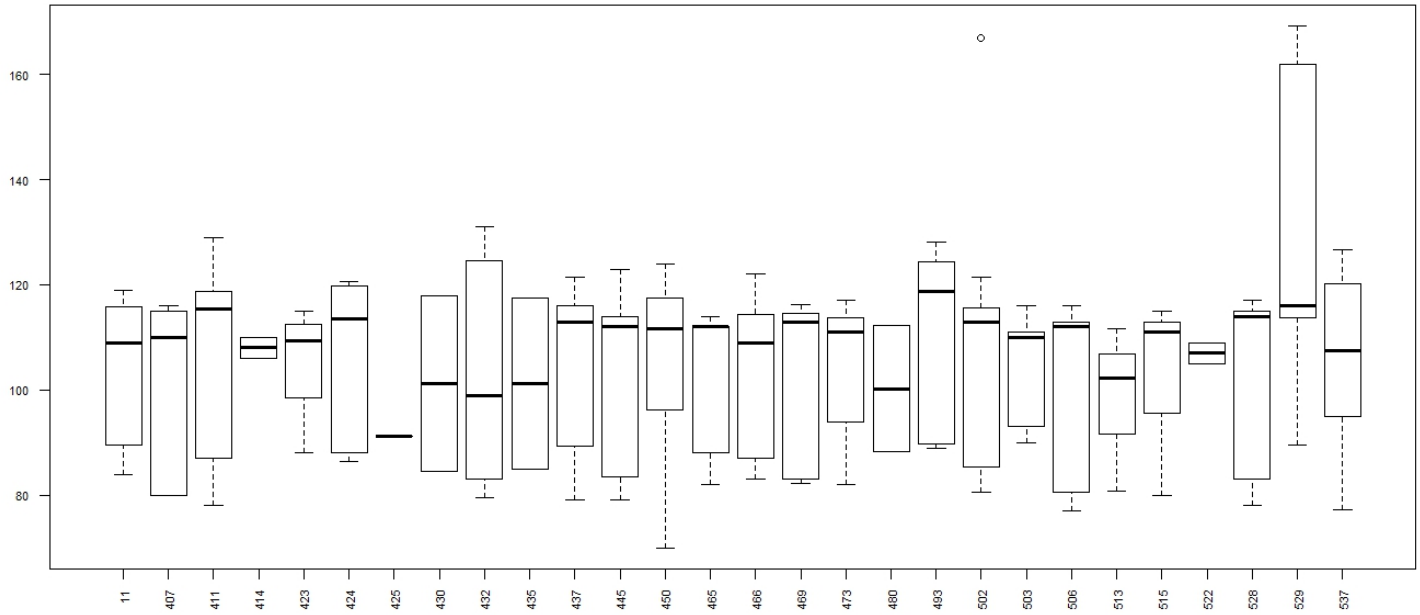
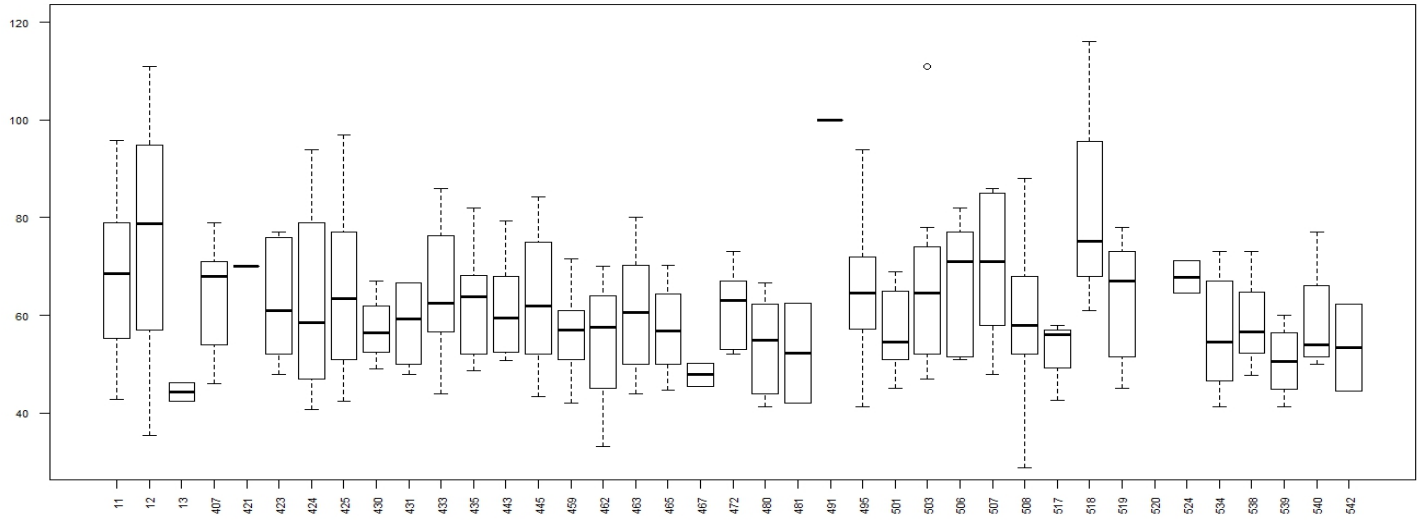


NIVEL I - COLESTEROL HDL: GRUPO DE EQUIPOS



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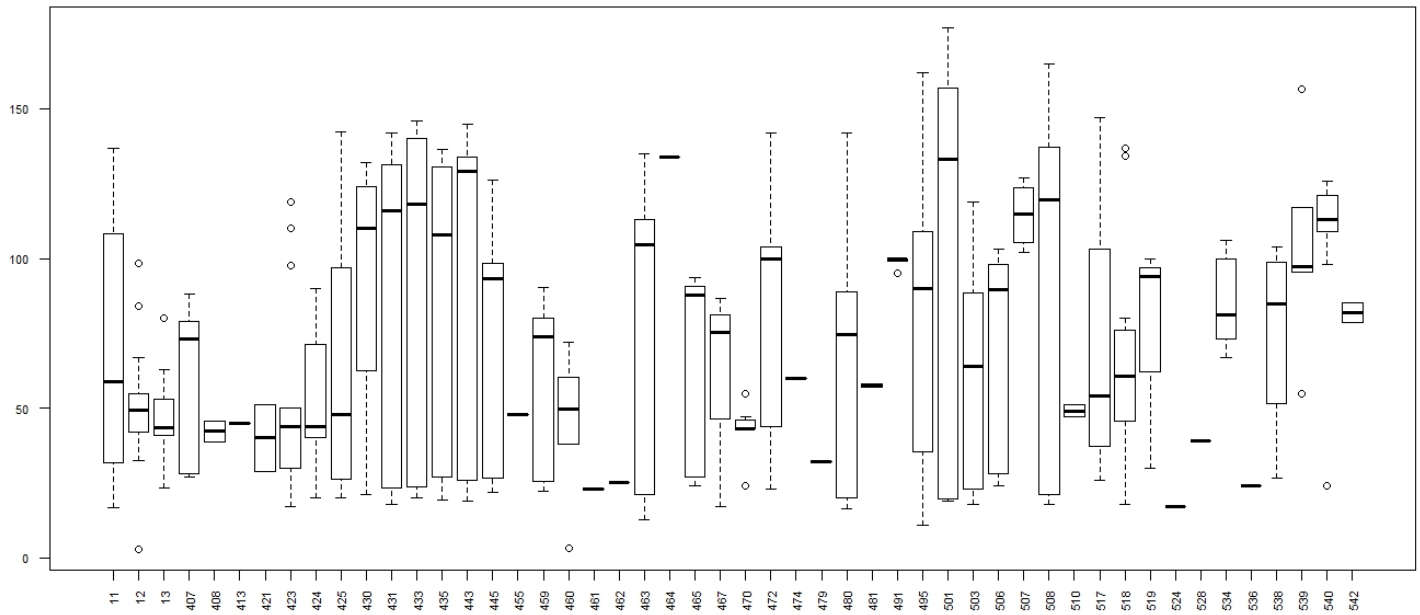

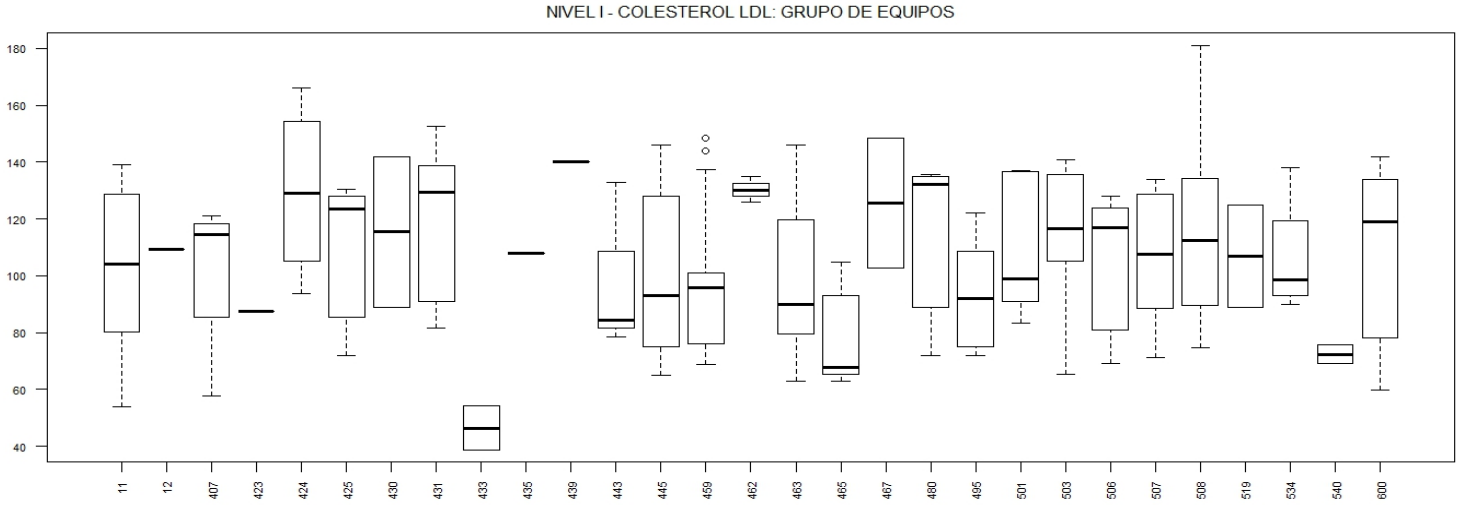
NIVEL I - COLESTEROL LDL: GRUPO DE EQUIPOS
180
160
140
120
100
80
60
40
11
12
407
423
424
425
430
431
433
435
439
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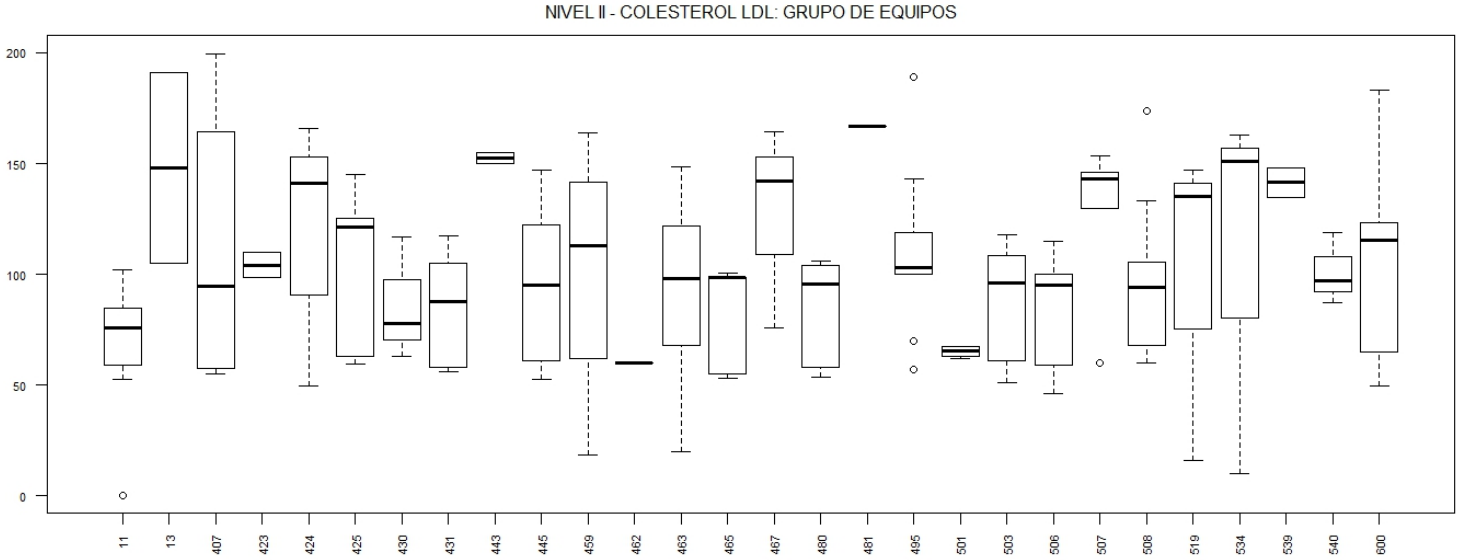
600


NIVEL II - COLESTEROL LDL: GRUPO DE EQUIPOS
200
150
100
50
0
11
13
407
423
424
425
430
431
443
445
459
462
463
465
467
480
481
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501
503
506
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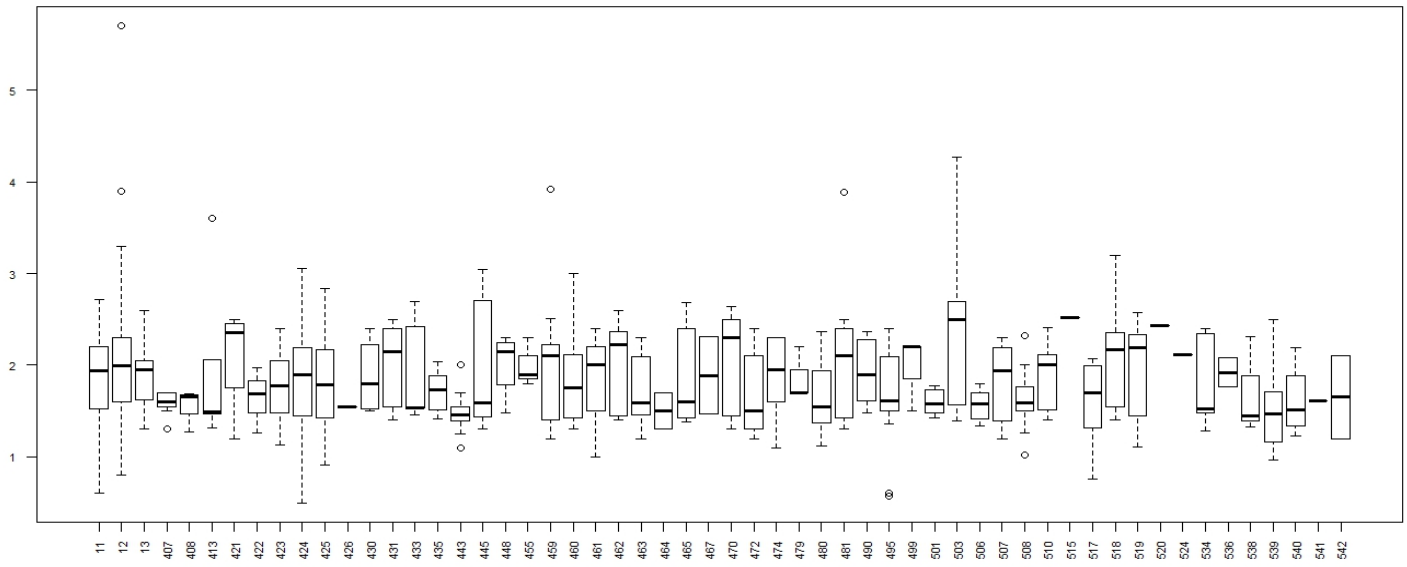
519
534
539
540
600

NIVEL I - CREATININA: GRUPO DE EQUIPOS



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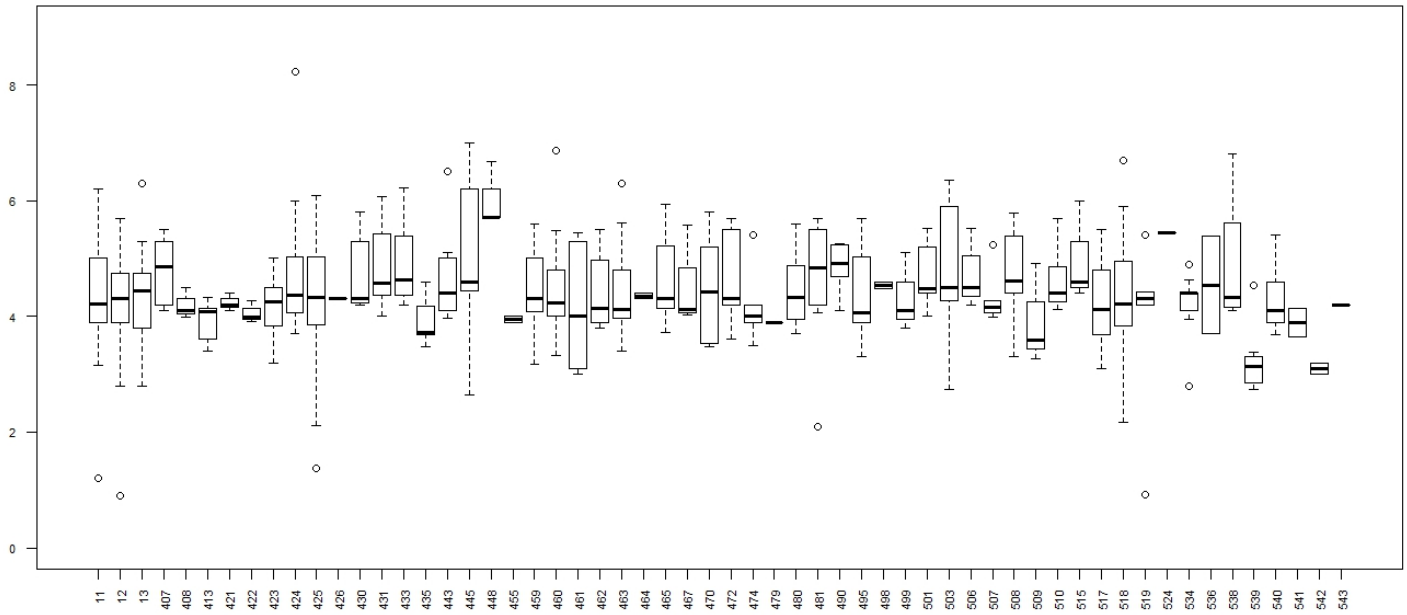
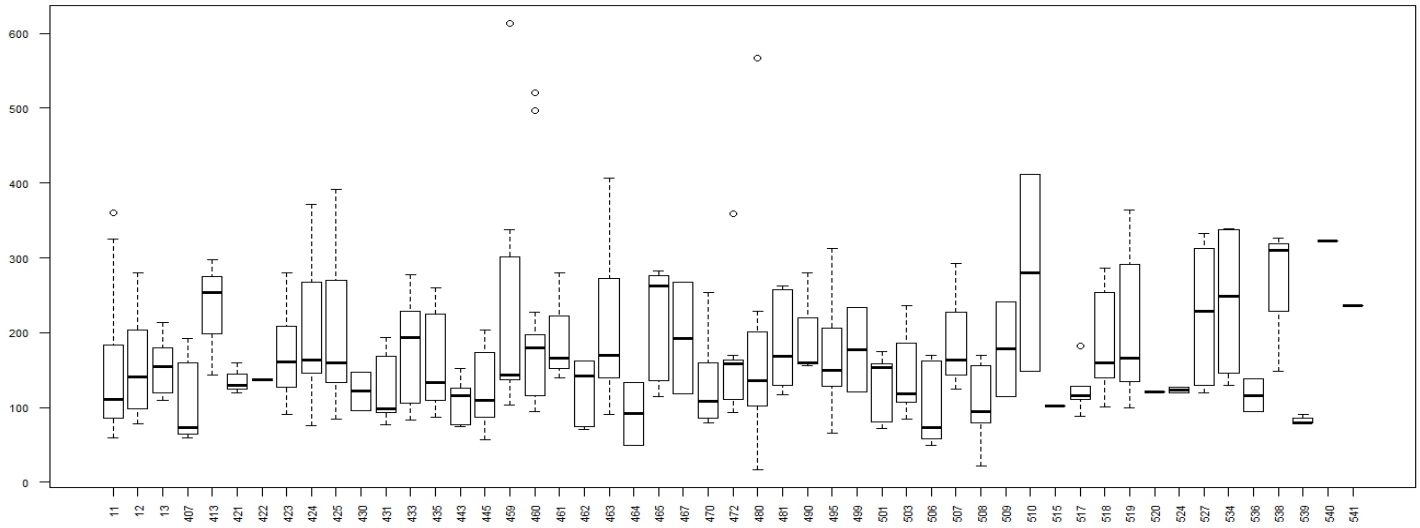
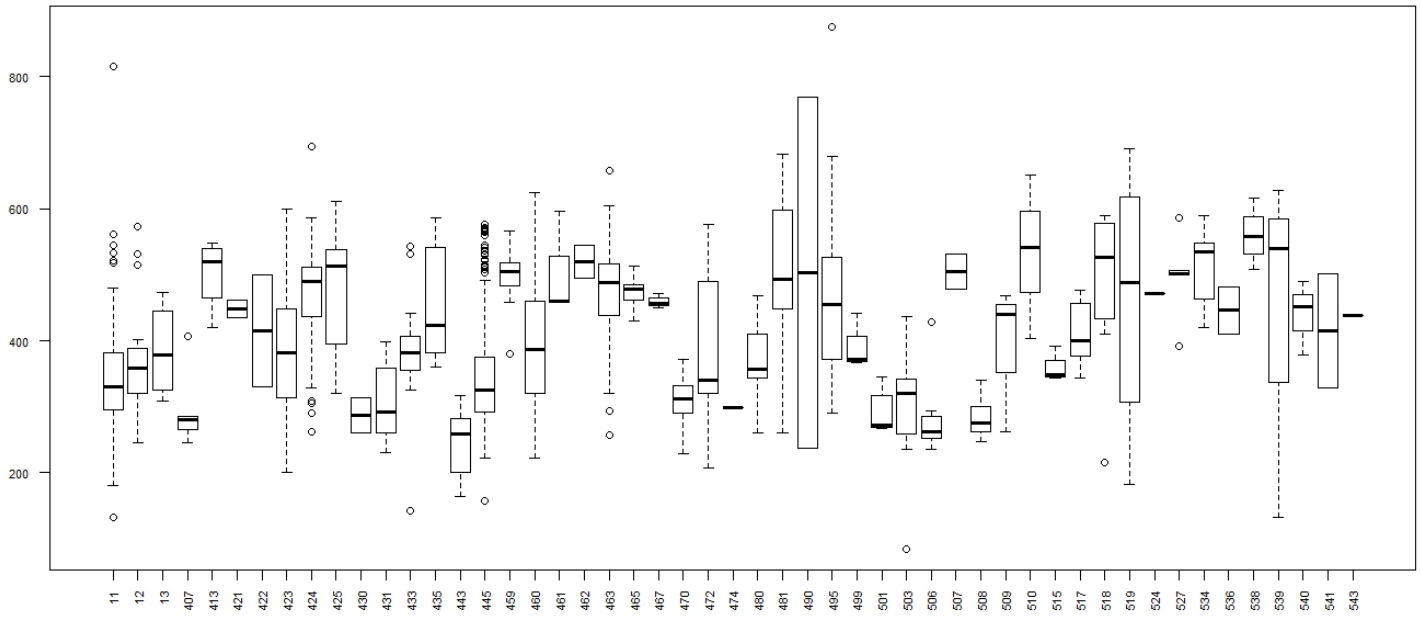


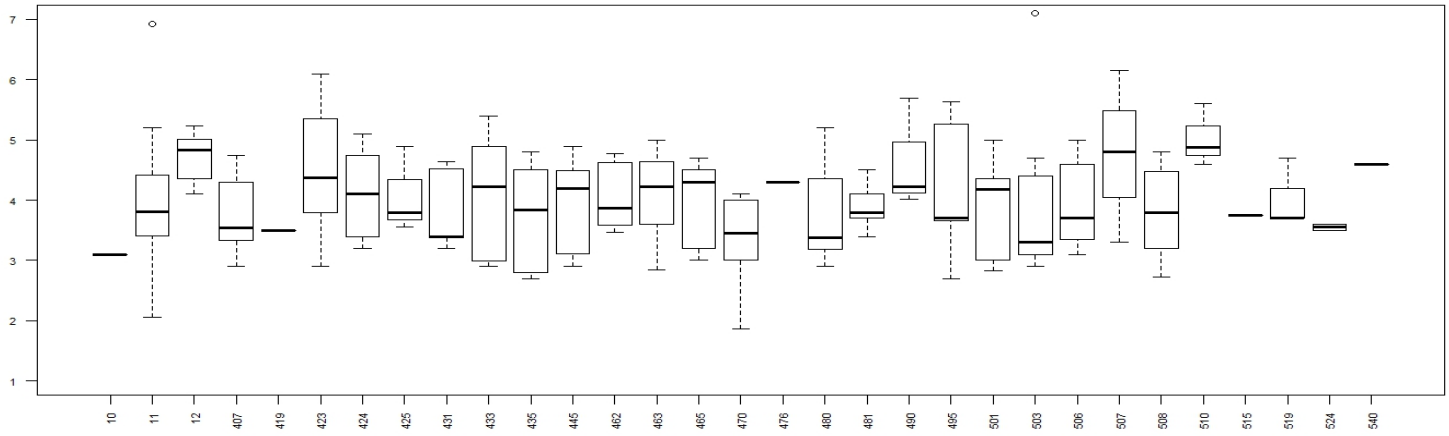
NIVEL I - FOSF. ALCALINA: GRUPO DE EQUIPOS



NIVEL II - FOSF. ALCALINA: GRUPO DE EQUIPOS



NIVEL I - FOSFORO: GRUPO DE EQUIPOS



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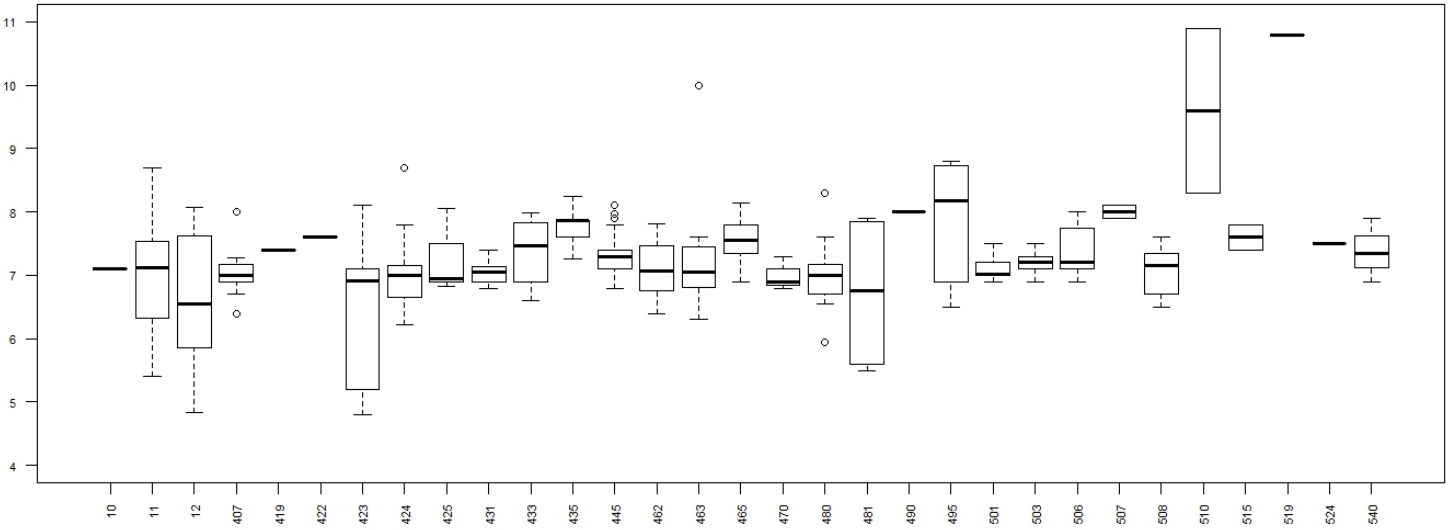
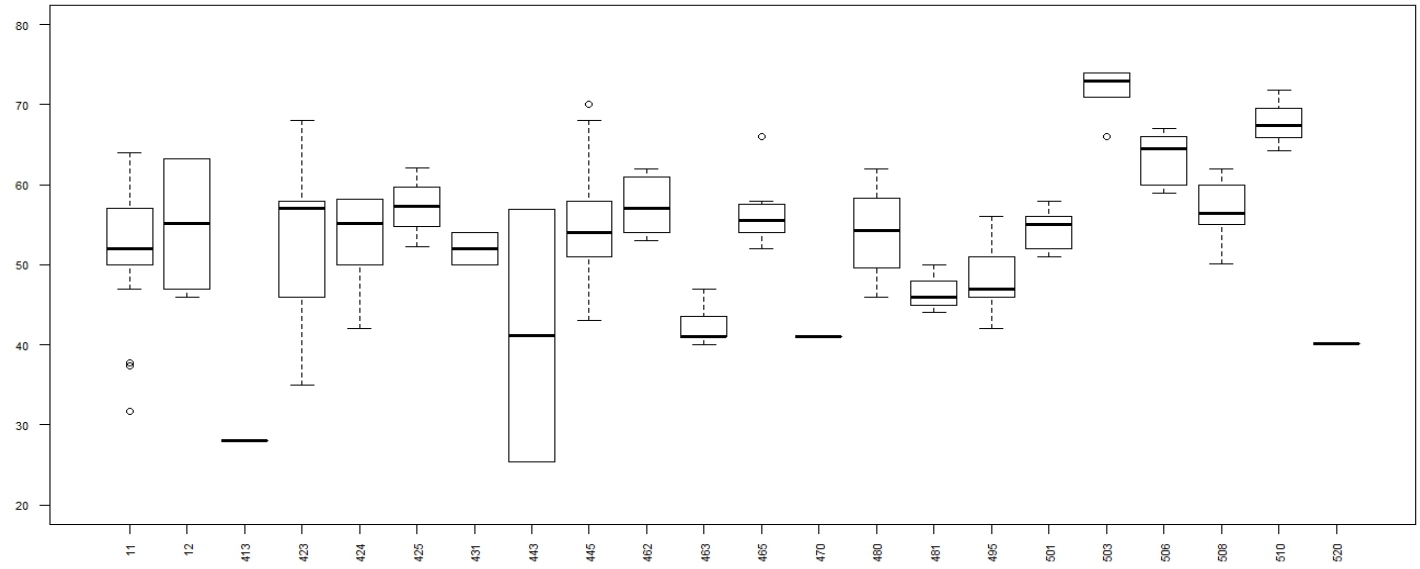
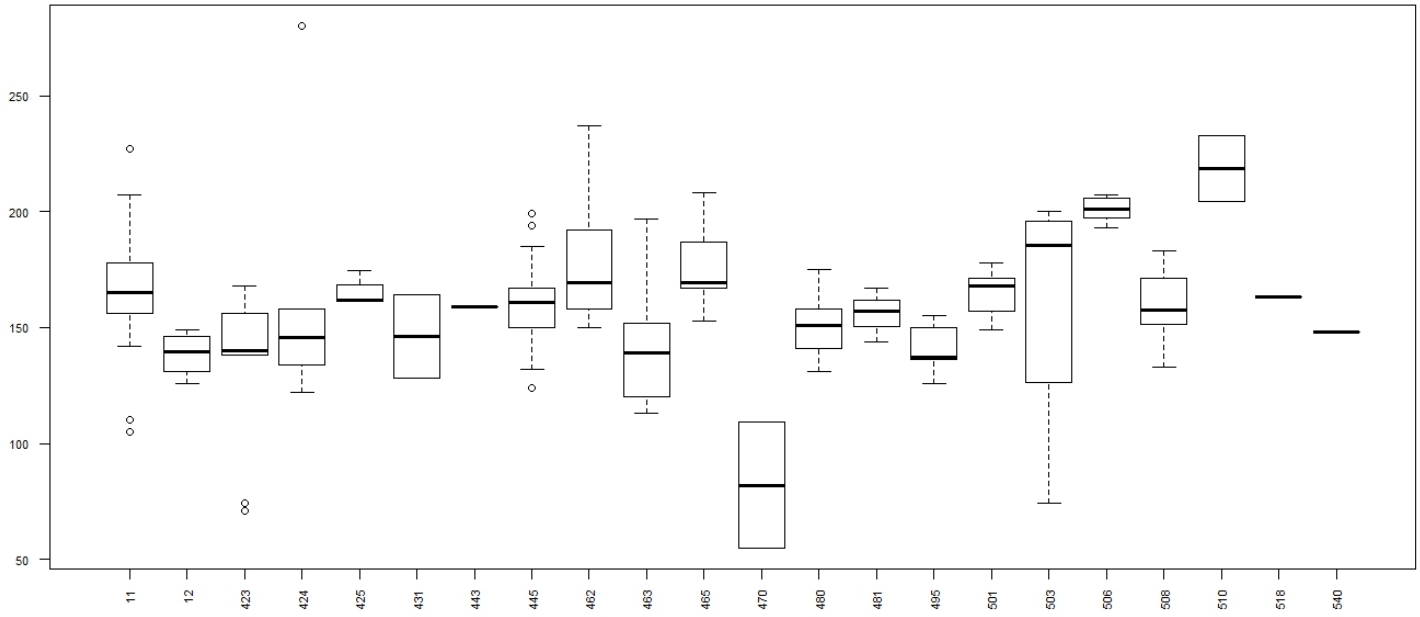


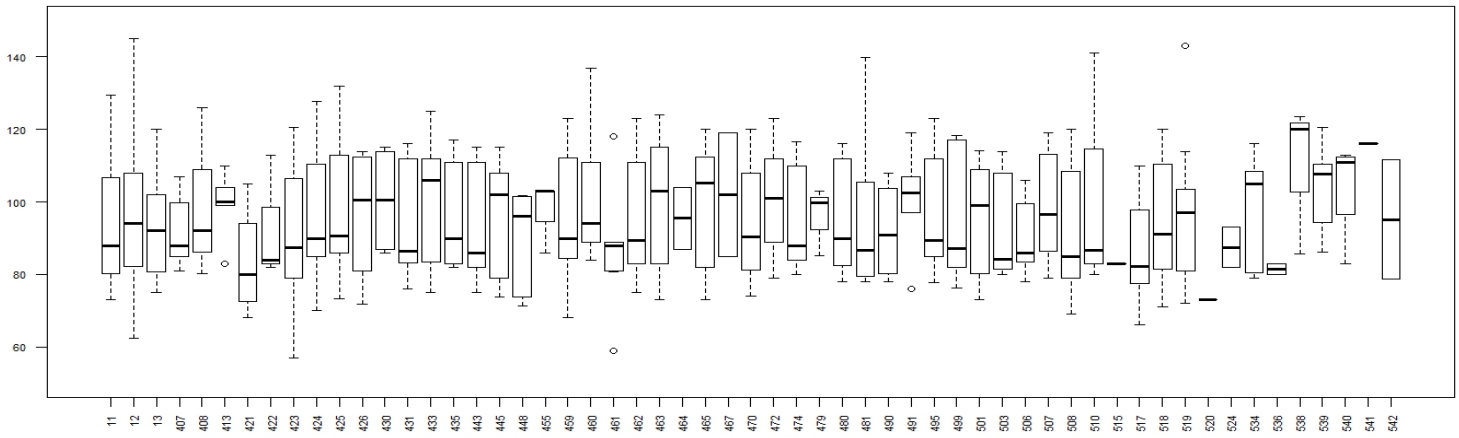
NIVEL I - GAMA GLUTAMIL TRANSFERASA: GRUPO DE EQUIPOS



NIVEL II - GAMA GLUTAMIL TRANSFERASA: GRUPO DE EQUIPOS



NIVEL I - GLUCOSA: GRUPO DE EQUIPOS



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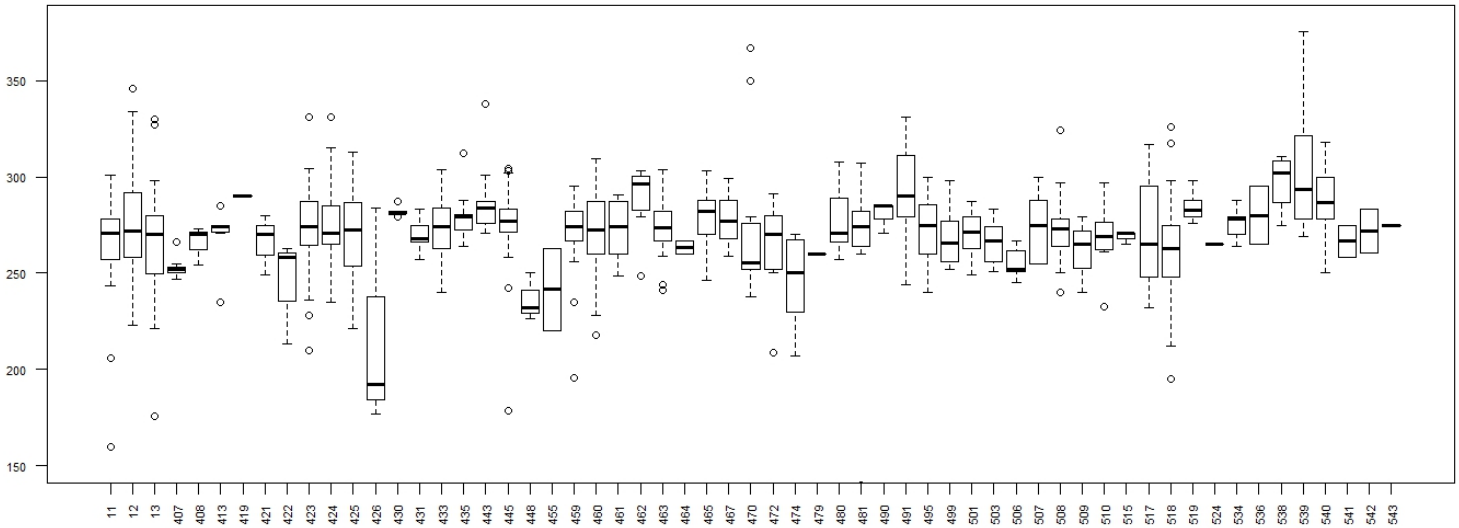
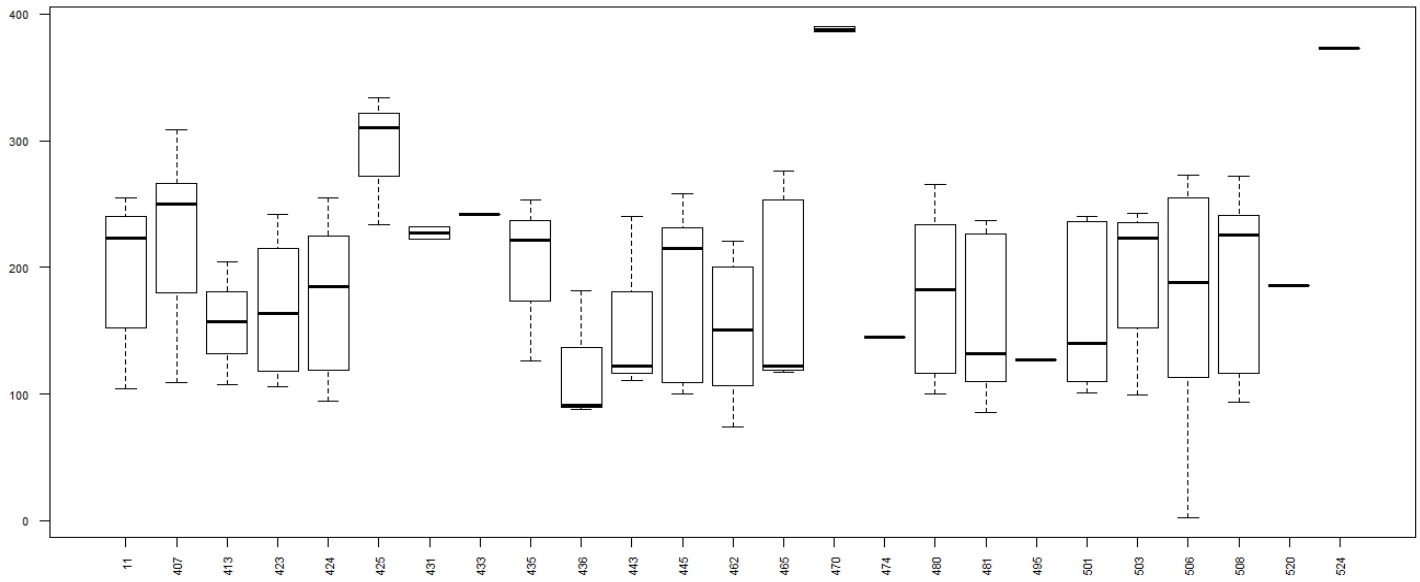
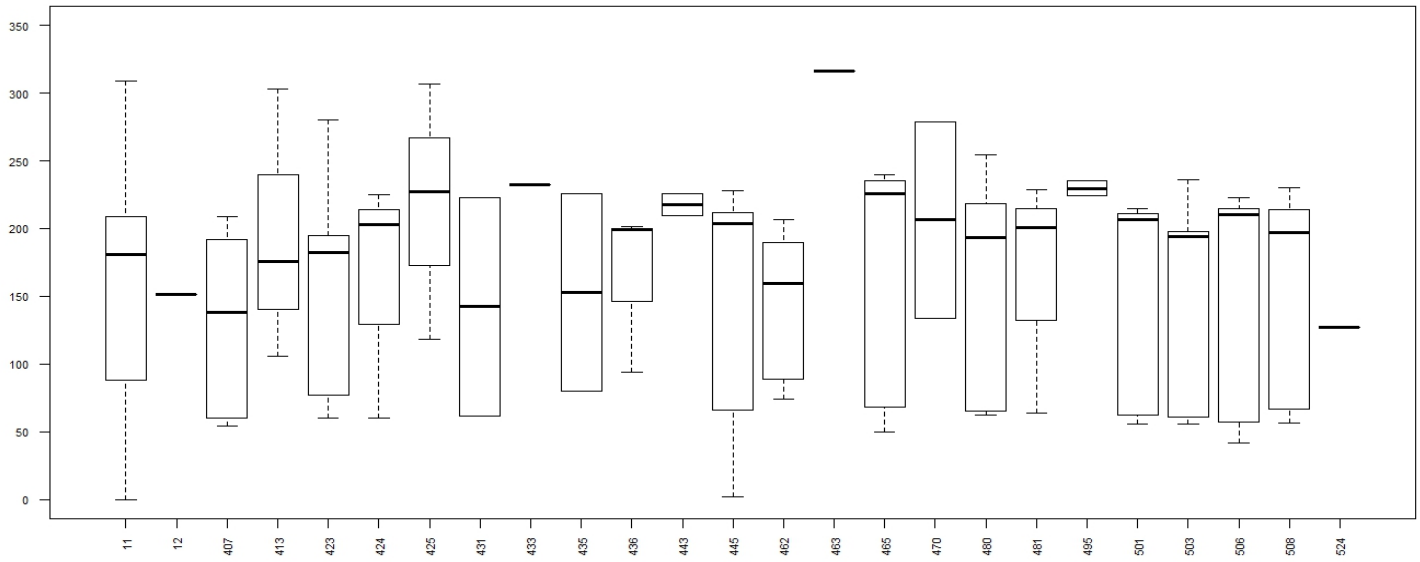


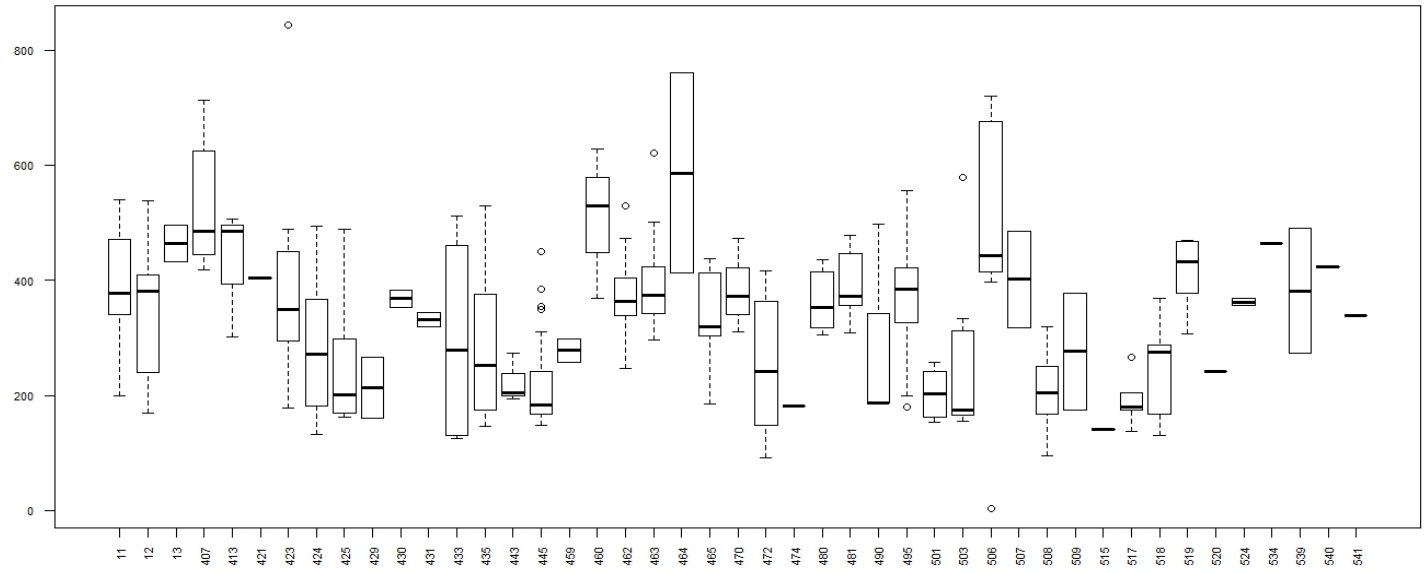
NIVEL I - HIERRO: GRUPO DE EQUIPOS



NIVEL II - HIERRO: GRUPO DE EQUIPOS



NIVEL I - LDH: GRUPO DE EQUIPOS



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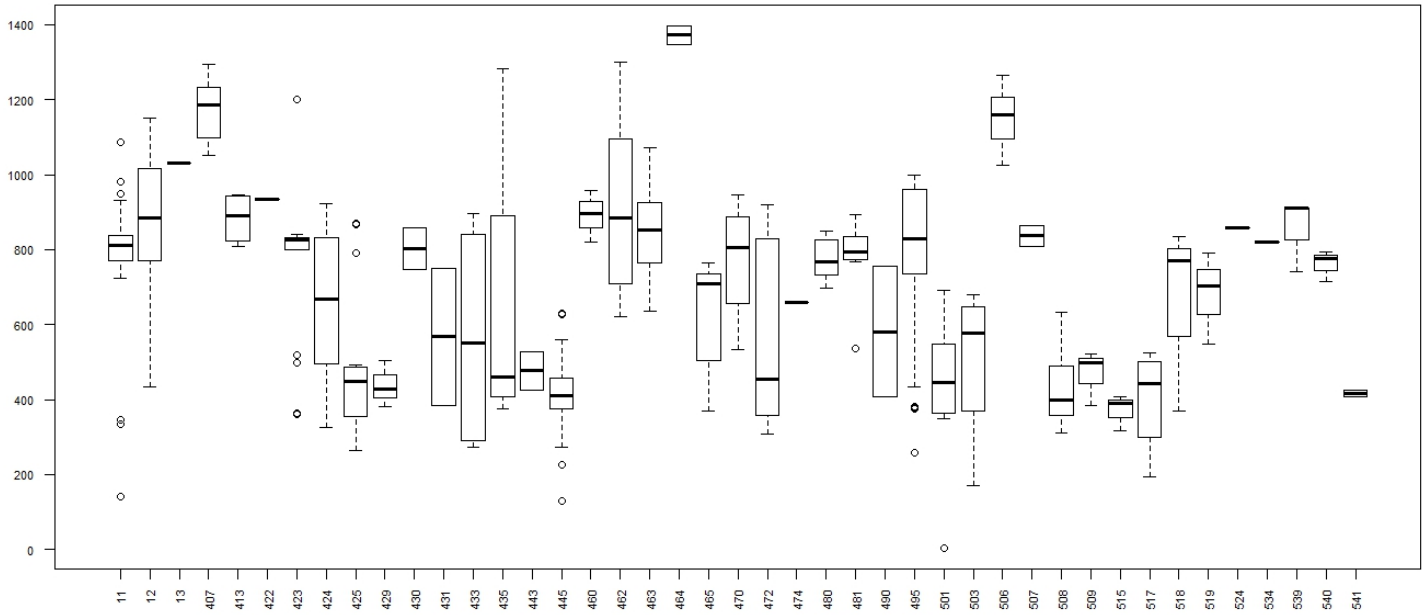
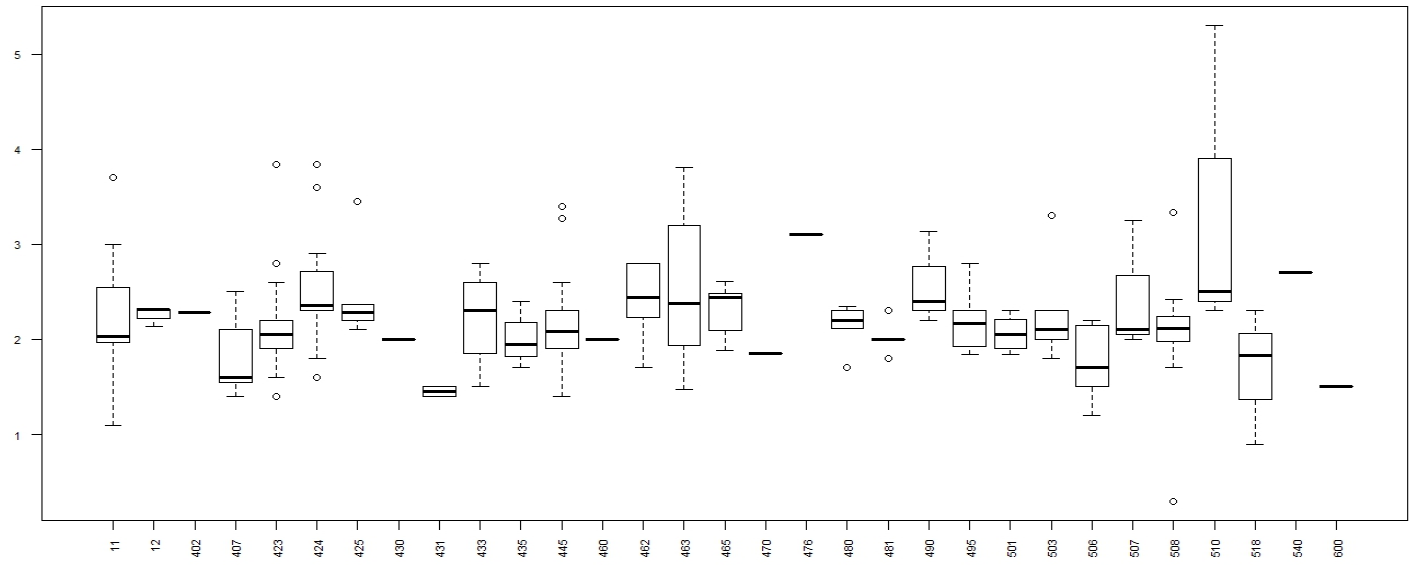
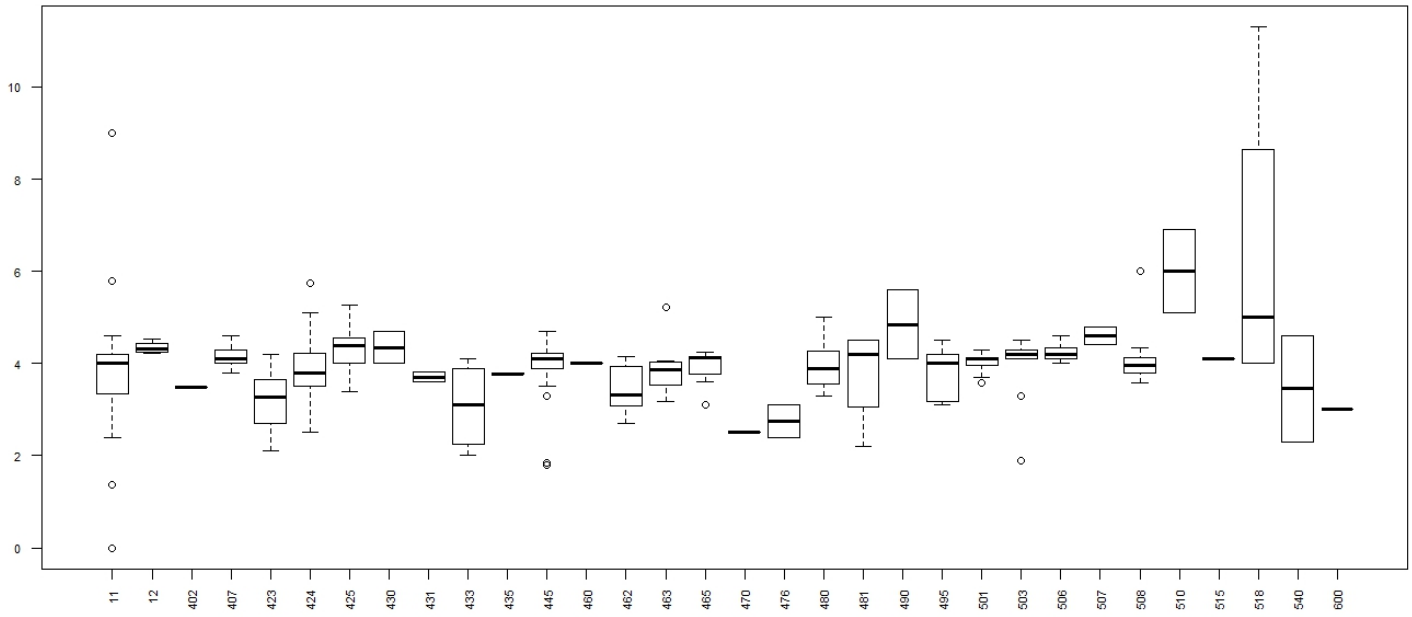


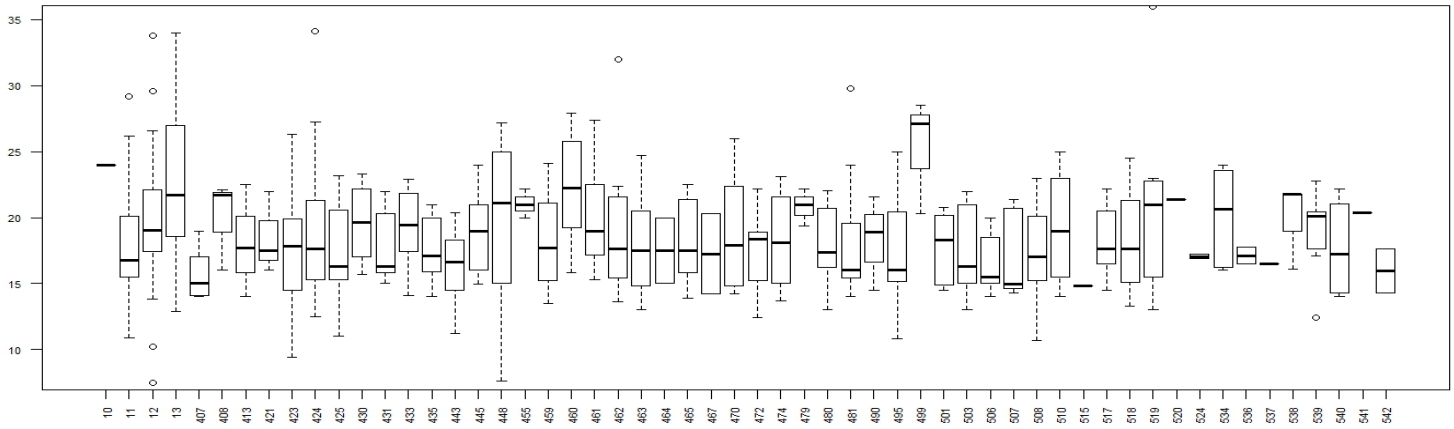
NIVEL I - MAGNESIO: GRUPO DE EQUIPOS



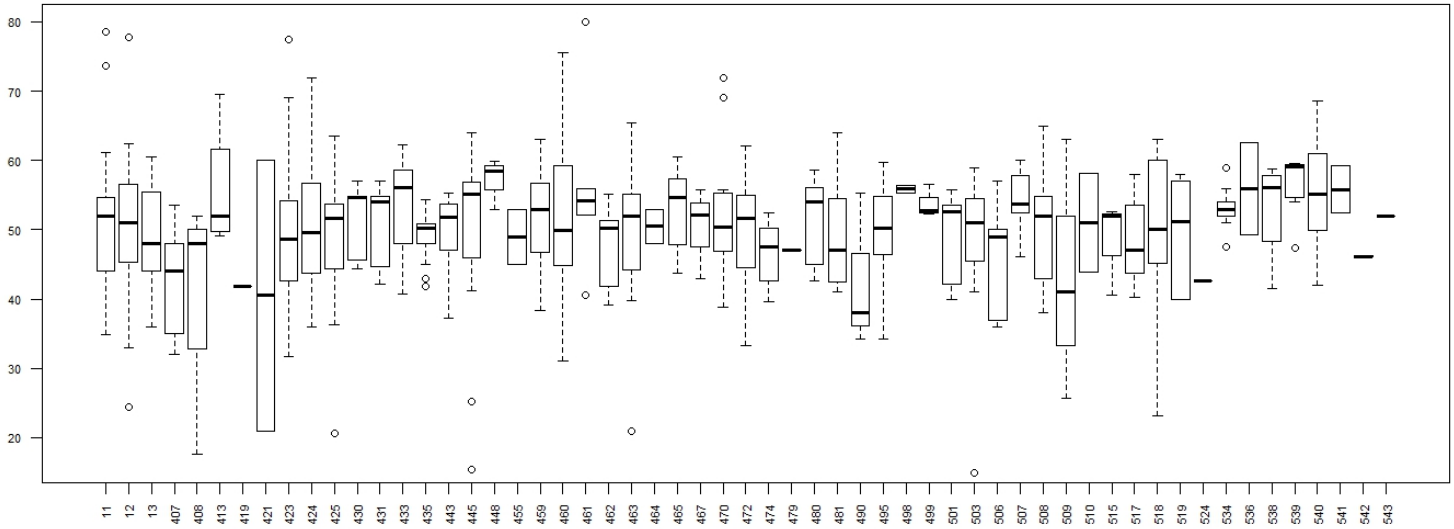
NIVEL II - MAGNESIO: GRUPO DE EQUIPOS



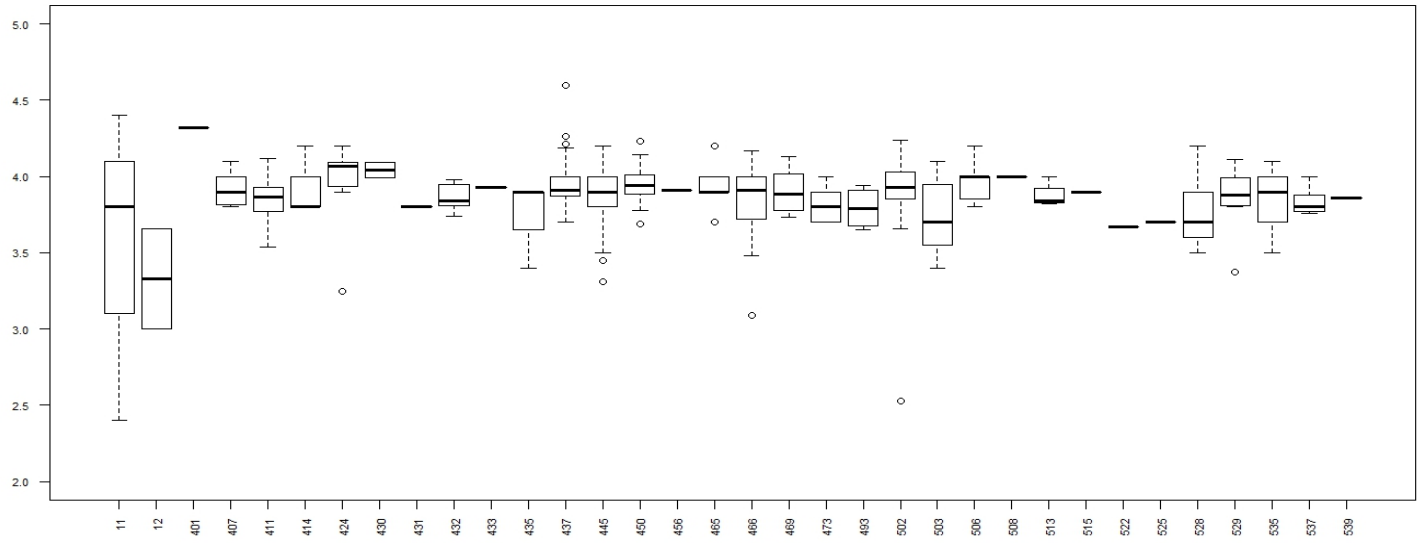
NIVEL I - NITROGENO UREICO: GRUPO DE EQUIPOS



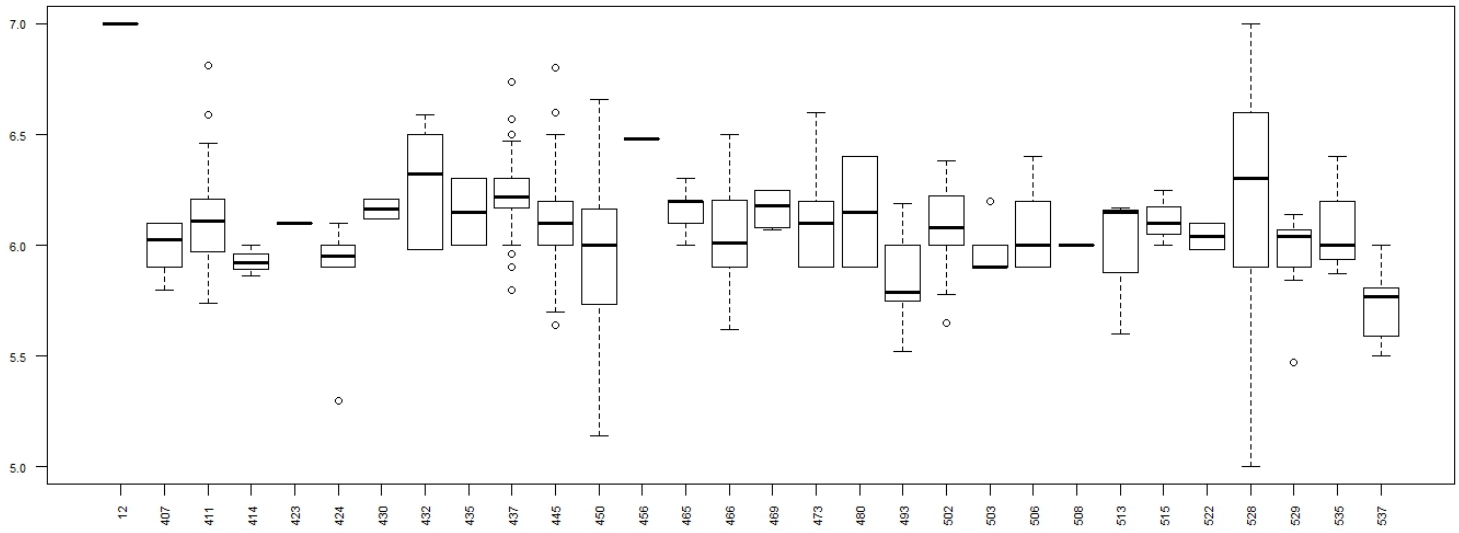
NIVEL II - NITROGENO UREICO: GRUPO DE EQUIPOS



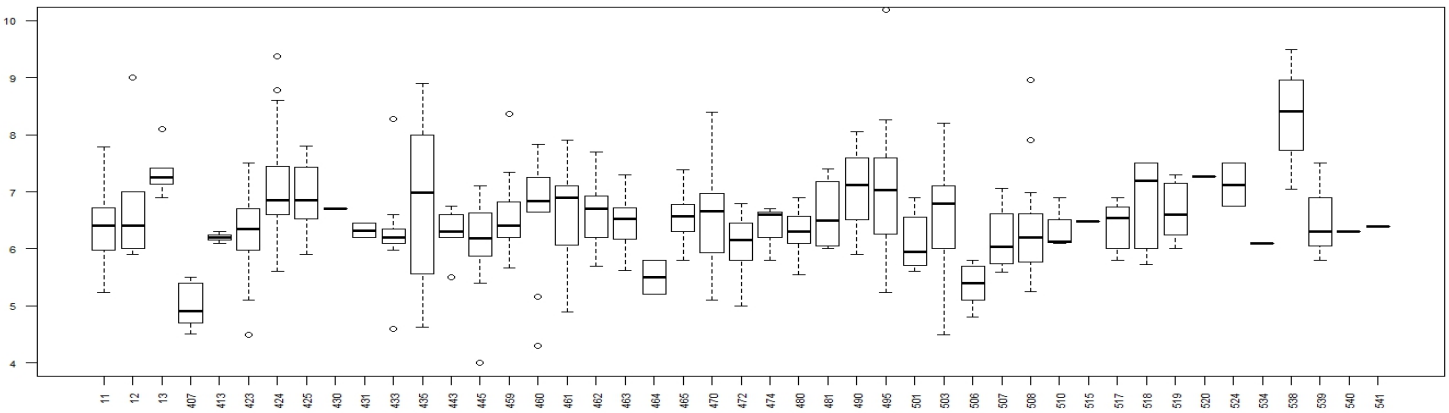
NIVEL I - POTASIO: GRUPO DE EQUIPOS



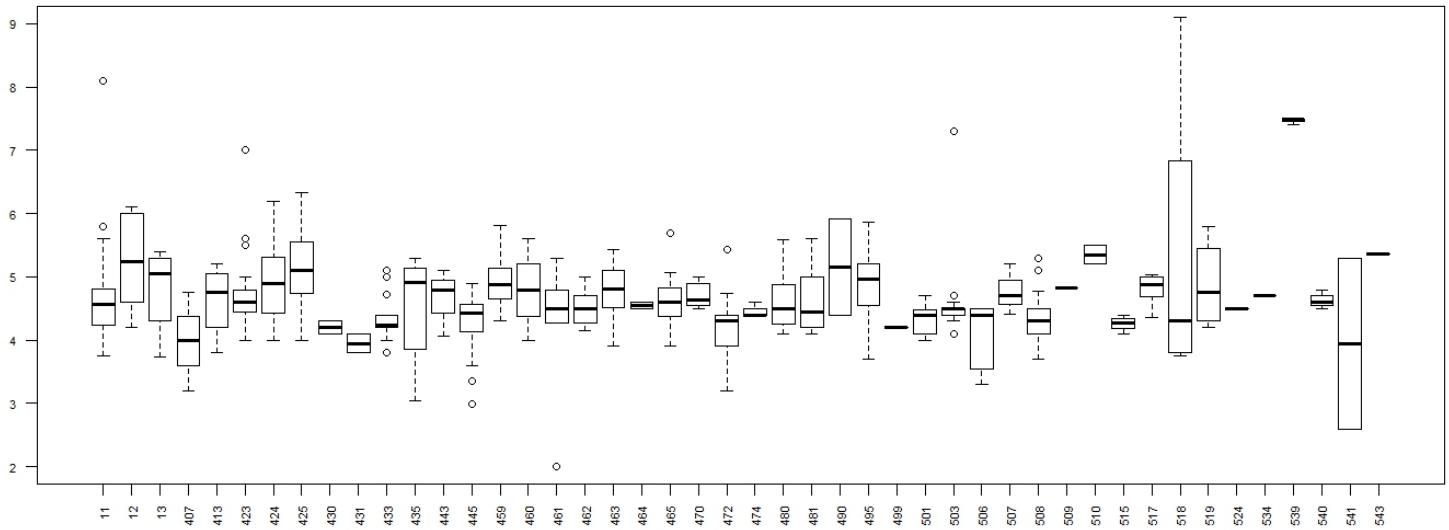
NIVEL II - POTASIO: GRUPO DE EQUIPOS



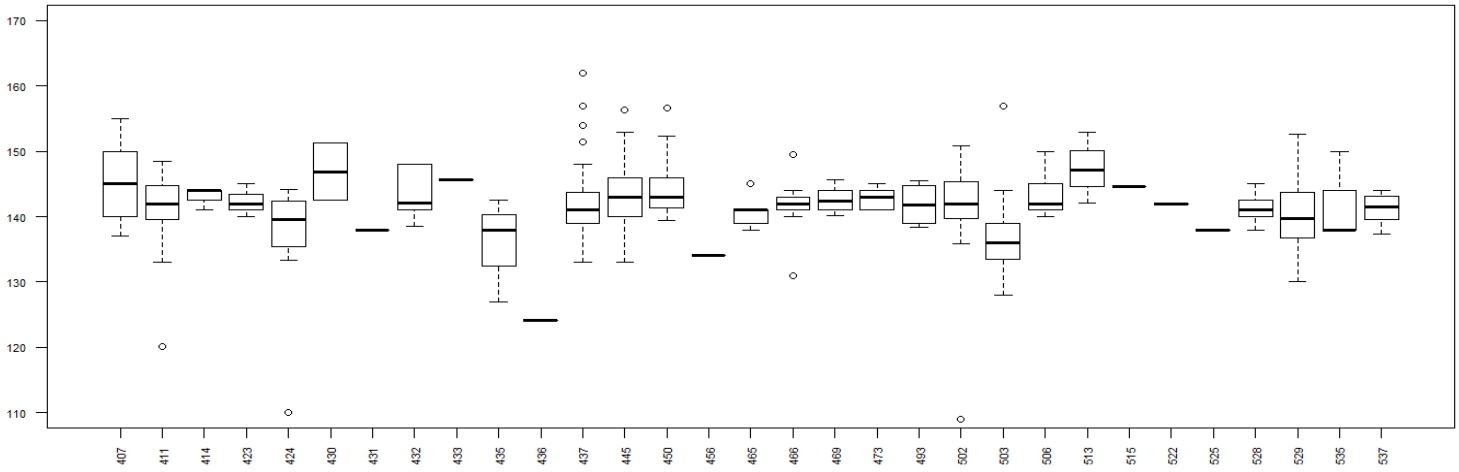
NIVEL I - PROTEINAS TOTALES: GRUPO DE EQUIPOS



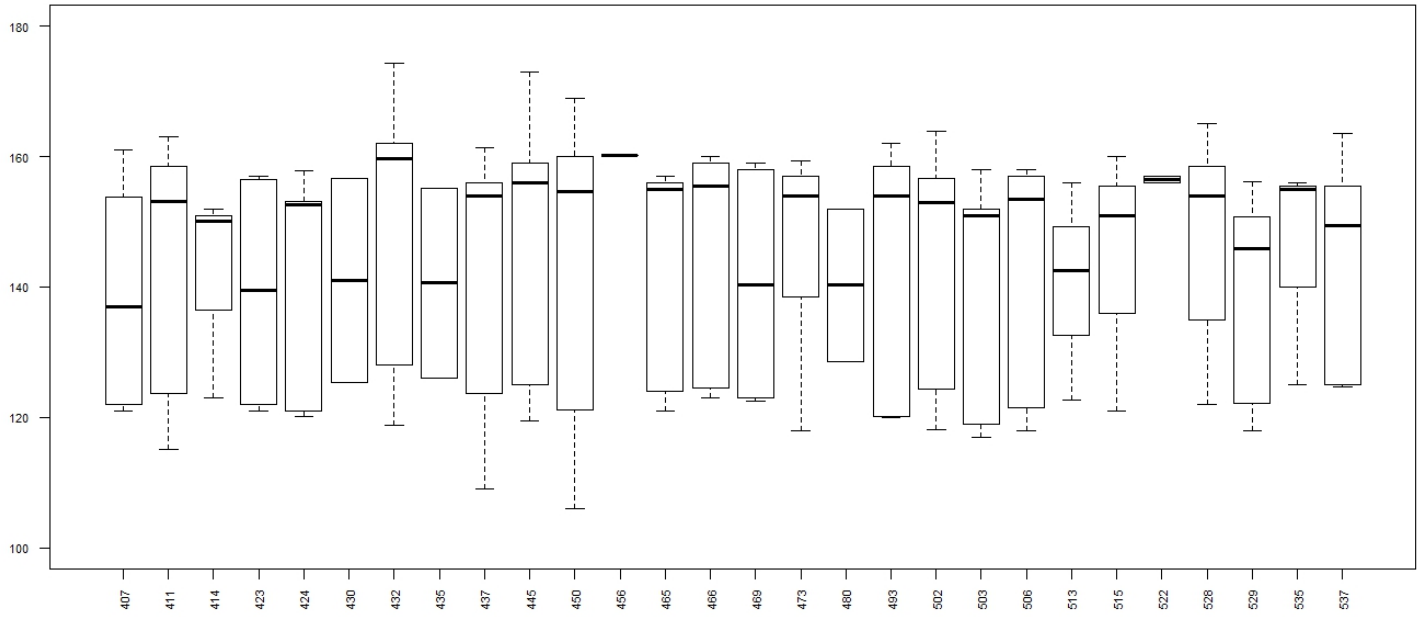
NIVEL II - PROTEINAS TOTALES: GRUPO DE EQUIPOS



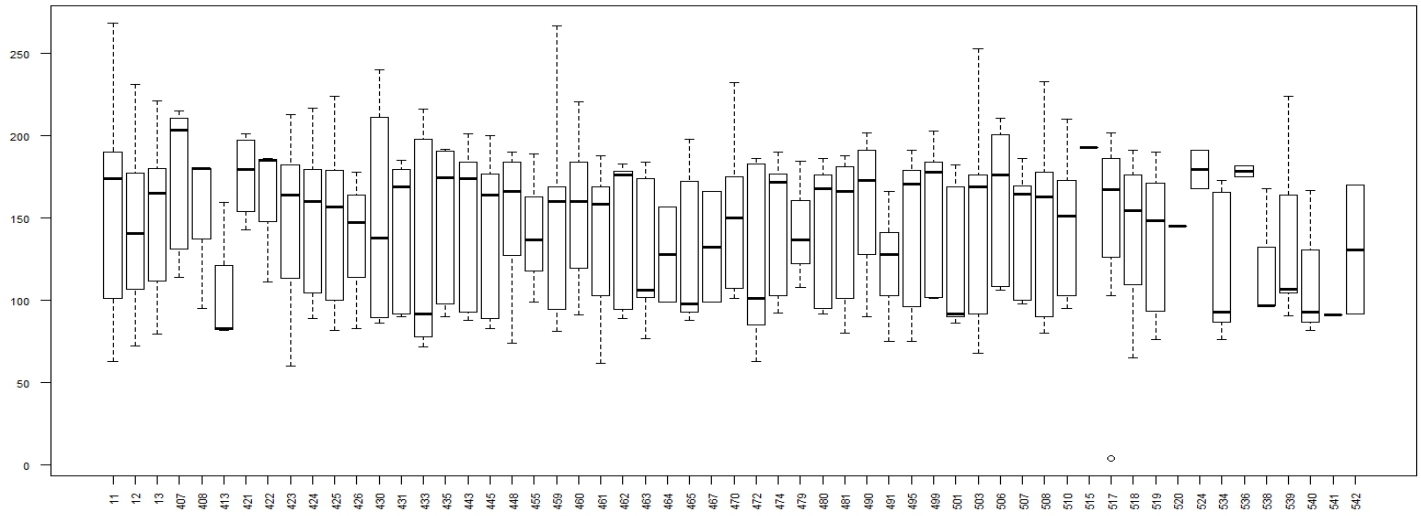
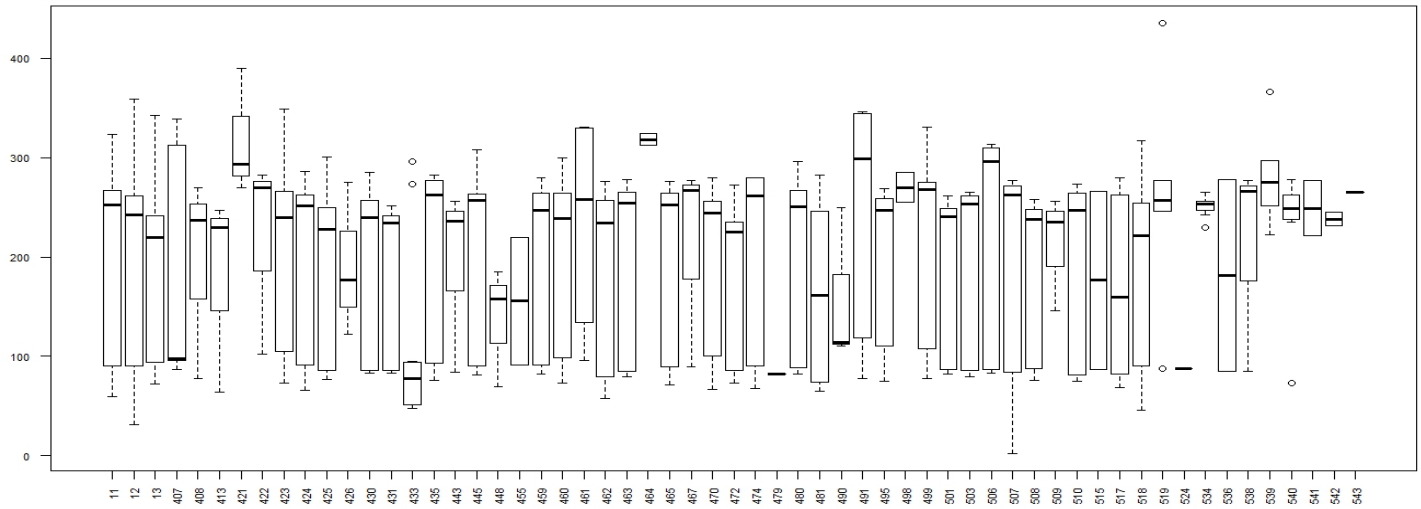
NIVEL I - SODIO: GRUPO DE EQUIPOS



NIVEL II - SODIO: GRUPO DE EQUIPOS



NIVEL I - TRIGLICERIDOS: GRUPO DE EQUIPOS



NIVEL II - TRIGLICERIDOS: GRUPO DE EQUIPOS