Servizos de Apoio á Investigación
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Ensayo solicitado:	Determinación de δ 15N y δ13C (combustión- espectrometría de masas de relaciones isotópicas)
Período de realización:	del 13/nov/2023 al 23/nov/2023
Usuario B-0813-BCCC:	ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGAI
Autorizado:	Guillermo López (Teresa Gimeno)
Dirección:	Basque Centre for Climate Change BC3 Edificio Sede, Planta 1, Parque UPV, Barrio Sarriena s/n Universidad Pais Vasco 48940 Leioa (BIZKAIA)
Fecha de entrada:	31/oct/2023
Núm. SAI:	2023/34531-2023/34736
Descripción:	Floema
Nombre de las muestras:	Véase tabla de resultados
Muestreo:	Realizado por el/la cliente/usuario/a. Los SAI se hacen responsables de los resultados obtenidos en los análisis de las muestras recibidas en sus laboratorios, sin mediar ninguna responsabilidad sobre la validez o representatividad de dicha muestra

Método de ensayo

La determinación de $\delta^{15}N$ y $\delta^{13}C$ se lleva a cabo mediante combustión en un analizador FlashEA1112 (ThermoFinnigan) acoplado mediante una interfase ConfloII a un espectrómetro de masas de relaciones isotópicas MAT253 (ThermoFinnigan). Las muestras se pesan en cápsulas de estaño mediante una balanza UMX-2 (Mettler Toledo).

Los resultados de $\delta^{15}N$ y $\delta^{13}C$ se expresan en ‰ relativos a Aire atmosférico y VPDB (Vienna Pee Dee Belemmite), respectivamente.

En cada secuencia analítica se emplean como patrones secundarios para $\delta^{15}N$: USGS 40 (-4.52‰), USGS41a (+47.55‰) (IAEA-N-1 (+0.4‰), IAEA-N-2 (+20.3‰) y USGS-25 (-30.4‰). Para $\delta^{13}C$ se emplean: USGS 40 (-26.39‰), USGS41a (+36.55‰) NBS 22 (-30.031‰) y USGS 24 (-16.049‰). Para evaluar la precisión (desviación estándar) se emplea como patrón acetanilida, resultando ± 0.15‰ (n=10).

Resultados

Notas:

En las muestras en las que no se dan datos de carbono, la señal obtenida saturó el detector.

Muestra	Nº SAI	$\delta\ ^{15}N_{AIR}$ (‰)	$\delta\ ^{13}C_{VPDV}$ (‰)
1_BPH_ORD_20230531	2023/34531	2.7	-26.6
2_BPH_ORD_20230530	2023/34532	-1.2	-
3_BPH_ORD_20230531	2023/34533	2.9	-25.3
4_BPH_ORD_20230601	2023/34534	1.8	-25.2
5_BPH_ORD_20230531	2023/34535	4.3	-25.4
6_BPH_ORD_20230601	2023/34536	1.7	-

Muestra	Nº SAI	δ $^{15}N_{AIR}$ (‰)	δ $^{13}C_{VPDV}$ (‰)
1_SUN_SPH_ORD_20230531	2023/34537	1.3	-
1_SH_SPH_ORD_20230531	2023/34538	0.8	-
1_SHL_SPH_ORD_20230531	2023/34539	1.1	-
2_SUN_SPH_ORD_20230530	2023/34540	-1.6	-
2_SH_SPH_ORD_20230530	2023/34541	-1.2	-
2_SHL_SPH_ORD_20230531	2023/34542	-1.3	-
3_SUN_SPH_ORD_20230530	2023/34543	-2.4	-
3_SH_SPH_ORD_20230531	2023/34544	0.1	-30.1
3_SHL_SPH_ORD_20230531	2023/34545	-1.7	-32.5
4_SUN_SPH_ORD_20230601	2023/34546	-2.8	-
4_SH_SPH_ORD_20230601	2023/34547	-1.9	-28.9
4_SHL_SPH_ORD_20230601	2023/34548	-1.0	-
5_SUN_SPH_ORD_20230531	2023/34549	-4.5	-
5_SH_SPH_ORD_20230531	2023/34550	-0.9	-
5_SHL_SPH_ORD_20230531	2023/34551	-0.5	-27.8
6_SUN_SPH_ORD_20230601	2023/34552	-4.1	-26.5
6_SH_SPH_ORD_20230601	2023/34553	-1.9	-26.2
6_SHL_SPH_ORD_20230601	2023/34554	-2.9	-26.7
1_BPH_ART_20230607	2023/34555	4.1	-26.7
2_BPH_ART_20230607	2023/34556	2.3	-27.9
3_BPH_ART_20230607	2023/34557	1.9	-26.8
4_BPH_ART_20230607	2023/34558	0.7	-27.2
5_BPH_ART_20230607	2023/34559	1.0	-26.8
1_SPH_ART_20230607	2023/34560	-1.9	-33.0
2_SPH_ART_20230607	2023/34561	-1.9	-31.3
3_SPH_ART_20230607	2023/34562	-2.5	-32.7
4_SPH_ART_20230607	2023/34563	-2.5	-31.7
5_SPH_ART_20230607	2023/34564	-4.4	-32.8
1_BPH_BER_20230608	2023/34565	0.6	-28.9
2_BPH_BER_20230608	2023/34566	0.8	-27.6
3_BPH_BER_20230608	2023/34567	0.9	-28.4
4_BPH_BER_20230608	2023/34568	4.4	-25.9
5_BPH_BER_20230608	2023/34569	3.0	-27.0
6_BPH_BER_20230608	2023/34570	0.4	-27.6
1_SPH_BER_20230608	2023/34571	-2.0	-32.4
2_SPH_BER_20230608	2023/34572	-2.2	-30.3

Muestra	Nº SAI	$\delta\ ^{15}N_{AIR}$ (‰)	$\delta\ ^{13}C_{VPDV}$ (‰)
3_SPH_BER_20230608	2023/34573	-3.0	-33.1
4_SPH_BER_20230608	2023/34574	-3.2	-31.7
5_SPH_BER_20230608	2023/34575	-1.0	-33.0
6_SPH_BER_20230608	2023/34576	-4.0	-32.7
1_BPH_ITU_20230606	2023/34577	1.5	-26.7
2_BPH_ITU_20230606	2023/34578	-1.3	-28.1
3_BPH_ITU_20230606	2023/34579	0.6	-27.6
4_BPH_ITU_20230606	2023/34580	1.5	-27.5
5_BPH_ITU_20230606	2023/34581	1.9	-26.7
6_BPH_ITU_20230606	2023/34582	-0.8	-28.2
1_SPH_ITU_20230606	2023/34583	-2.7	-32.1
2_SPH_ITU_20230606	2023/34584	-3.2	-32.7
3_SPH_ITU_20230606	2023/34585	-4.7	-33.3
4_SPH_ITU_20230606	2023/34586	-4.4	-33.0
5_SPH_ITU_20230606	2023/34587	-1.7	-31.4
6_SPH_ITU_20230606	2023/34588	-1.7	-31.8
1_BPH_DIU_20230615	2023/34589	1.3	-25.4
2_BPH_DIU_20230615	2023/34590	2.5	-26.8
3_BPH_DIU_20230615	2023/34591	2.2	-26.3
4_BPH_DIU_20230615	2023/34592	1.0	-25.6
5_BPH_DIU_20230615	2023/34593	1.7	-27.6
6_BPH_DIU_20230615	2023/34594	0.3	-27.2
1_SPH_DIU_20230615	2023/34595	2.4	-31.7
2_SPH_DIU_20230615	2023/34596	-0.0	-31.0
3_SPH_DIU_20230615	2023/34597	-3.9	-32.0
4_SPH_DIU_20230615	2023/34598	-2.6	-31.2
5_SPH_DIU_20230615	2023/34599	-0.3	-32.6
6_SPH_DIU_20230615	2023/34600	-2.5	-31.1
1_BPH_ORD_20230823	2023/34601	1.1	-27.4
2_BPH_ORD_20230822	2023/34602	-2.4	-27.3
3_BPH_ORD_20230823	2023/34603	-0.3	-28.2
5_BPH_ORD_20230824	2023/34604	0.5	-27.7
6_BPH_ORD_20230824	2023/34605	-0.5	-26.3
1_BPH_N_ORD_20230823	2023/34606	1.5	-26.6
2_BPH_N_ORD_20230822	2023/34607	-1.0	-26.5
3_BPH_E_ORD_20230823	2023/34608	-0.7	-28.0

Muestra	Nº SAI	δ $^{15}N_{AIR}$ (‰)	δ $^{13}C_{VPDV}$ (‰)
1_SUN_SPH_ORD_20230823	2023/34609	-1.3	-27.0
1_SH_SPH_ORD_20230823	2023/34610	-0.4	-27.7
1_SHL_SPH_ORD_20230823	2023/34611	-1.6	-28.1
2_SUN_SPH_ORD_20230822	2023/34612	-3.0	-27.4
2_SH_SPH_ORD_20230822	2023/34613	-3.8	-29.3
2_SHL_SPH_ORD_20230822	2023/34614	-3.1	-27.6
3_SUN_SPH_ORD_20230823	2023/34615	0.1	-27.1
3_SH_SPH_ORD_20230823	2023/34616	-1.1	-28.6
3_SHL_SPH_ORD_20230823	2023/34617	-1.9	-30.3
5_SUN_SPH_ORD_20230824	2023/34618	-2.3	-27.4
5_SH_SPH_ORD_20230824	2023/34619	-1.8	-27.6
5_SHL_SPH_ORD_20230824	2023/34620	-0.8	-29.7
6_SUN_SPH_ORD_20230824	2023/34621	-3.7	-27.8
6_SH_SPH_ORD_20230824	2023/34622	-2.7	-26.5
6_SHL_SPH_ORD_20230824	2023/34623	-1.0	-28.4
1_SUN_SPH_OE_ORD_20230823	2023/34624	0.2	-27.5
1_SUN_SPH_E_ORD_20230823	2023/34625	-2.6	-28.4
1_SHL_SPH_N_ORD_20230823	2023/34626	-1.4	-31.7
1_SHL_SPH_E_ORD_20230823	2023/34627	-0.0	-30.1
2_SUN_SPH_E_ORD_20230822	2023/34628	-1.9	-25.6
2_SH_SPH_S_ORD_20230822	2023/34629	-2.7	-28.7
2_SHL_SPH_O_ORD_20230822	2023/34630	-3.7	-29.4
2_SHL_SPH_E_ORD_20230822	2023/34631	-1.2	-28.2
3_SHL_SPH_S_ORD_20230823	2023/34632	-1.5	-31.8
3_SHL_SPH_O_ORD_20230823	2023/34633	-2.5	-31.9
1_BPH_ORD_20230904	2023/34634	0.9	-26.7
2_BPH_ORD_20230904	2023/34635	-0.8	-27.1
3_BPH_ORD_20230904	2023/34636	-1.4	-27.4
4_BPH_ORD_20230904	2023/34637	-0.0	-28.1
5_BPH_ORD_20230904	2023/34638	-0.7	-26.6
6_BPH_ORD_20230904	2023/34639	-0.4	-27.2
1_SPH_ORD_20230904	2023/34640	-1.0	-29.0
2_SPH_ORD_20230904	2023/34641	-1.7	-29.7
3_SPH_ORD_20230904	2023/34642	-1.6	-30.4
4_SPH_ORD_20230904	2023/34643	-0.9	-31.6
5_SPH_ORD_20230904	2023/34644	-2.0	-31.3

Muestra	Nº SAI	$\delta\ ^{15}N_{AIR}$ (‰)	$\delta\ ^{13}C_{VPDV}$ (‰)
6_SPH_ORD_20230904	2023/34645	-2.5	-30.3
1_BPH_ART_20230831	2023/34646	-1.8	-29.7
2_BPH_ART_20230831	2023/34647	-1.1	-29.4
3_BPH_ART_20230831	2023/34648	-0.9	-28.2
4_BPH_ART_20230831	2023/34649	-4.4	-28.6
6_BPH_ART_20230831	2023/34650	-1.4	-29.9
1_SPH_ART_20230831	2023/34651	-3.7	-33.6
2_SPH_ART_20230831	2023/34652	-2.2	-31.3
3_SPH_ART_20230831	2023/34653	-1.8	-32.4
4_SPH_ART_20230831	2023/34654	-2.5	-32.9
6_SPH_ART_20230831	2023/34655	-0.9	-32.6
1_BPH_BER_20230830	2023/34656	-2.0	-29.5
2_BPH_BER_20230830	2023/34657	-0.4	-28.4
3_BPH_BER_20230830	2023/34658	0.2	-29.8
4_BPH_BER_20230830	2023/34659	3.2	-27.3
5_BPH_BER_20230830	2023/34660	0.4	-29.9
6_BPH_BER_20230830	2023/34661	0.7	-28.9
1_SPH_BER_20230830	2023/34662	-1.9	-33.1
2_SPH_BER_20230830	2023/34663	-0.7	-31.2
3_SPH_BER_20230830	2023/34664	-1.8	-31.8
4_SPH_BER_20230830	2023/34665	0.4	-32.6
5_SPH_BER_20230830	2023/34666	-1.6	-34.3
6_SPH_BER_20230830	2023/34667	0.2	-32.6
1_BPH_ITU_20230829	2023/34668	-2.3	-29.2
2_BPH_ITU_20230829	2023/34669	0.3	-28.5
3_BPH_ITU_20230829	2023/34670	-2.2	-28.8
4_BPH_ITU_20230829	2023/34671	-0.8	-29.3
5_BPH_ITU_20230829	2023/34672	-0.2	-28.3
6_BPH_ITU_20230829	2023/34673	-0.0	-28.9
1_SPH_ITU_20230829	2023/34674	-3.3	-32.3
2_SPH_ITU_20230829	2023/34675	-4.4	-33.9
3_SPH_ITU_20230829	2023/34676	-4.4	-33.4
4_SPH_ITU_20230829	2023/34677	-0.6	-31.3
5_SPH_ITU_20230829	2023/34678	-2.7	-31.6
6_SPH_ITU_20230829	2023/34679	-3.2	-31.0
1_BPH_DIU_20230901	2023/34680	-0.6	-26.2

Muestra	Nº SAI	$\delta\ ^{15}N_{AIR}$ (‰)	$\delta\ ^{13}C_{VPDV}$ (‰)
2_BPH_DIU_20230901	2023/34681	0.1	-27.8
3_BPH_DIU_20230901	2023/34682	0.7	-26.8
4_BPH_DIU_20230901	2023/34683	-0.1	-27.5
5_BPH_DIU_20230901	2023/34684	2.6	-27.4
6_BPH_DIU_20230901	2023/34685	-0.4	-28.1
1_SPH_DIU_20230901	2023/34686	-0.7	-28.2
2_SPH_DIU_20230901	2023/34687	-2.8	-30.2
3_SPH_DIU_20230901	2023/34688	1.2	-29.9
4_SPH_DIU_20230901	2023/34689	0.1	-30.0
5_SPH_DIU_20230901	2023/34690	0.9	-30.9
6_SPH_DIU_20230901	2023/34691	0.2	-29.2
V1	2023/34692	-3.5	-26.8
V2	2023/34693	-3.4	-26.7
V3	2023/34694	-5.1	-26.6
V4	2023/34695	-5.2	-27.9
V5	2023/34696	-1.7	-28.0
V6	2023/34697	-5.4	-28.0
V7	2023/34698	-5.2	-28.5
V8	2023/34699	-5.2	-27.5
V9	2023/34700	-5.4	-30.4
V10	2023/34701	-4.5	-27.9
V11	2023/34702	-5.6	-28.0
V12	2023/34703	-4.4	-28.3
V13	2023/34704	-5.3	-29.0
V14	2023/34705	-4.5	-28.3
V15	2023/34706	-5.1	-27.9
V16	2023/34707	-4.4	-26.2
V17	2023/34708	-5.3	-25.5
V18	2023/34709	-4.7	-25.7
V19	2023/34710	-5.1	-27.5
V20	2023/34711	-5.5	-27.1
V21	2023/34712	-3.8	-27.6
V22	2023/34713	-3.4	-27.5
V23	2023/34714	-2.5	-27.5
V24	2023/34715	-3.2	-26.4
V25	2023/34716	-4.3	-27.3

Muestra	**Nº SAI**	**δ $^{15}N_{AIR}$ (‰)**	**δ $^{13}C_{VPDV}$ (‰)**
V26	2023/34717	-4.9	-27.0
V27	2023/34718	-4.1	-26.8
V28	2023/34719	-4.9	-26.8
V29	2023/34720	-4.9	-27.1
V30	2023/34721	-5.2	-27.5
1_BPH_MS_20230531	2023/34722	-3.0	-27.3
2_BPH_MS_20230531	2023/34723	-2.4	-28.0
3_BPH_MS_20230531	2023/34724	-3.0	-27.4
4_BPH_MS_20230531	2023/34725	-2.8	-28.0
5_BPH_MS_20230531	2023/34726	-2.7	-28.7
1_BPH_MS_20230720	2023/34727	0.0	-28.3
2_BPH_MS_20230720	2023/34728	-2.6	-27.1
3_BPH_MS_20230720	2023/34729	-2.1	-26.7
4_BPH_MS_20230720	2023/34730	-1.1	-27.5
5_BPH_MS_20230720	2023/34731	-2.1	-28.4
1_BPH_MS_20230926	2023/34732	-0.4	-28.1
2_BPH_MS_20230926	2023/34733	-1.7	-28.2
3_BPH_MS_20230926	2023/34734	-2.8	-27.7
4_BPH_MS_20230926	2023/34735	-3.7	-26.7
5_BPH_MS_20230926	2023/34736	-2.6	-28.5

Informe emitido por: Servicios de Apoyo a la Investigación de la Universidad de A Coruña

Responsable del informe

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