European larch

Larix decidua Mill.* | *F: Mélèze d'Europe* | *I: Larice europeo* | *R: Larsch* | *E: European larch

General

European larch is a typical tree species of the Alps and a highly light-demanding pioneer species. In Switzerland, its main natural range lies in Valais, the mountain valleys of Ticino and Graubünden. Around three-quarters of larches grow above 1400 m a.s.l. Past forest use and the reforestation of former alpine pastures have considerably expanded its occurrence.

Flowering

Larch is monoecious, producing male and female flowers on the same tree. Flowering takes place in spring, usually shortly before or during the emergence of the needles. The upright female inflorescences are particularly conspicuous. They are initially bright pink to purplish red and, because of their appearance, are sometimes called “larch roses”. After pollination, the female flowers develop into cones within the same growing season. Conspicuous flowering can give a first indication of a possible mast year. However, heavy flowering does not necessarily lead to a correspondingly heavy cone crop: frost and cold, wet weather during flowering and early cone development can reduce fruit set.

Fruits

The young cones stand upright on the twigs. In summer, the current year's cones are still green and often glossy; drops of resin sometimes appear. During late summer and autumn they turn yellowish to brown as the seeds ripen. Old, empty cones can remain on the branches for many years. Once the new cones turn brown, they are therefore difficult to distinguish from those of previous years.

Masting behaviour

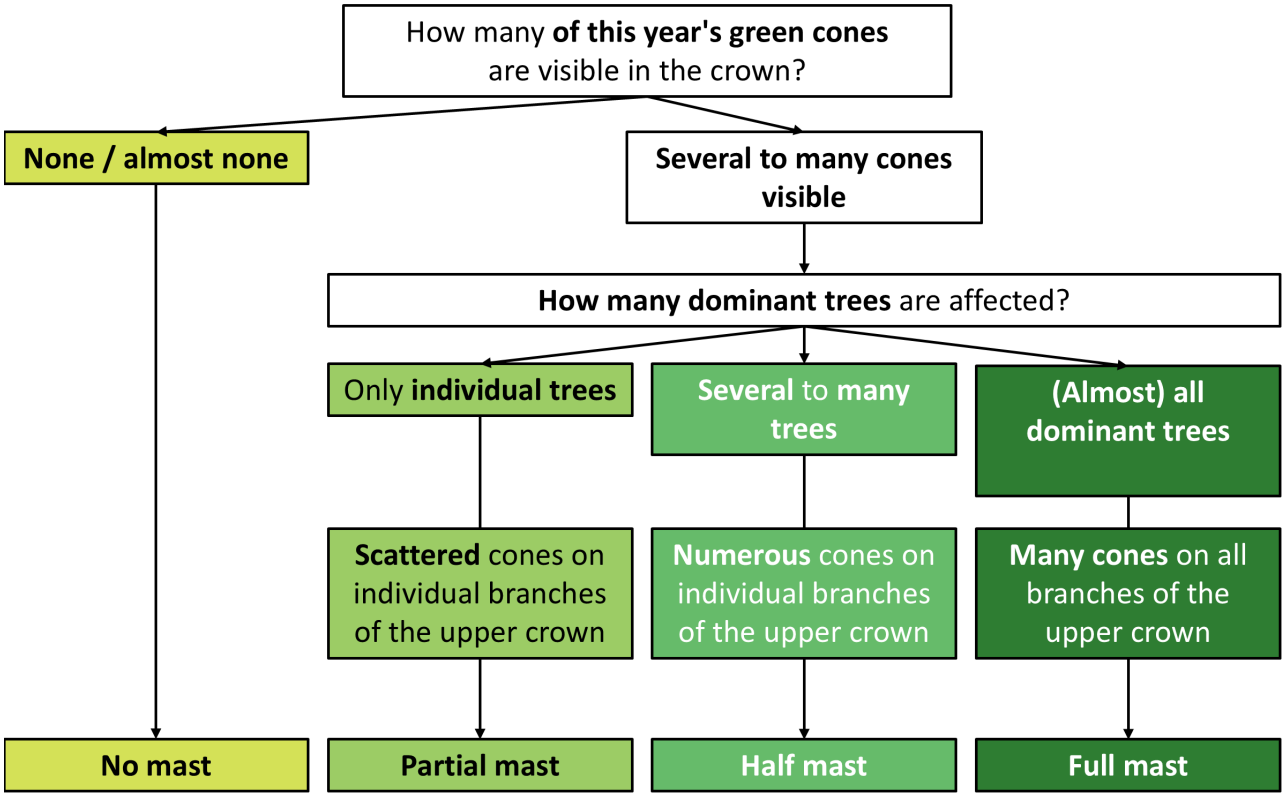
Cone production in larch varies greatly from year to year and can be synchronised over large areas. In mast years, cone production is markedly higher. Good seed years typically occur at intervals of several years. Weather influences both flower formation and subsequent fruit set.

Mast assessment

Timing: July to the end of August, at higher elevations possibly until early September.

For the standardised mast survey, the green cones of the current year are assessed. At this time they can be distinguished relatively reliably from the greyish-brown cones of previous years by their green colour and often glossy surface. The conspicuous pink to purplish-red female flowers can additionally be observed in spring as an early indicator. For the actual mast classification, however, the cones present in summer are more suitable, as losses can still occur between flowering and cone development. Since new and old cones are often present in the crown at the same time, the survey should be carried out before the new cones turn brown. Good light and visibility conditions and good binoculars are required, especially for tall trees.

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 larch mast can be estimated using the following key:


How many **of this year's green cones** are visible in the crown?
None / almost none
Several to many cones visible
How many dominant trees are affected?
Only **individual trees**
Several to **many trees**
(Almost) all dominant trees
Scattered cones on individual branches of the upper crown
Numerous cones on individual branches of the upper crown
Many cones on all branches of the upper crown
No mast
Partial mast
Half mast
Full mast