

How old is the Olger Dyke?

Dendrochronology is a unique and precise scientific method of dating wood. The method provides us with information about when a tree was felled, how old it is, and approximately where it grew. The wooden palisades of the Olger Dyke are constructed using posts of varying thickness from older and younger oak trees. By carrying out dendrochronological analyses of the posts' annular rings we can establish when the Olger Dyke was constructed.

Oak has three different types of annular rings: the bark, the sapwood, and the heartwood. The bark is the outermost ring. If it is preserved it is possible to determine exactly when the tree was felled. Sapwood represents growth rings, and the number of rings varies between fifteen and twenty-five. If the first ring is preserved, the year of felling can be established within fifteen and twenty-five years. The more preserved sapwood rings a sample has, the higher the precision of the date. However, if only heartwood is preserved, it is simply possible to state that the tree was felled fifteen to twenty-five years after the youngest heartwood ring at the earliest.

So far, seventy-six posts from different sections of the Olger Dyke have been dated dendrochronologically. The structure was erected between 20 and 31 AD. It was extended and maintained in the years 42, 51, 78/79, and 89/90 AD. The Olger Dyke was maintained until 125-130 AD at which point it loses its significance and goes out of use.

Captions:

Section of an oak log with bark and annular rings. Pith, heartwood, sapwood, bark.

Section of wood from the Olger Dyke near Bjerndrupvej.

Dendrochronological diagram showing the dated posts from sections of the Olger Dyke at Bjerndrupvej and Uge Mark.

Examples of structures, buildings, and objects from southern Jutland which have been dated using dendrochronology.

Palisades from the Olger Dyke, 25 AD.

Well from Hjemsted Banke, 297 AD.

Wooden construction from Dannevirke, 737 AD.

The hull of the ship from Haderslev, 1220 AD.

Beams from the roof of the church of Starup, 1440 AD.

Timber frames from the house of Stevelt, 1640 AD.

Oak tree, 2023.

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