

Biodiversity-promoting measures in grasland



Agroforestry - Integration of tree rows on pastureland

Description of the measure

If rows of trees are integrated into pasture areas, weather-related influences that negatively affect the animals' well-being can be mitigated. Especially in summer, the shade cast by rows of trees provides cooling. Suitable tree species are all fruit trees, willows and poplars, but also oaks, limes and maples. If the trees are to produce additional fodder, long-term planning is necessary.

Location

It is imperative to match the site characteristics and the site requirements of the tree species. No tree species should be selected that cannot tolerate the climatic conditions in open spaces (strong sunlight, heat, late frosts). If possible, only trees of regional origin should be used. Conifers (with the exception of junipers) and exotic tree species should be avoided as far as possible due to lack of functionality or lack of knowledge about their ecological effect.

Plantation

- Selection of suitable areas. Measure the tree strips. Select distances between tree strips that are suitable for the machine. If the soil is heavily compacted, deep ploughing may be necessary.
- Plant bare-root or baled seedlings. For willows and poplars, cuttings can be placed. Spacing within the row 4-8 m.
- Installation of resilient/permanent single tree protection against browsing by grazing livestock.

Management

- Regularly (at least annually) check the vitality of the trees. Replant trees that have failed.
- New plantings must be adequately protected from grazing livestock. For this purpose, e.g. electric fences or robust individual protection measures are necessary.
- During prolonged dry periods, the young trees/cuttings must be watered.
- Poplar and willow, in particular, provide additional foliage fodder by pruning the trunks (removing all branches to a certain height) or in pollarding (heading the trees at a certain height, which should be well above the grazing animals' area). Once this form of use is started, it should be continued on a rotational basis in order to stabilise the trees permanently.

Effects on biodiversity

- Agroforestry systems bring a significant and lasting increase in structural and habitat diversity
- With an appropriate choice of tree species (especially roses), a provision of flowers, nectar and pollen for wild bees, bumblebees and other insects is guaranteed
- Retreat for various animal species during agricultural work
- Field birds and small mammals can also use the tree strips as a habitat

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Other positive effects

- On the wooded strips, leaf fall and root growth lead to a substantial accumulation of humus and thus to an improvement of the soil.
- Agroforestry systems protect agricultural land from drought and wind erosion. They mitigate the consequences of climate change and relieve the strain on irrigation systems in the future.
- Fallen fruit as well as the foliage of trees provide an additional source of fodder for livestock that can mitigate or prevent diseases (uptake of various secondary plant compounds that positively influence parasitism and rumen fermentation).
- Provided that the quality of the animal products increases as a result of the measure, marketing at a premium is realistic.
- With appropriate tree species selection and care, further products can be produced in marketable quantities. The production of value timber is also realistic, provided that it is long-term.

Further recommendations

Pay attention to the origin of the planting material and, if possible, use only regional and certified plants.

Further reading

www.defaf.de

Sources

https://agroforst-info.de/wp-content/uploads/2021/12/2021_DeFAF_Broschuere_2-web.Aufl_.pdf

Coordinator

Further partners

