



Managing the tree row understorey in agroforestry systems

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In a silvoarable agroforestry field, "the tree row understorey" is defined as the area under the tree canopies (e.g. strips of land below the tree rows in alley cropping systems). It is generally recommended to maintain a width of at least 2 m for this zone in Belgium and it may be advisable to broaden the strip after a couple of years since establishment, for instance to harvest fruit more easily. In this zone it is often difficult to cultivate the main crop. Leaving this tree row understorey undisturbed can, however, result in the development of undesirable plants, which can then spread throughout the field in arable lands. Furthermore, uncontrolled growth of grasses and herbs can reduce tree growth. Although the management of this area often seems to be a challenge, a broad range of options exists, depending on the main objective of the trees, the type of understorey vegetation, the available machinery and the amount of time the farmer can spend. Possibilities include, amongst others, mowing before flowering which can also reduce the spread of weeds in the field. Alternatively, mulch materials could be used or the area can be kept free from vegetation. Although the latter option may be beneficial for e.g. nut harvesting or fertilizing activities, the additional ecological advantages of an understorey vegetation, such as the creation of food and a habitat for beneficial biodiversity (pollination and natural pest control), will be missing. On the other hand, sowing a mixture of understorey cover crops or flowers may suppress weed growth and simultaneously create habitat for beneficial biodiversity. The tree row understorey could also be an integral part of the

production system itself, e.g. by introducing short rotation coppice, berries, etc.



Figure 1: Understorey sown in with mix of grasses and planted with hazelnut shrubs in a Belgian agroforestry system. Source: Bert Reubens, Consortium Agroforestry Flanders.



Figure 2: Walnuts in agroforestry where understorey is kept free from vegetation. Source: Bert Reubens, Consortium Agroforestry Flanders.

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