

# *Pre-agricultural plant management in the uplands of the central Zagros: the archaeobotanical evidence from Sheikh-e Abad*

Article

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## Tables

**Table 1** Radiocarbon determinations from Sheikh-e Abad

Trench	Deposit type	Material	Lab no.	Conventional date BP	Intercept with calibration curve	Calibrated date BC 2-sigma (95.4%)	$\delta^{13}\text{C}$ (PDB)
1	Ash layer	Charred plant material (seed)	Beta-258647	10130±60	9810	10100–9450	n/a
1	Ash layer	Charred plant material (wood charcoal)	Beta-267508	9970±50	9400	9470–9730 and 9680–9300	-23.8‰
1	Ash layer	Charred plant material (seed)	Beta-267509	9730±60	9240	9280–9410	-22.7‰
2	Ash layer	Charred plant material (seed)	Beta-258646	8810±60	7960	8230–7730	-23.2‰
3	Building 2 (floor)	Animal bone: sheep/goat	Beta-258648	8600±40	7590	7640–7580	-18.9‰

**Table 2** Records of the frequency and abundance of all recorded taxa across Trenches 1, 2 and 3 at Sheikh-e Abad. ‘cf.’ denotes a lower certainty of identification and brackets the uncertainty of cultivated/domestic status. \* indicates taxa interpreted as possible “arable weeds” based on correspondence analysis as discussed in text

Taxa	Trench 1 (5 samples) 126 litres		Trench 2 (9 samples) 441 litres		Trench 3 (27 samples) 1326 litres	
	Sum	Ubiquity (%)	Sum	Ubiquity (%)	Sum	Ubiquity (%)
<b>Cereals</b>						
<i>Hordeum vulgare</i> hulled	.	.	14	78	2	7
<i>Hordeum vulgare</i>	.	.	12	56	1	4
<i>Hordeum vulgare</i> / <i>spontaneum</i> , rachis	.	.	1	11	3	11
<i>Triticum monococcum</i> /dicoccum	.	.	3	11	.	.
<i>Triticum</i> 'new-type'/dicoccum, glume base	.	.	.	.	2	4
Cereal indet.	.	.	3	22	1	4
<b>Pulses</b>						
<i>Lens</i> sp. Mill.	.	.	74	100	2	7
<i>Pisum</i> sp. L.	.	.	12	67	.	.
<i>Pisum</i> sp. L. (small-seeded)	.	.	7	33	.	.
<i>Trigonella</i> sp. L.	.	.	250	67	1	4
<i>Vicia ervilia</i> (L.) Willd.	.	.	57	100	1	4
<i>Vicia</i> /Lathyrus spp. L.	.	.	24	67	1	4
<i>Vicia</i> spp. L.	.	.	11	56	.	.
Large-seeded legume indet.	(1)	(20)	114	100	10	26
<b>Large-seeded grasses</b>						
<i>Hordeum spontaneum</i> C. Koch.	.	.	12	56	.	.
<b>Medium(large)-seeded grasses</b>						
<i>Aegilops</i> sp. L., spikelet base	5	20	22	11	.	.
<i>Piptatherum holciforme</i> (M.Bieb.) Roem. and Schult.	11	80	137	100	1	4
<i>Bromus</i> spp. Scop.	.	.	29	56	1	4
<b>Medium(medium)-seeded grasses</b>						
<i>Hordeum</i> (non-spontaneum) sp. L.	1	20	1	11	.	.
<i>Stipa</i> spp. L.	10	80	530	100	12	30
<i>Stipa</i> spp. L., awn	5	80	5	44	4	15
<i>Taeniatherum caput-medusae</i> (L.) Nevski.	5	40	245	100	2	7
<i>Taeniatherum caput-medusae</i> (L.) Nevski., rachis	1	20	230	89	2	4
<b>Medium(small)-seeded grasses</b>						
cf. <i>Eremopyrum</i> sp. (Ledeb.) Jaub. Et Spach.	.	.	3	11	.	.
<i>Lolium perenne</i> /rigidum	50	100	556	89	.	.
<b>Small-seeded grasses</b>						
<i>Crypsis</i> sp. Ait.	15	60	1064	67	3	11
<i>Poa</i> spp. L.	124	80	3296	67	1670	67
<i>Sporobolus</i> sp. R. Br.	.	.	72	33	1	4
<b>Medium-seeded Poaceae indet.</b>	<b>41</b>	<b>100</b>	<b>585</b>	<b>100</b>	<b>9</b>	<b>30</b>

<b>Small-seeded Poaceae indet.</b>	<b>5</b>	<b>20</b>	<b>.</b>	<b>.</b>	<b>.</b>	<b>.</b>
<b>Nut/fruit</b>						
<i>Pistacia</i> sp. L., nutshell	.	.	20	56	1	4
<i>Pistacia</i> indet., nutshell	1	20	13	56	6	19
<i>Prunus amygdalus</i> Batsch., nutshell	5	80	12	100	.	.
<i>Prunus</i> sp. L., nutshell	.	.	.	.	.	.
Nutshell spp./indet	2	40	13	89	7	26
<b>Wild/weed</b>						
<i>Coronilla</i> sp. L. *	2	20	4	22	.	.
Small-seeded legume indet.	66	100	319	100	10	11
<i>Chenopodium</i> spp. L.	41	100	13	56	.	.
<i>Bellevia</i> sp. Lapeyr. *	2	40	30	89	1	4
Asteraceae spp.	.	.	10	33	.	.
<i>Heliotropium</i> sp.* L.	.	.	3	22	1	4
<i>Brassica/Sinapis</i> sp. L.	4	40	101	100	2	7
<i>Euclidium syriacum</i> (L.) R. Br.	.	.	44	78	2	7
<i>Neslia paniculata</i> (L.) Desv.	1	20	18	78	.	.
Brassicaceae spp./indet	4	60	17	89	2	7
Caryophyllaceae sp.	.	.	.	.	1	4
<i>Silene</i> sp. L.*	2	40	15	56	.	.
<i>Vaccaria pyramidata</i> Medik.*	2	20	12	56	.	.
Convolvulaceae sp.	.	.	2	22	.	.
<i>Bolboschoenous glaucus</i> (Lam.) S.G. Smith	49	100	362	100	9	30
<i>Carex</i> sp. L.	.	.	1	11	1	4
Cyperaceae indet.	11	80	89	56	8	22
Dipsacaceae/Apiaceae indet.	.	.	14	33	.	.
<i>Hypericum</i> sp. L.	.	.	253	44	2	7
<i>Ajuga</i> sp. L.	.	.	14	67	.	.
Lamiaceae spp.	11	60	5	44	1	4
<i>Fumaria</i> sp. L.*	1	20	3	11	.	.
<i>Glaucium</i> sp. Mill.*	2	40	208	78	.	.
<i>Papaver</i> spp. L.*	6	40	689	67	12	30
<i>Polygonum aviculare</i> L.	2	40	.	.	.	.
<i>Rumex</i> sp. L.	2	40	.	.	.	.
Polygonaceae indet	2	20	.	.	.	.
<i>Adonis</i> sp. L.*	.	.	15	67	.	.
<i>Galium</i> sp. L.*	1	20	10	33	.	.
<i>Hyoscyamus</i> sp. L.	.	.	2	22	2	4
cf. <i>Thymelea</i> sp. Mill.*	.	.	1	11	.	.
Pod types	2	40	30	78	6	22
Seed/fruit types	11	60	1007	100	10	30
<b>Culm</b>	<b>1</b>	<b>20</b>	<b>6</b>	<b>56</b>	<b>.</b>	<b>.</b>
<b>Animal Dung (ml)</b>	<b>.</b>	<b>.</b>	<b>1.2</b>	<b>33</b>	<b>.</b>	<b>.</b>
<b>Rodent Pellet</b>	<b>.</b>	<b>.</b>	<b>53</b>	<b>67</b>	<b>.</b>	<b>.</b>
<i>Average density (items per litre)</i>	<i>4.0</i>		<i>24.3</i>		<i>1.4</i>	
<b>Total sum</b>	<b>507</b>		<b>10724</b>		<b>1813</b>	

**Table 3** Classification of major wild plant taxa at Sheikh-e Abad based on their likelihood of surviving in dung (ranked from low to high) as discussed in text

Category	Taxa
Low	<i>Hordeum spontaneum</i> , <i>Bromus</i> spp., <i>Taeniatherum caput-medusae</i> , <i>Stipa</i> spp., medium-seeded grass indet., Brassicaceae indet.
Medium	<i>Lolium perenne/rigidum</i> , <i>Piptatherum holciforme</i> , <i>Bellevallia</i> sp., <i>Euclidium syriacum</i> , <i>Adonis</i> sp., <i>Ajuga</i> sp., <i>Neslia paniculata</i> , <i>Brassica/Sinapis</i> sp., Brassicaceae type 3, <i>Vaccaria pyramidata</i>
High	<i>Coronilla</i> sp., small-seeded legumes, <i>Bolboschoenus glaucus</i> , <i>Chenopodium</i> spp., <i>Galium</i> sp., Cyperaceae spp., <i>Heliotropium</i> sp., <i>Hyoscyomas</i> sp., Lamiaceae spp., <i>Hypericum</i> sp., <i>Poa</i> spp., <i>Crypsis</i> sp., <i>Sporobolus</i> sp., <i>Glaucium</i> sp., <i>Papaver</i> spp., <i>Silene</i> sp., small-seeded grass indet.