



Walnut trees in agroforestry systems

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Professional walnut cultivation is rare in Flanders and almost all nuts are being imported, opening up a lot of perspectives for regionally produced walnuts. Walnut trees are known to be trees with a high marketing potential. Their nutritious nuts and high quality timber are highly valued and the market demand is correspondingly. Walnut timber reaches prices of over 500 euro per m³ and well managed trees in Flanders can produce up to 20 kg of dry nuts per tree per year. Nut consumption is strongly increasing in Belgium with families spending on average 30 euro per year on nuts in 2016. In 2012 this was only 19 euro. Import of walnuts has tripled in the same period. The quite robust walnut tree fit perfectly within an agroforestry system, not least because of the relatively low competition for light with other crops due to the more open crown, the late leafing and early leaf fall. When combining these trees in a Belgian agroforestry system with for example winter cereals, there is only a short period of overlap between the growing period of the crop and the leafing period of the tree, significantly reducing competition for light. Moreover, leaves of walnut trees are generally rich in nutrients and decompose quickly, speeding up nutrient cycling. Allelopathic effect of walnut trees on crops are known to be much less important in *Juglans regia* compared to *Juglans nigra*, where significant effects on crops like potatoes and cabbages are reported. The design and walnut variety selection in your system is highly depending on the goal of your trees: nuts or timber. To maximize the productivity of the trees, attention is needed for the preparation of the soil, the pruning and the choice of suited varieties. Reduced

problems with diseases like leaf blotch and walnut blight and an optimization of pollination followed by increased yields, can be the result of carefully choosing the most suited varieties for your system. Agroforestry systems with walnut can be linked to silvoarable (especially when trees are young) or to silvopasture (especially when trees become adult). Cherry trees have similar agroforestry relevant characteristics as walnut trees making them equally interesting in agroforestry systems and the same recommendations concerning agroforestry system design apply for them. Fruits and wood are highly valued and leafing period opens up opportunities in silvoarable systems. Moreover, leaves are considered very palatable for animals.



Figure 1: Walnut trees in combination with box cultivation in a Belgian agroforestry system. Source: Willem Van Colen, Consortium Agroforestry Flanders.

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