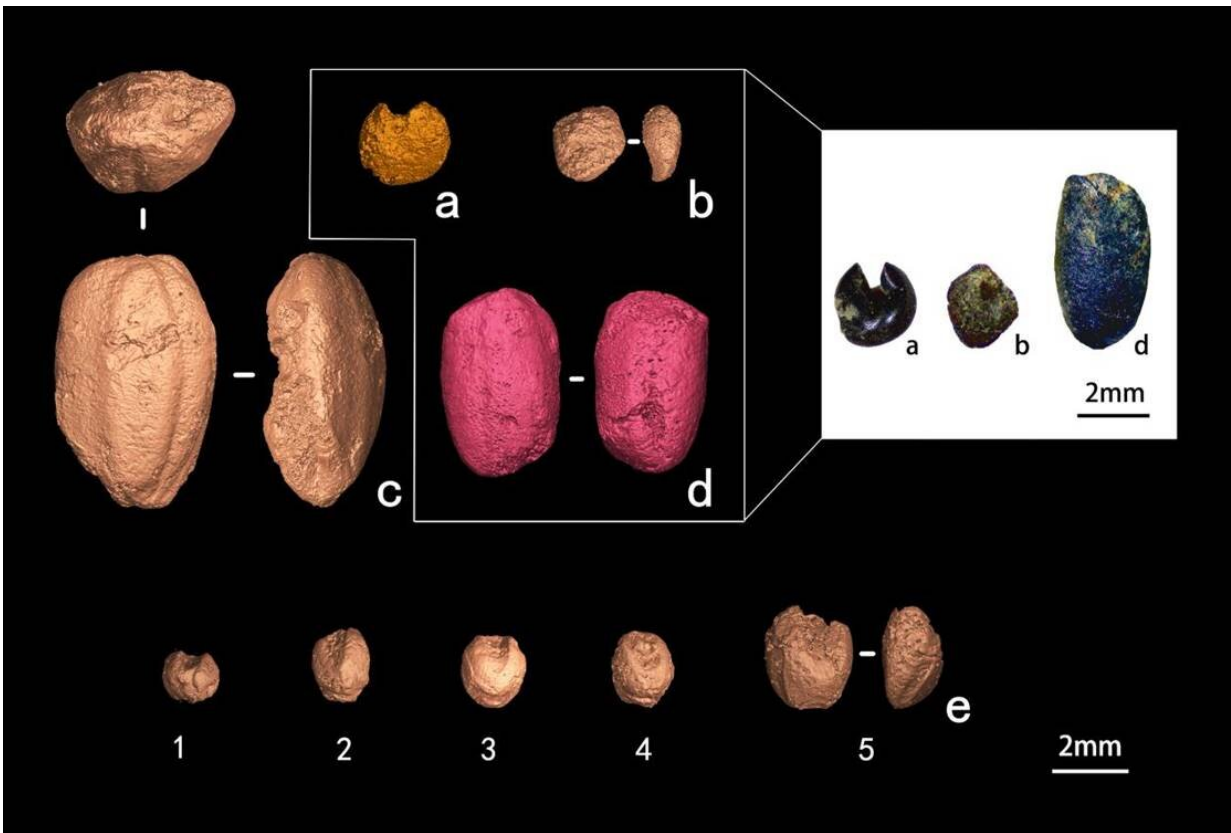


What was the agriculture like in southeast China in the Late Neolithic?

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3D model of major charred plant remains identified at the Jingshuidun site. (a) Layer 25, Chenopodiaceae caryopsis; (b) Layer 27, Solanaceae caryopsis; (c) Layer 27, rice caryopsis; (d) Layer 32, Fabaceae caryopsis; (e) 1–4: Layer 25, 5: Layer 26, foxtail millet caryopsis. Credit: Higher Education Press

The emergence and spread of agriculture in the Neolithic had a revolutionary impact on the development of human society, and it provided a solid economic basis for the origin and development of human civilization. In southern China, the original crop was rice, but over time, millet cultivation gradually spread. Affected by these various environmental and social developmental factors, there are still many issues about spatiotemporal detail of agriculture development in southern Anhui Province, China, with most information currently deriving from historical documents and rather limited archeological evidence.

A study has examined data of the archeo-botanical remains at the Jingshuidun site in the mountainous areas of the lower reaches of the Yangtze River in southern Anhui Province. This work was carried out by the research team of Wu Yan, from the Institute of Vertebrate Paleontology and Paleoanthropology, entitled "The history of agriculture in the mountainous areas of the lower Yangtze River since the late Neolithic." It is published online in *Frontiers of Earth Science*.

The study site of Jingshuidun (31°48 '3"N, 117°11' 50" E), located at the intersection of the lower reaches of the Yangtze River Plain and the mountainous area in southern Anhui Province, preserves thick archeological strata and a rare superpositional relationship of multiple occupational periods, allowing for the study of cultural stages and archeobotany.

The authors noted that macro-botanical remains and phytoliths of domesticated [rice](#) are present in layers at the Jingshuidun site, dated to 4874–4820 cal. yr. B.P. (middle-late Liangzhu Period) and 2667–2568 cal. yr. B.P. (late Western Zhou Dynasty to the early Spring and Autumn Period). Moreover, macro-botanical remains and phytoliths from the site document the earliest remains of foxtail millet (*Setaria italica*) in southern Anhui Province, from a layer dating to the late Western Zhou Dynasty and the early Spring and Autumn Period (2667–2568 cal. yr.

B.P.). These results suggest that the people occupying the Jingshuidun site used single rice farming as far back as 4874–4820 cal. yr. B.P., and they began to plant millet by at least 2667–2568 cal. yr. B.P., documenting the spread of millet agriculture to the southern area by that time.

The study also showed that there were many traces of carbonized millet remains in layers dated to 2667–2568 cal. yr. B.P. in the Jingshuidun site, which is the earliest direct dating of millet remains in southern Anhui. Evidence of macro-botanical remains at the Jingshuidun site shows that dry cultivation techniques from northern China had spread to southern Anhui by 2667–2568 cal. yr. B.P., and that mixed cultivation of rice and millet occurred. It might have been caused by the migration of ancient people and the change of climate.

The results of this study on macro-botanical remains and phytoliths also form the basis for the reconstruction of the subsistence economy of ancient humans at the Jingshuidun site from the late Neolithic to early historical times. The study provides a clearer picture of the development of rice and millet [agriculture](#) in the southern Anhui Province region, as well as the spread of millet cultivation, when its dates are combined with those of the previous archeo-botanical work. It provides new evidence for further understanding of agricultural development and the transmission route of millet in southern Anhui since the late Neolithic period.

More information: Jingyi Wang et al, The history of agriculture in the mountainous areas of the lower Yangtze River since the late Neolithic, *Frontiers of Earth Science* (2022). [DOI: 10.1007/s11707-021-0956-z](https://doi.org/10.1007/s11707-021-0956-z)

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