Sessile oak

Quercus petraea Liebl. | F: Chêne sessile | I: Quercia rovere | R: Ruver puschlà/tardiv | E: Sessile oak

General

In Switzerland, sessile oak is more common overall than pedunculate oak, especially in Valais and Ticino[1]. It is more drought-tolerant than pedunculate oak but more sensitive to late frosts[1].

Flowering

As in all members of the beech family (Fagaceae), the flowers of sessile oak are unisexual. The male flowers are borne in pendulous inflorescences, so-called “catkins” (Fig. 1). Sessile oak flowers from the end of April to mid-June, about two weeks later than pedunculate oak[2]. This reduces the risk of damage from late frosts[2].

Fruits

The acorns are surrounded by a woody cup, the so-called cupule. Unlike pedunculate oak, the fruits of sessile oak are unstalked or only very shortly stalked and sit close to the twigs (Fig. 2). They ripen in October and then fall to the ground. Acorns remain viable for only a short time and do not form a persistent seed bank.

Masting behaviour

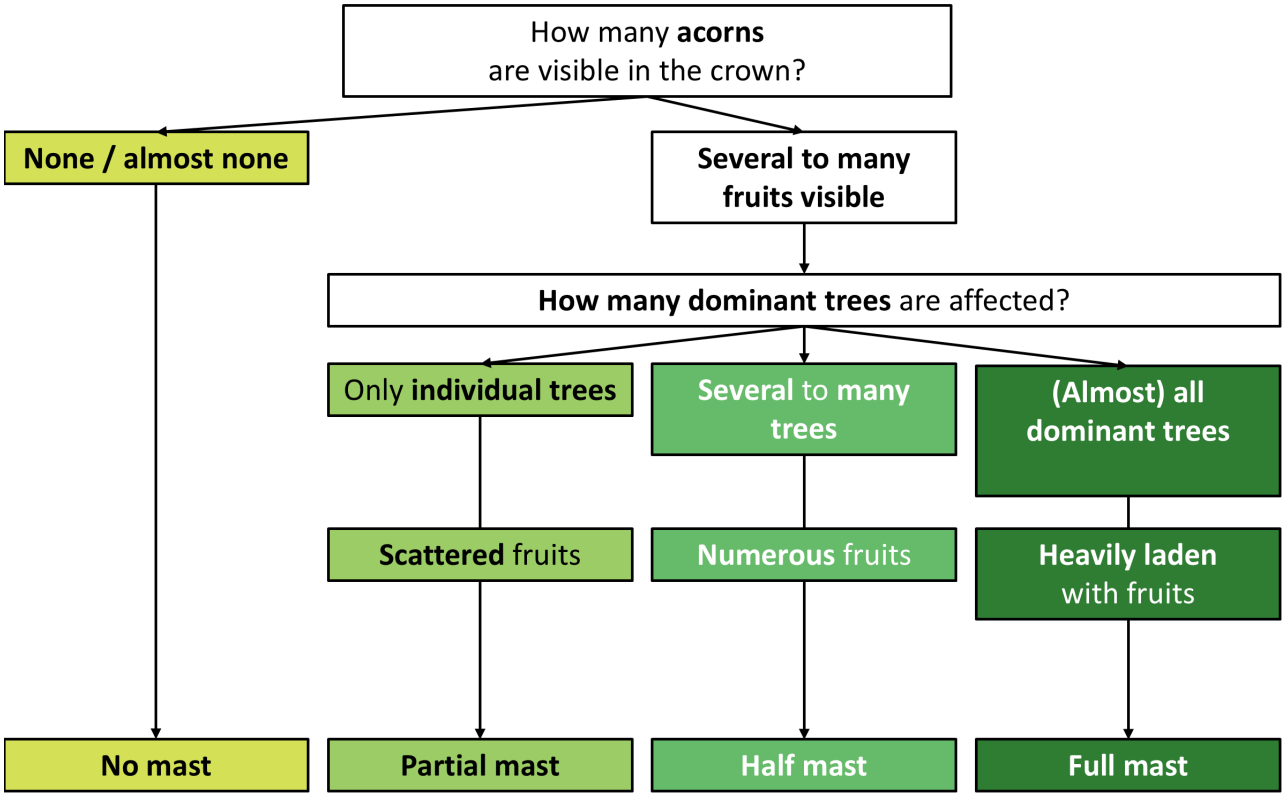
At our latitudes, oak mast occurs relatively frequently, about every 2 to 3 years[3]. Which factors trigger or prevent oak mast has not yet been fully resolved; relationships with climatic factors differ between regions[3]. Unlike beech and spruce, the amount of pollen does not appear to be a reliable indicator of subsequent seed production[4]. Owing to their high energy content[5], acorns are an important food source for many wild animals; up to 40 % of the fruits can be eaten before they germinate[6].

Mast assessment

Timing: end of September.

In sessile oak, it is difficult to distinguish empty from filled cupules before the seeds are ripe. Mast surveys should therefore be carried out as close as possible to seed fall.

Assessing the fruit load: Seed masting is a stand-level phenomenon. Wherever possible, several dominant, reproductively mature trees in a stand are assessed. The mast class describes the stand as a whole, not individual trees with particularly heavy or light fruiting. If the fruit load is uneven, choose the class that best characterises the stand as a whole. The intensity of oak mast can be estimated using the following key:



References

[1] Brändli UB (1996) Die häufigsten Waldbäume der Schweiz. Ber. Eidg. Forsch.anst. Wald Schnee Landsch. 342

[2] www.waldwissen.ch

[3] Wohlgemuth T, Nussbaumer A, Burkart A, Bollmann K (2016) Eichenmast und Wildschweine. Zürcher Wald 3/16: 28-30

[4] Kasprzyk I, Ortyl B, Dulska-Jeż A (2014) Relationships among weather parameters, airborne pollen and seed crops of Fagus and Quercus in Poland. Agricultural and Forest Meteorology 197: 111-122

[5] Kallman S (1991) Nutritive value of Swedish wild plants. Svensk Botanisk Tidskrift 85: 397-411

[6] Gurnell J (1993) Tree seed production and food conditions for rodents in an oak wood in southern England. Forestry 66: 291-315