



*Consistent Accuracy . . .
... Delivered On-time*

Beta Analytic Inc.
4985 SW 74 Court
Miami, Florida 33155 USA
Tel: 305 667 5167
Fax: 305 663 0964
Beta@radiocarbon.com
www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

April 1, 2015

Mr. Graham Spurr
Museum of London
Archaeology Service, Mortimer Wheeler House
46 Eagle Wharf Road
London, N1 7ED
United Kingdom

RE: Radiocarbon Dating Results For Samples XSV/2/59/32, XSV/3/5/3, XSV/3/15/9, XSV/3/17/8, XSW/1A/3/2, XSW/1A/4/2, XSW/1B/16/7, XSX/2/29/11, XSX/2/40/13, XSX/2/44/12, XSY/1/6/11, XSY/1/6/12, XSY/1/7/12, XSY/3/57/27, XSY/3/68/30

Dear Mr. Spurr:

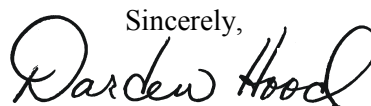
Enclosed are the radiocarbon dating results for 15 samples recently sent to us. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable. The Conventional Radiocarbon Ages have all been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

Note that two of the samples (XSX/2/29/11, XSX/2/44/12, Beta-407275,407277) do not have a Measured Radiocarbon Age and d13C reported. This is because the sample was too small to do a separate d13C and AMS analysis. The only available d13C available to calculate a Conventional Radiocarbon Age was that determined on a small aliquot of graphite. Although this ratio corrects to the appropriate Conventional Radiocarbon Age, it is not reported since it includes laboratory chemical and detector induced fractionation.

Reported results are accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analyses.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

Our invoice has been sent separately. Thank you for your prior efforts in arranging payment. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,

Digital signature on file



REPORT OF RADIOCARBON DATING ANALYSES

Mr. Graham Spurr

Report Date: 4/1/2015

Museum of London

Material Received: 3/19/2015

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 407268 SAMPLE : XSV/2/59/32 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1885 to 1730 (Cal BP 3835 to 3680) and Cal BC 1715 to 1690 (Cal BP 3665 to 3640)	3480 +/- 30 BP	-25.6 o/oo	3470 +/- 30 BP
Beta - 407269 SAMPLE : XSV/3/5/3 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1395 to 1215 (Cal BP 3345 to 3165)	3100 +/- 30 BP	-28.7 o/oo	3040 +/- 30 BP
Beta - 407270 SAMPLE : XSV/3/15/9 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 2435 to 2420 (Cal BP 4385 to 4370) and Cal BC 2405 to 2380 (Cal BP 4355 to 4330) and Cal BC 2350 to 2200 (Cal BP 4300 to 4150) and Cal BC 2160 to 2150 (Cal BP 4110 to 4100)	3890 +/- 30 BP	-28.6 o/oo	3830 +/- 30 BP
Beta - 407271 SAMPLE : XSV/3/17/8 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 2275 to 2250 (Cal BP 4225 to 4200) and Cal BC 2225 to 2220 (Cal BP 4175 to 4170) and Cal BC 2210 to 2120 (Cal BP 4160 to 4070) and Cal BC 2090 to 2040 (Cal BP 4040 to 3990)	3780 +/- 30 BP	-27.1 o/oo	3750 +/- 30 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



REPORT OF RADIOCARBON DATING ANALYSES

Mr. Graham Spurr

Report Date: 4/1/2015

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 407272 SAMPLE : XSW/1A/3/2 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 2005 to 2000 (Cal BP 3955 to 3950) and Cal BC 1975 to 1875 (Cal BP 3925 to 3825) and Cal BC 1840 to 1820 (Cal BP 3790 to 3770) and Cal BC 1795 to 1780 (Cal BP 3745 to 3730)	3610 +/- 30 BP	-27.8 o/oo	3560 +/- 30 BP
Beta - 407273 SAMPLE : XSW/1A/4/2 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1885 to 1735 (Cal BP 3835 to 3685) and Cal BC 1715 to 1695 (Cal BP 3665 to 3645)	3460 +/- 30 BP	-24.0 o/oo	3480 +/- 30 BP
Beta - 407274 SAMPLE : XSW/1B/16/7 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1900 to 1745 (Cal BP 3850 to 3695)	3510 +/- 30 BP	-25.7 o/oo	3500 +/- 30 BP
Beta - 407275 SAMPLE : XSX/2/29/11 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1495 to 1470 (Cal BP 3445 to 3420) and Cal BC 1460 to 1390 (Cal BP 3410 to 3340) and Cal BC 1335 to 1320 (Cal BP 3285 to 3270)	NA	NA	3150 +/- 30 BP
COMMENT: The original sample was too small to provide a d13C on the original material. However, a ratio including both natural and laboratory effects was measured during the 14C detection to calculate the true Conventional Radiocarbon Age.			

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



REPORT OF RADIOCARBON DATING ANALYSES

Mr. Graham Spurr

Report Date: 4/1/2015

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 407276 SAMPLE : XSX/2/40/13 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 3940 to 3855 (Cal BP 5890 to 5805) and Cal BC 3845 to 3835 (Cal BP 5795 to 5785) and Cal BC 3820 to 3710 (Cal BP 5770 to 5660)	5080 +/- 30 BP	-28.4 o/oo	5020 +/- 30 BP
Beta - 407277 SAMPLE : XSX/2/44/12 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 3365 to 3265 (Cal BP 5315 to 5215) and Cal BC 3240 to 3105 (Cal BP 5190 to 5055) COMMENT: The original sample was too small to provide a d13C on the original material. However, a ratio including both natural and laboratory effects was measured during the 14C detection to calculate the true Conventional Radiocarbon Age.	NA	NA	4540 +/- 30 BP
Beta - 407278 SAMPLE : XSY/1/6/11 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 2020 to 1990 (Cal BP 3970 to 3940) and Cal BC 1980 to 1880 (Cal BP 3930 to 3830)	3590 +/- 30 BP	-25.7 o/oo	3580 +/- 30 BP
Beta - 407279 SAMPLE : XSY/1/6/12 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1610 to 1450 (Cal BP 3560 to 3400)	3330 +/- 30 BP	-30.1 o/oo	3250 +/- 30 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.



REPORT OF RADIOCARBON DATING ANALYSES

Mr. Graham Spurr

Report Date: 4/1/2015

Sample Data	Measured Radiocarbon Age	d13C	Conventional Radiocarbon Age(*)
Beta - 407280 SAMPLE : XSY/1/7/12 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 3085 to 3065 (Cal BP 5035 to 5015) and Cal BC 3025 to 2905 (Cal BP 4975 to 4855)	4400 +/- 30 BP	-27.4 o/oo	4360 +/- 30 BP
Beta - 407281 SAMPLE : XSY/3/57/27 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 1205 to 1140 (Cal BP 3155 to 3090) and Cal BC 1130 to 1005 (Cal BP 3080 to 2955)	2940 +/- 30 BP	-27.4 o/oo	2900 +/- 30 BP
Beta - 407283 SAMPLE : XSY/3/68/30 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (plant material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 4315 to 4300 (Cal BP 6265 to 6250) and Cal BC 4260 to 4050 (Cal BP 6210 to 6000)	5390 +/- 30 BP	-28.2 o/oo	5340 +/- 30 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -25.6 o/oo : lab. mult = 1)

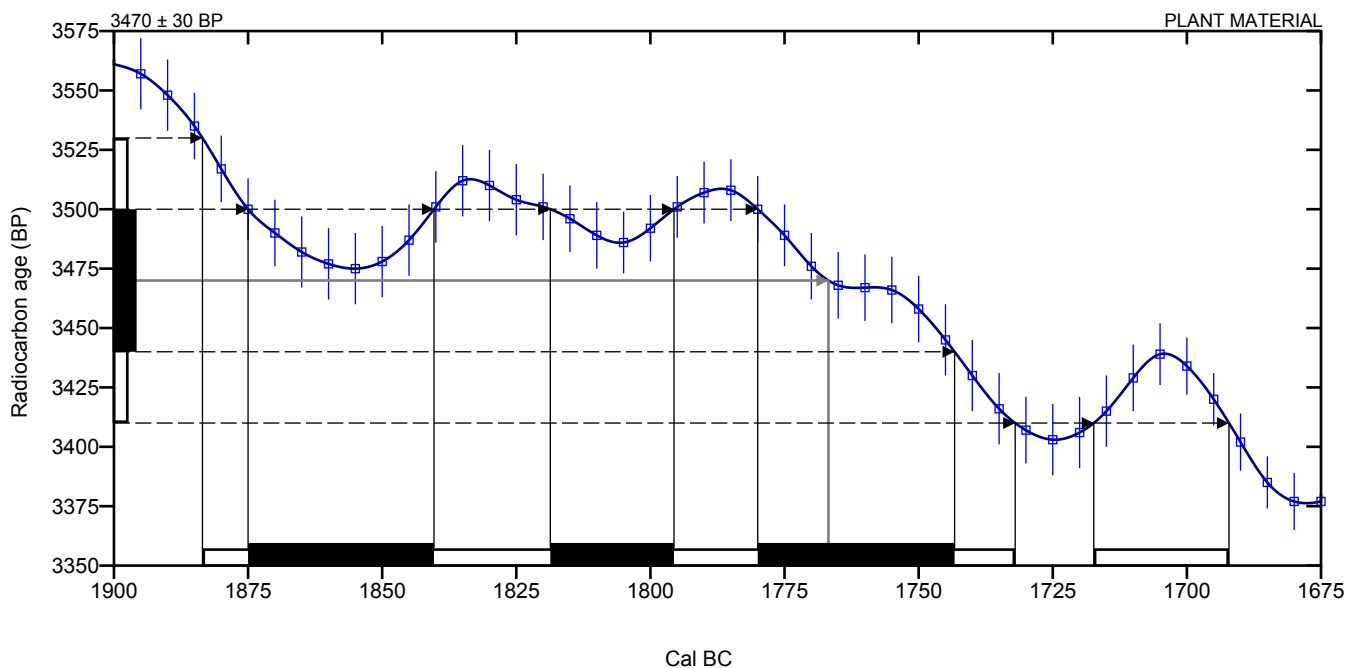
Laboratory number **Beta-407268**

Conventional radiocarbon age **3470 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1885 to 1730 (Cal BP 3835 to 3680)**
Cal BC 1715 to 1690 (Cal BP 3665 to 3640)

Intercept of radiocarbon age with calibration curve Cal BC 1765 (Cal BP 3715)

Calibrated Result (68% Probability) Cal BC 1875 to 1840 (Cal BP 3825 to 3790)
Cal BC 1820 to 1795 (Cal BP 3770 to 3745)
Cal BC 1780 to 1745 (Cal BP 3730 to 3695)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -28.7 o/oo : lab. mult = 1)

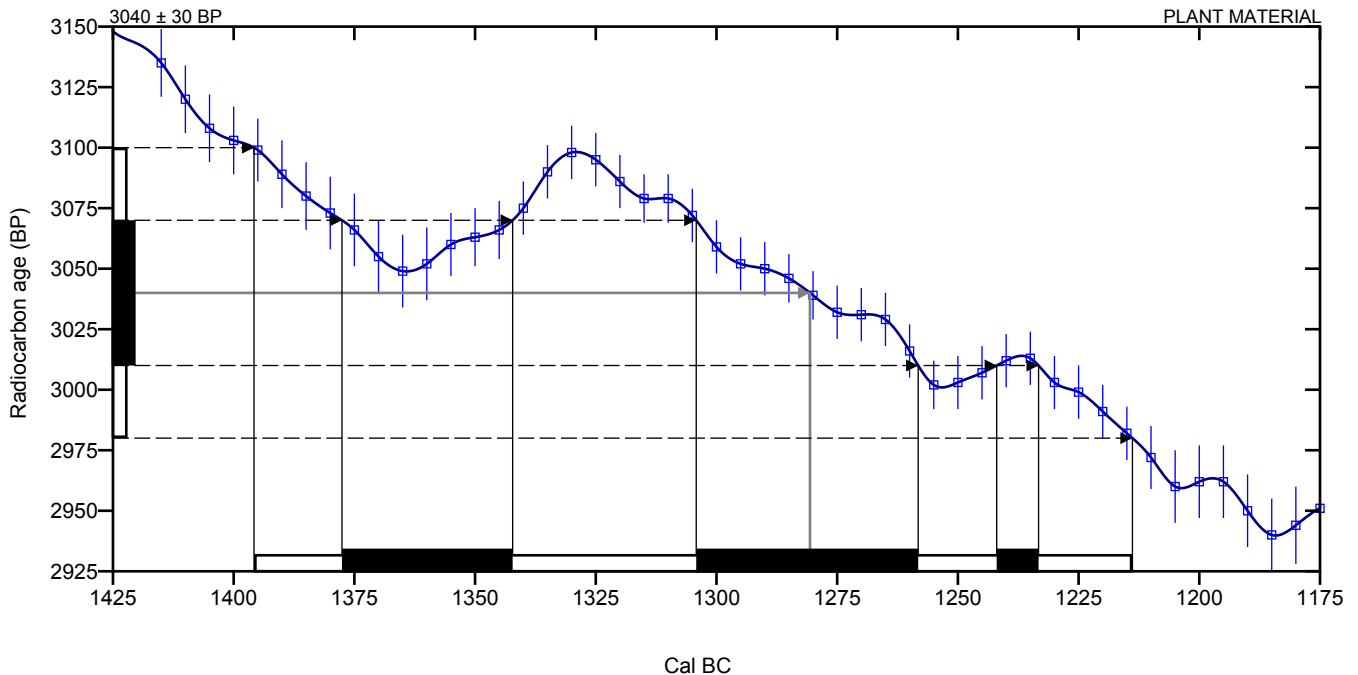
Laboratory number **Beta-407269**

Conventional radiocarbon age **3040 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1395 to 1215 (Cal BP 3345 to 3165)**

Intercept of radiocarbon age with calibration curve **Cal BC 1280 (Cal BP 3230)**

Calibrated Result (68% Probability) **Cal BC 1380 to 1340 (Cal BP 3330 to 3290)**
Cal BC 1305 to 1260 (Cal BP 3255 to 3210)
Cal BC 1240 to 1235 (Cal BP 3190 to 3185)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer P.J et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -28.6 o/oo : lab. mult = 1)

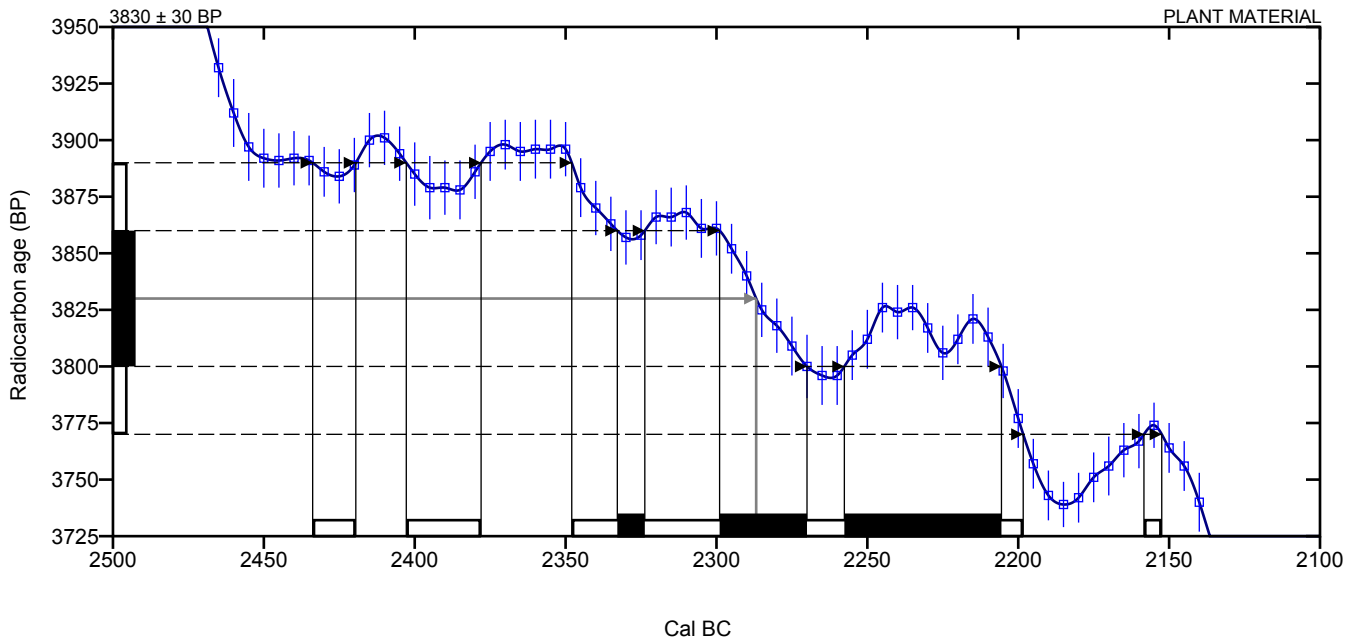
Laboratory number **Beta-407270**

Conventional radiocarbon age **3830 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 2435 to 2420 (Cal BP 4385 to 4370)**
 Cal BC 2405 to 2380 (Cal BP 4355 to 4330)
 Cal BC 2350 to 2200 (Cal BP 4300 to 4150)
 Cal BC 2160 to 2150 (Cal BP 4110 to 4100)

Intercept of radiocarbon age with calibration curve **Cal BC 2285 (Cal BP 4235)**

Calibrated Result (68% Probability) **Cal BC 2335 to 2325 (Cal BP 4285 to 4275)**
 Cal BC 2300 to 2270 (Cal BP 4250 to 4220)
 Cal BC 2260 to 2205 (Cal BP 4210 to 4155)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.1 o/oo : lab. mult = 1)

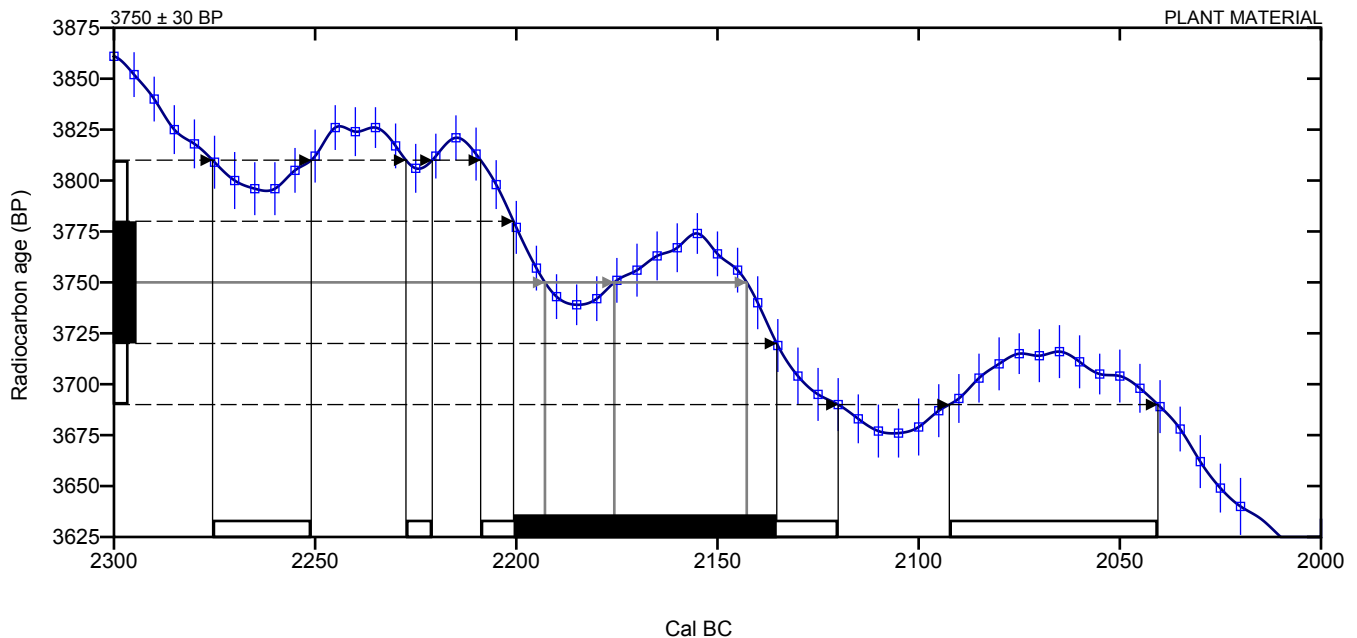
Laboratory number **Beta-407271**

Conventional radiocarbon age **3750 ± 30 BP**

Calibrated Result (95% Probability)
Cal BC 2275 to 2250 (Cal BP 4225 to 4200)
Cal BC 2225 to 2220 (Cal BP 4175 to 4170)
Cal BC 2210 to 2120 (Cal BP 4160 to 4070)
Cal BC 2090 to 2040 (Cal BP 4040 to 3990)

Intercept of radiocarbon age with calibration curve Cal BC 2195 (Cal BP 4145)
Cal BC 2175 (Cal BP 4125)
Cal BC 2145 (Cal BP 4095)

Calibrated Result (68% Probability) Cal BC 2200 to 2135 (Cal BP 4150 to 4085)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.8 o/oo : lab. mult = 1)

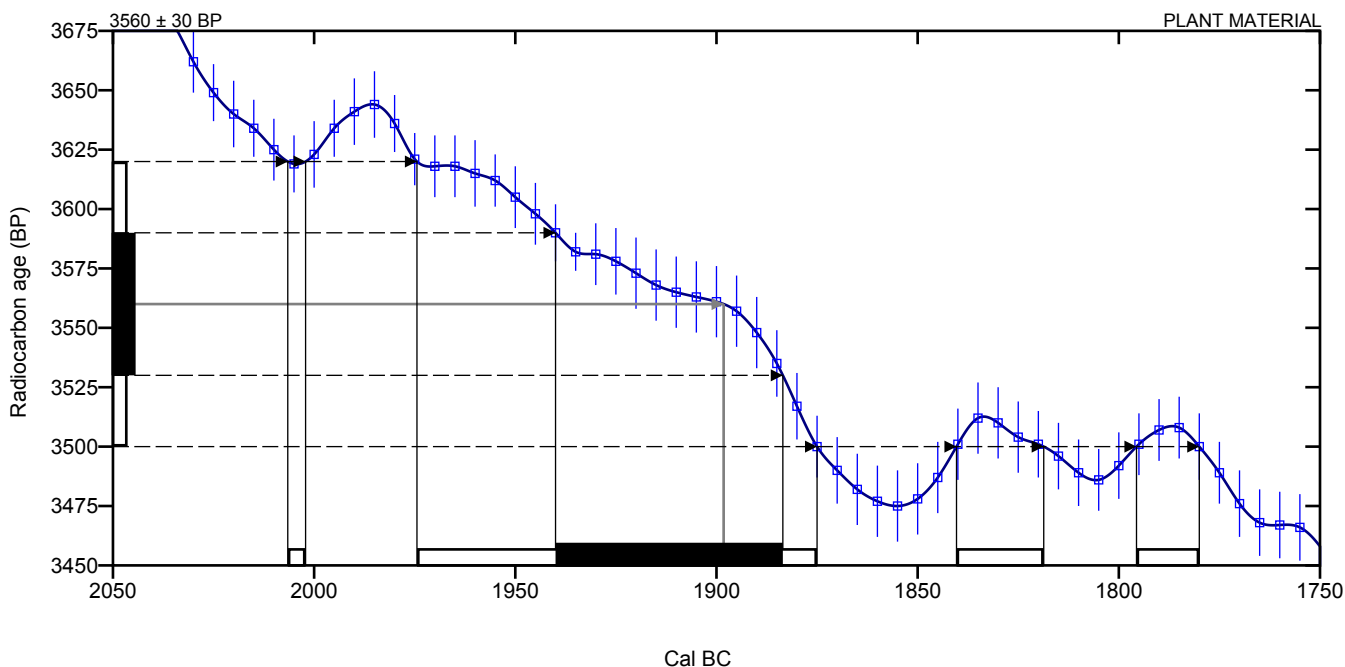
Laboratory number **Beta-407272**

Conventional radiocarbon age **3560 ± 30 BP**

Calibrated Result (95% Probability)
Cal BC 2005 to 2000 (Cal BP 3955 to 3950)
Cal BC 1975 to 1875 (Cal BP 3925 to 3825)
Cal BC 1840 to 1820 (Cal BP 3790 to 3770)
Cal BC 1795 to 1780 (Cal BP 3745 to 3730)

Intercept of radiocarbon age with calibration curve Cal BC 1900 (Cal BP 3850)

Calibrated Result (68% Probability) Cal BC 1940 to 1885 (Cal BP 3890 to 3835)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -24 o/oo : lab. mult = 1)

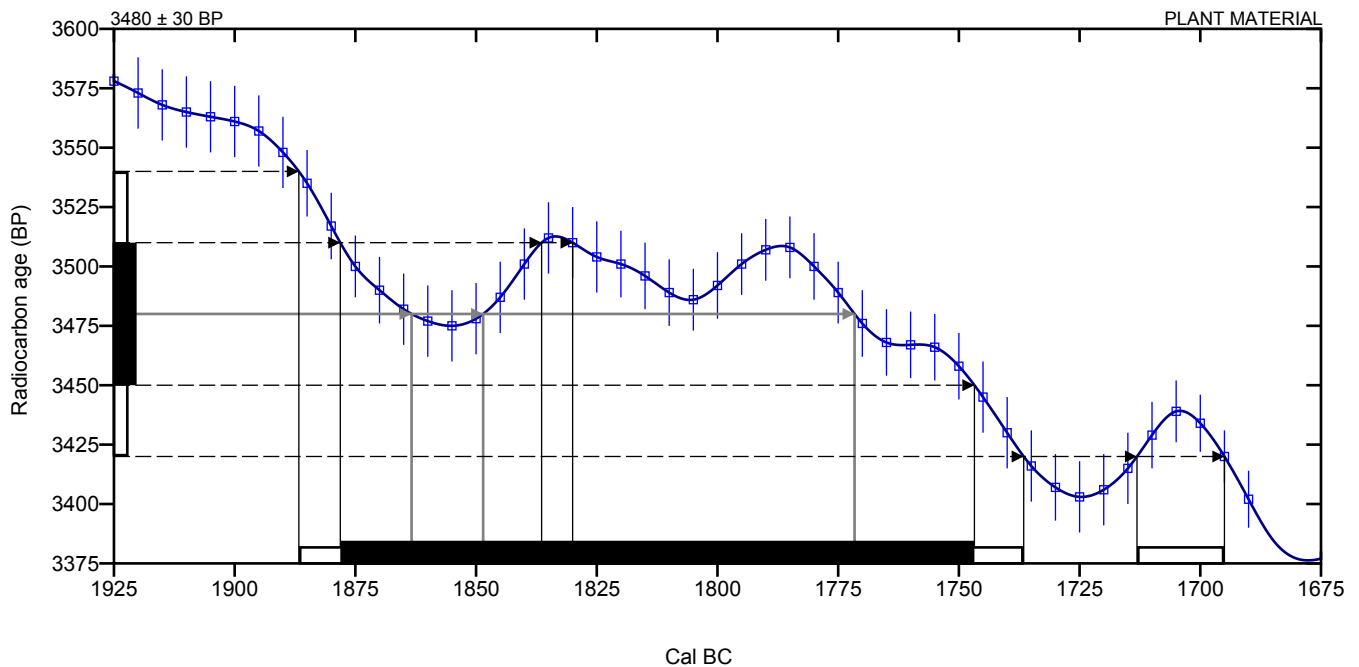
Laboratory number **Beta-407273**

Conventional radiocarbon age **3480 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1885 to 1735 (Cal BP 3835 to 3685)**
Cal BC 1715 to 1695 (Cal BP 3665 to 3645)

Intercept of radiocarbon age with calibration curve Cal BC 1865 (Cal BP 3815)
Cal BC 1850 (Cal BP 3800)
Cal BC 1770 (Cal BP 3720)

Calibrated Result (68% Probability) Cal BC 1880 to 1745 (Cal BP 3830 to 3695)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -25.7 o/oo : lab. mult = 1)

Laboratory number **Beta-407274**

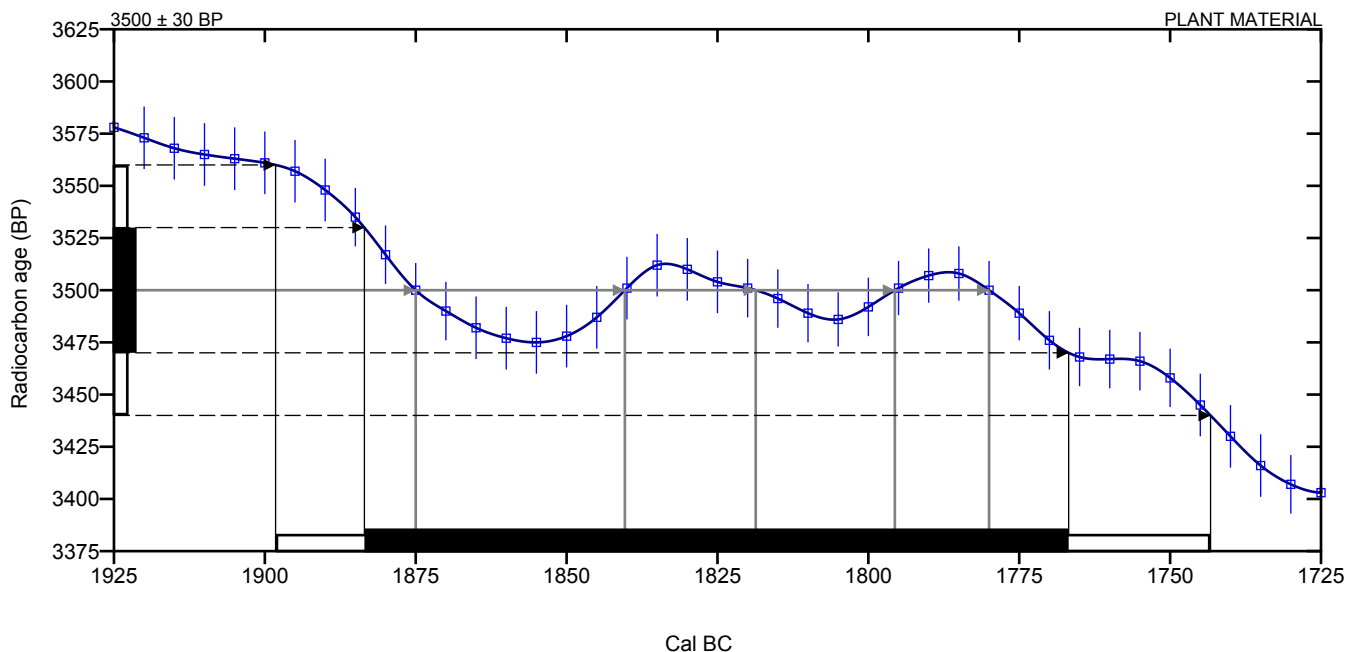
Conventional radiocarbon age **3500 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1900 to 1745 (Cal BP 3850 to 3695)**

Intercept of radiocarbon age with calibration curve

- Cal BC 1875 (Cal BP 3825)
- Cal BC 1840 (Cal BP 3790)
- Cal BC 1820 (Cal BP 3770)
- Cal BC 1795 (Cal BP 3745)
- Cal BC 1780 (Cal BP 3730)

Calibrated Result (68% Probability) **Cal BC 1885 to 1765 (Cal BP 3835 to 3715)**



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = N/A : lab. mult = 1)

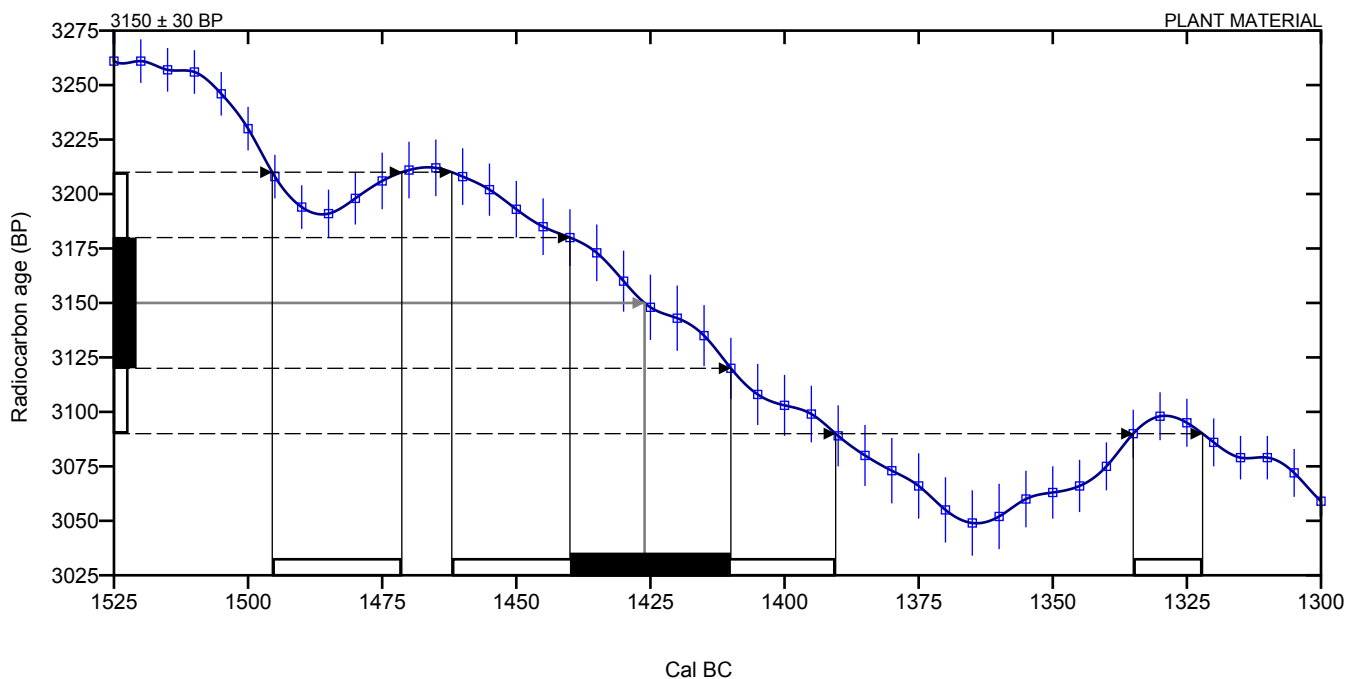
Laboratory number **Beta-407275**

Conventional radiocarbon age **3150 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1495 to 1470 (Cal BP 3445 to 3420)**
Cal BC 1460 to 1390 (Cal BP 3410 to 3340)
Cal BC 1335 to 1320 (Cal BP 3285 to 3270)

Intercept of radiocarbon age with calibration curve **Cal BC 1425 (Cal BP 3375)**

Calibrated Result (68% Probability) **Cal BC 1440 to 1410 (Cal BP 3390 to 3360)**



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -28.4 o/oo : lab. mult = 1)

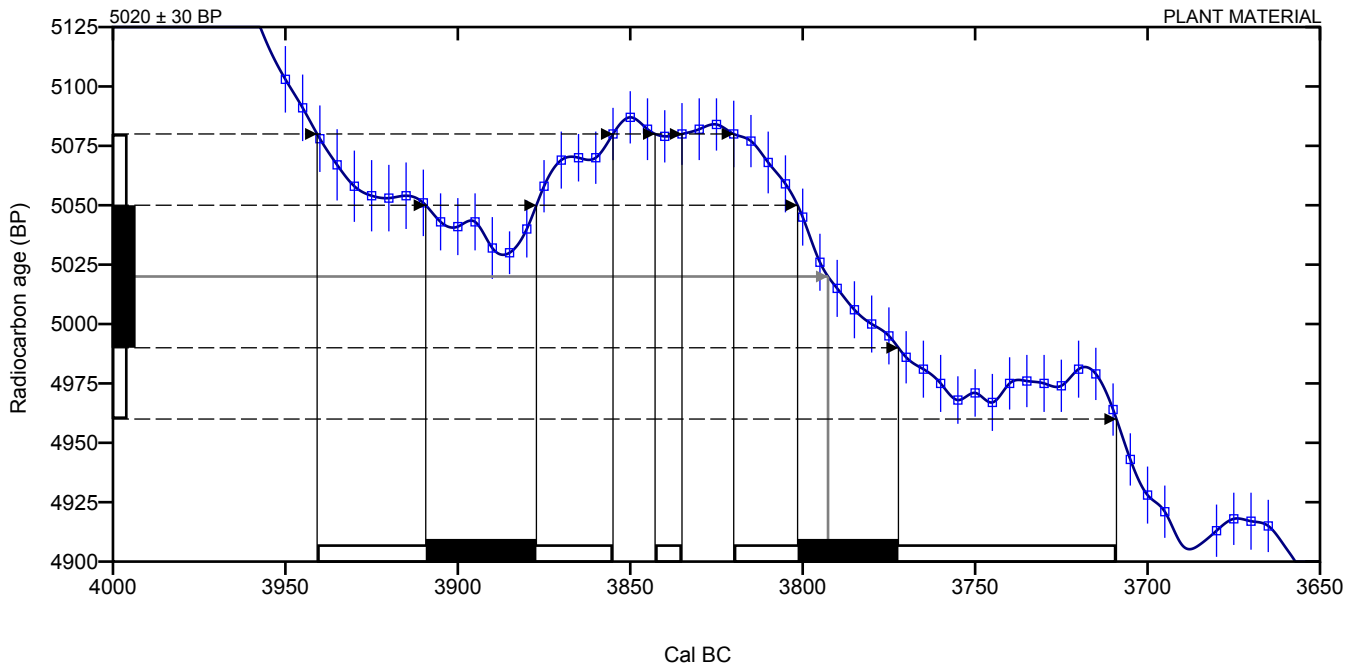
Laboratory number **Beta-407276**

Conventional radiocarbon age **5020 ± 30 BP**

Calibrated Result (95% Probability)
Cal BC 3940 to 3855 (Cal BP 5890 to 5805)
Cal BC 3845 to 3835 (Cal BP 5795 to 5785)
Cal BC 3820 to 3710 (Cal BP 5770 to 5660)

Intercept of radiocarbon age with calibration curve **Cal BC 3795 (Cal BP 5745)**

Calibrated Result (68% Probability)
Cal BC 3910 to 3875 (Cal BP 5860 to 5825)
Cal BC 3800 to 3770 (Cal BP 5750 to 5720)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = N/A : lab. mult = 1)

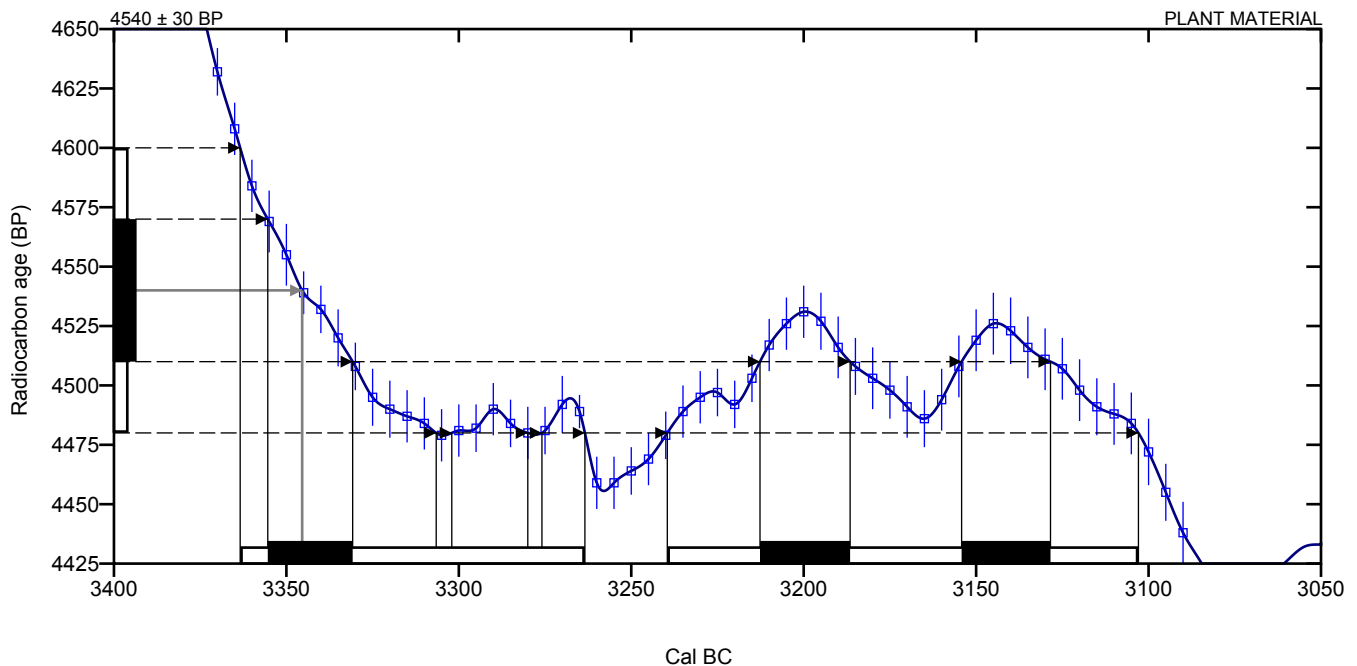
Laboratory number **Beta-407277**

Conventional radiocarbon age **4540 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 3365 to 3265 (Cal BP 5315 to 5215)**
Cal BC 3240 to 3105 (Cal BP 5190 to 5055)

Intercept of radiocarbon age with calibration curve Cal BC 3345 (Cal BP 5295)

Calibrated Result (68% Probability) Cal BC 3355 to 3330 (Cal BP 5305 to 5280)
Cal BC 3215 to 3185 (Cal BP 5165 to 5135)
Cal BC 3155 to 3130 (Cal BP 5105 to 5080)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -25.7 o/oo : lab. mult = 1)

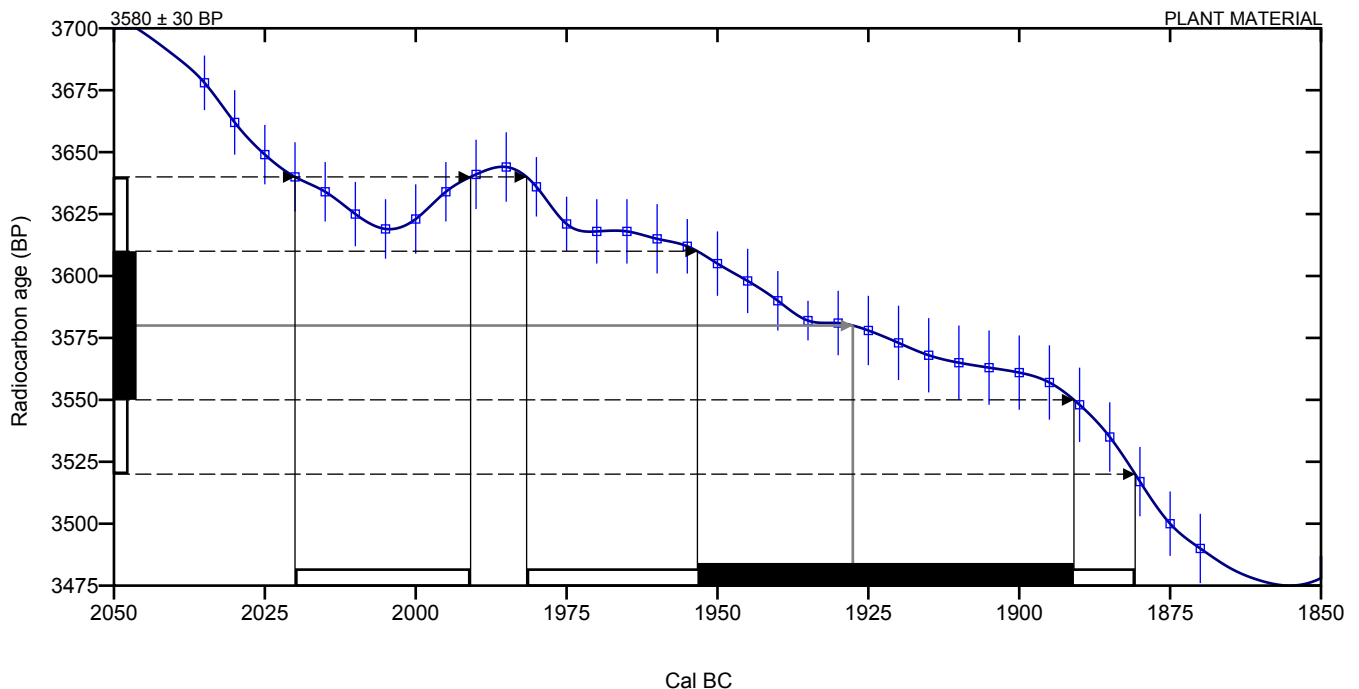
Laboratory number **Beta-407278**

Conventional radiocarbon age **3580 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 2020 to 1990 (Cal BP 3970 to 3940)**
Cal BC 1980 to 1880 (Cal BP 3930 to 3830)

Intercept of radiocarbon age with calibration curve Cal BC 1930 (Cal BP 3880)

Calibrated Result (68% Probability) Cal BC 1955 to 1890 (Cal BP 3905 to 3840)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -30.1 o/oo : lab. mult = 1)

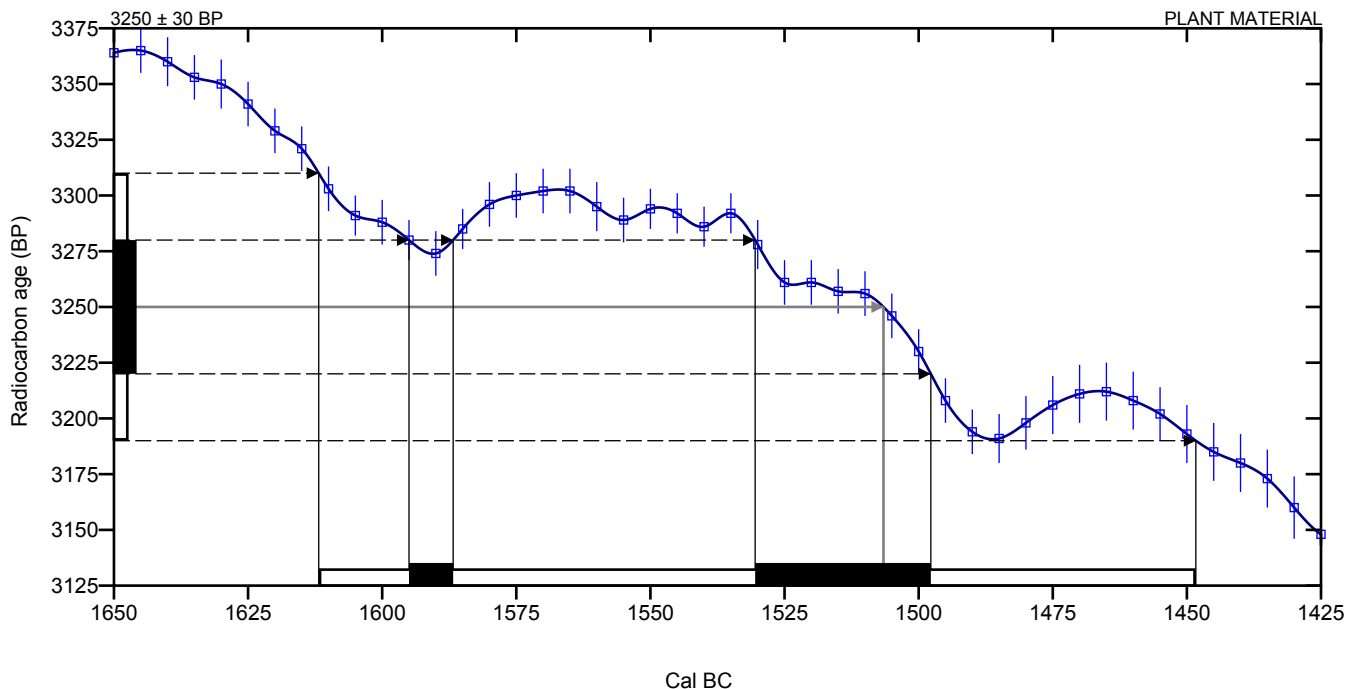
Laboratory number **Beta-407279**

Conventional radiocarbon age **3250 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1610 to 1450 (Cal BP 3560 to 3400)**

Intercept of radiocarbon age with calibration curve **Cal BC 1505 (Cal BP 3455)**

Calibrated Result (68% Probability) **Cal BC 1595 to 1585 (Cal BP 3545 to 3535)
Cal BC 1530 to 1500 (Cal BP 3480 to 3450)**



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.4 o/oo : lab. mult = 1)

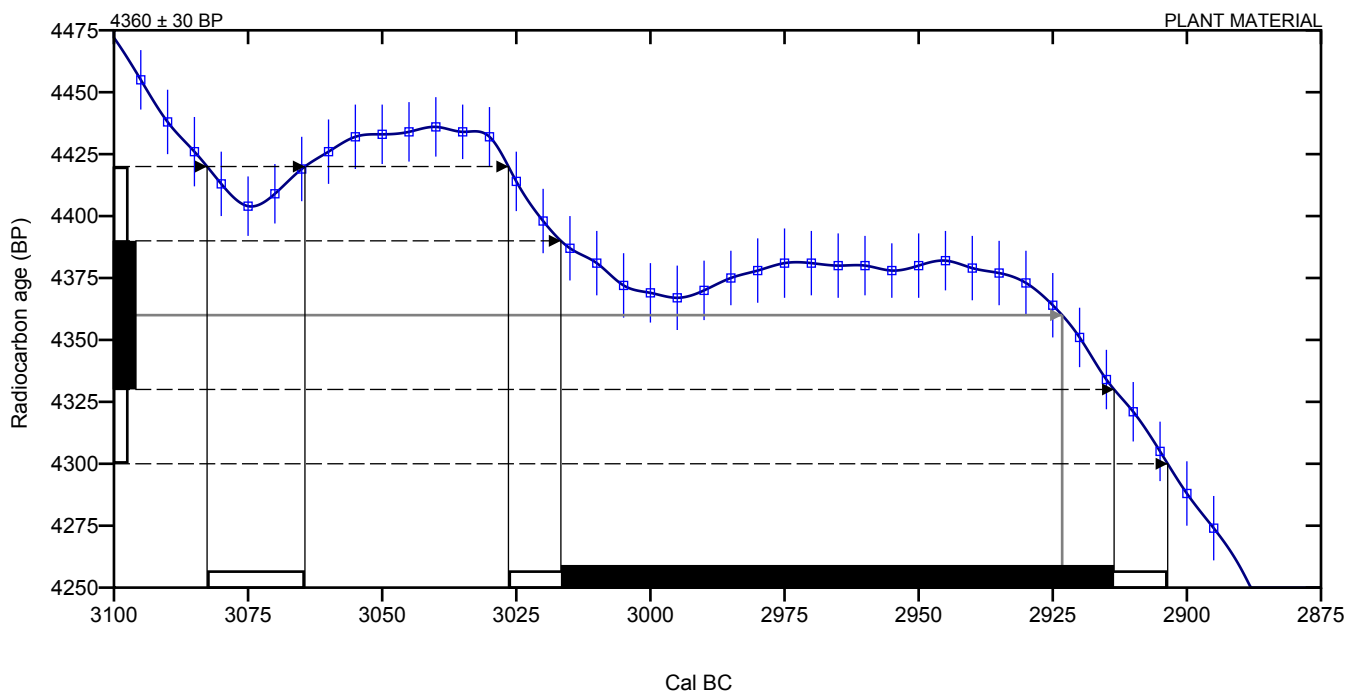
Laboratory number **Beta-407280**

Conventional radiocarbon age **4360 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 3085 to 3065 (Cal BP 5035 to 5015)**
Cal BC 3025 to 2905 (Cal BP 4975 to 4855)

Intercept of radiocarbon age with calibration curve Cal BC 2925 (Cal BP 4875)

Calibrated Result (68% Probability) Cal BC 3015 to 2915 (Cal BP 4965 to 4865)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer P.J et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.4 o/oo : lab. mult = 1)

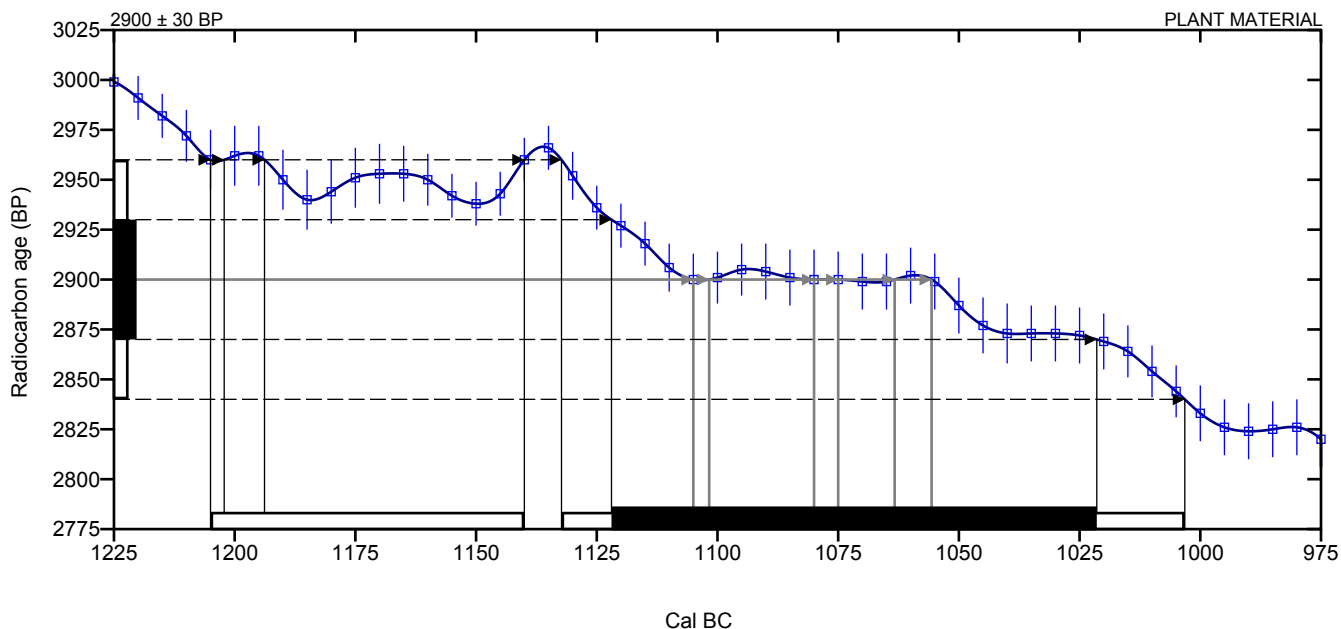
Laboratory number **Beta-407281**

Conventional radiocarbon age **2900 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 1205 to 1140 (Cal BP 3155 to 3090)**
Cal BC 1130 to 1005 (Cal BP 3080 to 2955)

Intercept of radiocarbon age with calibration curve Cal BC 1105 (Cal BP 3055)
Cal BC 1100 (Cal BP 3050)
Cal BC 1080 (Cal BP 3030)
Cal BC 1075 (Cal BP 3025)
Cal BC 1065 (Cal BP 3015)
Cal BC 1055 (Cal BP 3005)

Calibrated Result (68% Probability) Cal BC 1120 to 1020 (Cal BP 3070 to 2970)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer P.J et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -28.2 o/oo : lab. mult = 1)

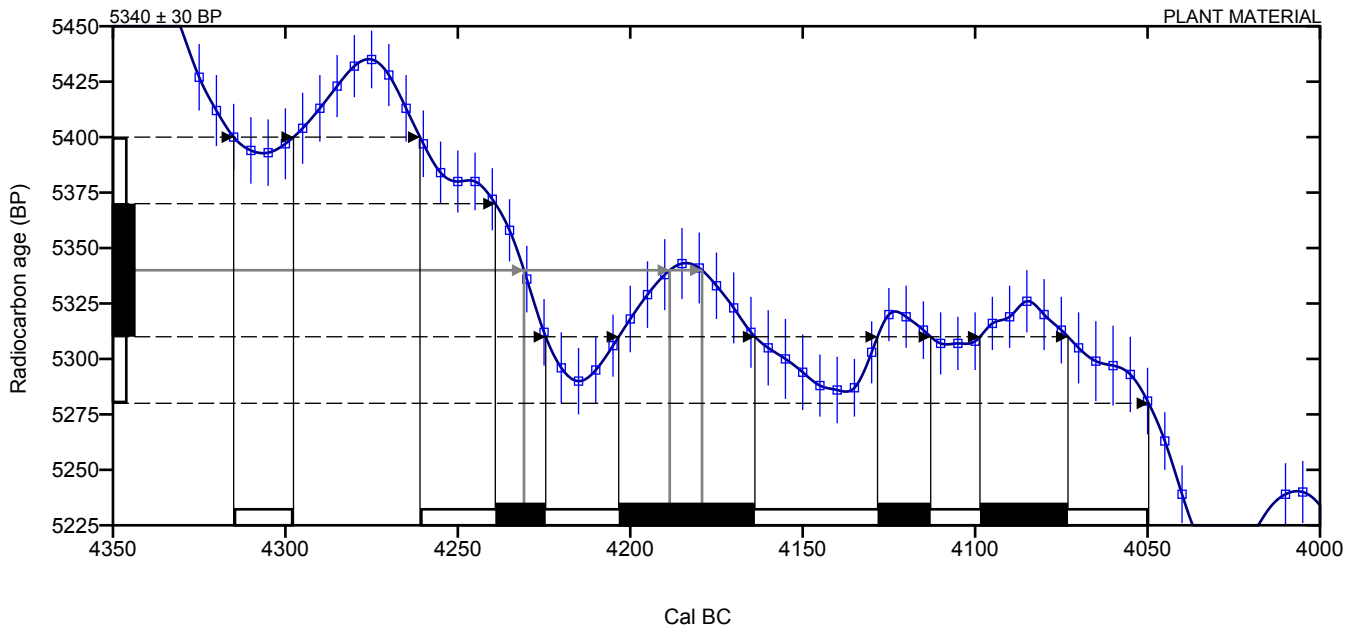
Laboratory number **Beta-407283**

Conventional radiocarbon age **5340 ± 30 BP**

Calibrated Result (95% Probability) **Cal BC 4315 to 4300 (Cal BP 6265 to 6250)**
Cal BC 4260 to 4050 (Cal BP 6210 to 6000)

Intercept of radiocarbon age with calibration curve Cal BC 4230 (Cal BP 6180)
Cal BC 4190 (Cal BP 6140)
Cal BC 4180 (Cal BP 6130)

Calibrated Result (68% Probability) Cal BC 4240 to 4225 (Cal BP 6190 to 6175)
Cal BC 4205 to 4165 (Cal BP 6155 to 6115)
Cal BC 4130 to 4115 (Cal BP 6080 to 6065)
Cal BC 4100 to 4075 (Cal BP 6050 to 6025)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com