



## Late budding walnut varieties: an asset for temperate agroforestry systems?

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The last few years, walnut trees have become a popular choice for agroforestry systems because of their highly valued timber and fruits. Variety choice is often solely based on nut production properties of the tree, especially quantity and quality. The importance of budding, blooming and leafing period in temperate climates like Belgium is often overlooked. Most Southern European varieties are not suited for temperate climates. Until 15<sup>th</sup> of May, spring night frost is not unusual in the whole of Flanders. Bud breaking and blooming of every commonly used cultivar in France occurs well before half May and bud growth of nearly all commonly used cultivars used in Belgium (Broadview, Buccaneer, Coenen, Rita, NO.16, Plovdivski, Proslavski, Axel, Hansen,...) starts before the risk of frost is gone. In Flanders, on average you must take substantial losses (due to frost) into account once every 2 year when using very early cultivars (March) in temperate climates, once every 4 year using early cultivars (beginning of April), once every 10 years using middle cultivars (end of April – beginning of May) and once every 15 years using late developing (half May) cultivars. With very late cultivars (late May – early June) this risk is reduced to zero, allowing a more consistent nut production throughout the years (of great importance for marketing). On top of that, a late leafing period also has some interesting implications when used in alley cropping agroforestry systems. Intercrops, like winter wheat, get a maximum of light during most of their growth period as tree leaves are still absent. Drier growing conditions could also make the intercrops less vulnerable to fungal diseases. First observations also indicate that the late budding walnut varieties are less vulnerable to walnut blight and chestnut weevils. Hence, late budding varieties open up a lot of opportunities for smart combinations in alley cropping systems. Very late varieties are relatively rare, but they exist. About 2% of seedlings fall into this category. Optimal growing conditions and management are crucial for these varieties due

to the short growing season. Knowledge on them (nut production, pollination, resistance, shape,...) is however still limited and they are not yet commercially available, but more research on this promising topic is being initiated in Belgium by local walnut experts cooperating with research institutes.



Figure 1: Different varieties of walnut trees, with early variety on the left, middle variety in the middle and late variety on the right. Source: Eric Van de Plas.

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