

Radiocarbon dating archaeobotanical remains from Holmer

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Excavations by Worcestershire Archaeology in 2017, on farmland in the parish of Holmer at the northern periphery of Hereford, discovered an early medieval agricultural settlement with evidence spanning the ninth to thirteenth centuries AD (Arnold *et al.* 2018). As part of the excavations, environmental sampling produced a valuable assemblage of Anglo-Saxon and medieval charred plant remains, which were brought to the attention of the Feeding Anglo-Saxon England project (FeedSax) by Graham Arnold in 2018. It was considered that FeedSax could make great use of this archaeobotanical assemblage in its investigations into the development of early medieval field systems, provided that the samples could be accurately dated.

In the original post-excavation programme, Worcestershire Archaeology obtained radiocarbon dates on charred grains from samples 3 and 7, from a pit and an oven respectively, as follows:

sample	context	grains	laboratory no.	age BP	calibrated dates AD (confidence)
3	344	<i>Hordeum vulgare</i>	Beta-487813	1190±30	771–897 (88.0%)
7	115	<i>Triticum</i> sp. free-threshing	Beta-487814	920±30	1035–1181 (88.8%)

Context 344 was thus assigned to a ‘Late Saxon’ phase, Phase 4, which preceded the early medieval phase of settlement, Phase 5 (eleventh to twelfth centuries), represented by a complex of ditches and a sequence of drying ovens from which sample 7 derives (Arnold *et al.* 2018, 9–11). Overall for the site, Phases 4 and 5 were devised on the basis of both ceramic evidence and these two radiocarbon dates.

The FeedSax project submitted charred grains from three additional samples to the Oxford Radiocarbon Accelerator Unit for radiocarbon dating. Samples 1 and 6 derive from a ditch and an oven respectively, and were both dated by the excavator to Phase 5 (eleventh to twelfth centuries). Sample 21 comes from a ditch tentatively dated to the thirteenth century (Arnold *et al.* 2018, 5). The grains dated by the FeedSax project were photographed at the University of Oxford by the author, prior to submission for dating, and these photographs are included in the project’s photographic archive (McKerracher *et al.* in prep.). The cereal grains, all identifiable as free-threshing wheat grains (*Triticum* sp. free-threshing type), were originally analysed and identified by John Giorgi (Giorgi 2018), and subsampled by the author whilst visiting Worcestershire Archaeology.

The radiocarbon determinations obtained for these samples, and for those obtained in the original post-excavation programme, have been calibrated using IntCal20 (Reimer *et al.* 2020) and OxCal 4.4.2 (Bronk Ramsey 2009), and the results are shown in the tables presented here and the figures at the end of this report.

Results

sample	context	grains	laboratory no.	original phase	age BP	calibrated dates AD (confidence)
1	303	3 x wheat	OxA-39035	C11–12	1113±18	892–990 (95.4%)
6	121	2 x wheat	OxA-39036	C11–12	895±18	1150–1219 (69.9%)
21	451	3 x wheat	OxA-39037	C13	957±18	1075–1157 (76.0%)

The newly obtained radiocarbon date range for sample 6 is partly consistent with its original eleventh- to twelfth-century phasing, but with a later focus between the latter part of the twelfth century and early thirteenth century. The parent contexts of both samples 6 and 7 (dated above) are part of drying oven group 117, and their respective radiocarbon dates together support a mid-eleventh- to late twelfth/early thirteenth-century date for this oven. Both could belong to a period centred on the latter part of the twelfth century, or they could represent successive phases: the early/mid-eleventh to mid-twelfth centuries, and the mid-/late twelfth to early thirteenth centuries.

The radiocarbon date range for sample 21 spans the late eleventh to mid-/late twelfth centuries, indicating that the fill of ditch 452 – or at least its archaeobotanical contents – may be broadly contemporary with the earlier phases of oven group 117, rather than belonging to the thirteenth century as originally, tentatively suggested.

The radiocarbon date for sample 1 is not compatible with its original eleventh- to twelfth-century phasing. It could just possibly be contemporary with sample 3 (late eighth- to late ninth-century), but more likely represents a subsequent period of activity between the late ninth and late tenth centuries. This new date therefore strengthens the excavator’s conviction – based upon the discovery of a ‘Stafford-type ware’ sherd in a boundary ditch – that later Anglo-Saxon activity continued at the site after the deposition of sample 3 between the late eighth and late ninth centuries (Arnold *et al.* 2018, 9).

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References

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Calibration of radiocarbon determinations





