# MAINTENANCE OF SHELTERBELTS AND WINDBREAKS

## WHAT ARE THE BASICS WORTH PAYING ATTENTION TO?

### BEST PRACTICE OBJECTIVE

**The main purpose is to improve the profitability by increasing the yield, whether it is the yield of the crop or the wood from the alleys. The aim of maintenance is to keep the soil surface loose in order to reduce evaporation and help water accumulation. Removing weeds that drain the soil (competition).**

### THE ESSENCE OF THE PRACTICE

Methods of maintaining:

Interventions should be carried out depending on the evolution of the shelterbelt, bearing in mind the snow catching function, i.e. restrained tree utilization. If the size of the seedlings no longer allows the use of machines, weed control must be done using a hand-held adapter. Management of rows is done manually if necessary. It must be taken to keep young forest strips and living plants free of weeds until closing, and to remedy shortcomings, especially on the windward edges and at the borders (can be replaced with container seedling at any time except winter frost and summer drought). To cover the gaps, only shade-tolerant seedlings can be used on the shaded side and only light-intensive seedlings can be used on the sunny side. Only main tree species are replaced, mixed / shrub species only if there are large patches of tree loss. For replanting, seedlings one size larger than those outside are used. The edges should only be cut back to the spring or to the grass after the risk of snow blizzard has passed. Only aggressive shrubbery of the outside lanes and poplars need to be cut back, latter up to 1/3 in the first year. Forest strips should be thinned to a lesser extent than economic forests. On the windward side, a plastic net can be stretched on the windward edge of poorly functioning woody strips due to the lack of undergrowth and edges, and provision must be made for the undergrowth and edges to be replaced as soon as possible. Snow Ploughs of proper

*Multi-storey shelterbelt between agricultural fields (Photo by Tibor Papp)*

width can be made suitable for agricultural purposes, weed less by mowing. For long-term maintenance, bands must be protected from interfering factors (wild, human). The most effective way to achieve this is by trenching, creating a dense shrub border as soon as possible. At the same time, trenching at the edge of the band significantly reduces the harmful competition of the surface root system.

## TOOLS AND MACHINERY

- Care (mowers, sickles, sprayer, harrow)
- Twisting (chainsaw)
- Harvesting (chainsaw, harvester)

*Breaking through in a shelterbelt protecting and separating a bicycle path around Lake Balaton, the popular tourist destination (Photo by Andrea Vityi)*

## PERIOD OF TIME AND PERIODICITY

Manual or mechanical soil treatment is usually performed only in the first year (3-4 times a year in the first two growing seasons, thereafter 2-3 times a year, at least until thinning). The number of soil treatments depends on the different site conditions. Chemical weed control: particularly recommended as an adjunct to mechanical soil treatment when needed, especially in areas covered with couch-grass (Agropyron repens). First treatment should be done within 3-4 days after installation, when inter row rotation is done to loosen the soil trampled during the installation. It is also advisable to harrow the soil of autumn plantings in the spring.

## ECONOMIC DATA

Shelterbelts are important for crop cultivation in many ways. On the one hand, shelterbelts with the right structure and direction, through mitigation of the wind, result in micro- and meso climatic changes that are beneficial to the crops and thus their yield is higher. Reduced air movement will result in less evaporation of plants and of soil, resulting in better water management, less energy to be used for water uptake and water loss to be compensated. At the same time, the distribution of precipitation will be more favorable, resulting in a more even distribution of the crop yield. Wind can cause mechanical damage, but with the help of tree lines, deflation can be suppressed,

preventing i) the loss of valuable topsoil and seed cover and ii) prevent windbreaking and "laying down" of wheat through wind pressure. As a result, the area provides better crop conditions and higher crop yields.

## PRACTICAL EXAMPLE

Valaha-tanya

The protective zone around the whole area is of mixed composition. In addition to the ecological benefits, diversity also serves to reduce the function of the buffer zone due to environmental and human impacts. Among the tree species, black locust is the main constituent of the stock while oak, beech, linden and flowering ash is used as associate tree species. Adequate protection (e.g. against chemicals drifting) is provided by multi-level vegetation; at the shrub level, the lilac and elder are typical. The lilac was chosen because of its relatively dense deciduous crown and the local tradition of having an organ everywhere along the roads.

The protective belt is multipurpose:

- Flowers and fruits of trees and bushes are used in syrups (black locust, elderberry).
- Fully meets the farmer's fuel needs. After shredding, the fuel is burned in a mass furnace.
- A variety of species provide a constant source of nutrients for bees and higher fruit production due to pollination.
- The green pruning material and a portion of the waste wood resulting from any wind damage will be used as complementary feed for animals in the farm.

Pollarded black locust forming a protective strip. (Photo: Balázs Kulcsár)

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Multipurpose use of hedgerows and windbreaks |
http://agroforestrynet.eu/wp-content/uploads/2019/10/20190804_factsheet_36_en_web.pdf

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