

Charter for vineyards with high biodiversity –

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The principal idea of the new methods for a quality orientated wine growing is aimed at a precise encouragement of biodiversity. Nevertheless, the idea only arises indirectly from that esthetical image of a vineyard where one can perceive the smell of flowers and where the grasshoppers are jumping around; it is rather based on the concept of understanding the vineyard as an ecosystem, whose flexible balance is formed by means of a complex network of a high biological diversity. The promotion of biodiversity is not the goal itself, but the path for the establishment of the vineyard as a stable ecosystem.

The main objective for the encouragement of biodiversity is to convert the vineyards into stable ecological systems and to increase the quality of the Terroir by means of a sustainable use of the natural forces.

Biodiversity of the soil and the soil-cover

1. The encouragement of biodiversity in the vineyard starts from the **reactivation of the soils**. For this purpose only bioactive manure is applied: compost, compost extracts, herb extracts, green fertilizer, red leaves capet, MRF. The uses of artificial manure, concentrated fertilizer, herbicides or liquid fertilizer are not allowed. An application of non-composted animal manure must equally be avoided.
2. Installation of a **constant green manure through leguminous plants** between the stocks. Recreation of a closed material flow and guaranteeing a nutritive supply of the stocks without the need of an additional artificial manure. The sowing of grand variety of leguminous plants provides a very high biological activity of the soil and improves the storage of water and nutrients as well as controlling the erosion.
3. Green soil cover all year round. The goal is to achieve a **plantation rich in species** with autochthonous flowers. At least 20% of the seeds mixture for the green manure must be composed of plants with flowers that attract insects. In total one must be able to find at least 50 types of wild plants on the vineyard.

Vertical Biodiversity

4. Plantation of **bushes at the end of the respective rows** where they do not interfere with the work cycles. The criteria for choosing the bushes is based on the potential attractiveness to butterflies and other insects, the nesting possibilities, the symbiosis of the roots and the use of their fruits. Autochthonous species will be planted.
5. Plantation of **hedges** as an intermediate line between the stocks. Depending on the local conditions, at least **2 x 20m** of closed hedges per hectare. The hedges are potent biodiversity hotspots and as aisles, ideal for a network connection of ecological areas. As natural barriers between the rows they hold back the epidemic spreading of harmful fungus.
6. **Plantation of fruit trees** for the improvement of the vertical diversity. Trees among plants of little height and in badly structured cultivation areas represent an enormous attraction for birds, insects and other groups of animals and encourage a repopulation of the ecological habitat. The trees that are outstanding in an aerial plankton also act as collectors of spores; an area from where the yeasts and other fungus can expand in the vineyard (diversity of natural yeasts for the wine making and as a competition for harmful fungus). At least one tree should be planted between the stocks for each hectare

of ground as well as several small trees on the appropriate boundaries with orientation NE-NW. The distance to the nearest tree should not be more than 50m from any point of the vineyard. Possible losses in the Harvest may be compensated by the harvest of fruits.

Structural Biodiversity

7. Ecological compensation areas rich in species of at least 2 x 20 m² for every hectare should be created as **diversity hotspots** both in the centre of the boundaries of the plots with stocks, where aromatic herbs and wild flowers grow (ruderal vegetation and flora, megaforbics). The distance to the nearest hotspot should not be more than 50m from any point of the vineyard.
8. Creation of **structural elements such as** stones and piles of woods for reptiles and insects. Installation of artificial nests for wild bees, insects and birds. The artificial nests may be integrated on the staking posts. Perches for birds of prey for a reduction of rodents. The pesticides used in the spraying must, therefore, be composed by harmless substances for bees and insects (renounce to chemical pesticides and sulphur)

Crop biodiversity

9. Cultivation of at least one secondary crop in the interstices of the main crop. This can be a vegetable such as tomatoes or pumpkins, a fruit such as raspberries or strawberries, a winter cereal such as rye and barley or aromatic herbs, planted or sown between the rows of vines. Also suitable are fruit bushes like chokeberry, sea buckthorn or sloe planted in lines between the vines, as are rows of fruit trees (vineyard peach, plum, almond, quince, etc.). Secondary crops also include bees, sheep, chickens, fish and other small farm animals. The areas earmarked for secondary crops must be large enough to ensure a proper economic return.

Genetic Diversity

10. Instead of grubbing the old vineyards and planting the surface again from scratch, the old stocks are replaced one for the other, choosing the plants by means of **massale selection** in the same vineyard and planting them as graft in the corresponding nurseries, therefore achieving a selection of varieties of multiple generations which adapts perfectly to the Terroir. The genetic diversity obtained, reduces the pressure of infection due to plagues, increases the hardiness before the dominant environmental conditions and improves the quality of the wine