Technical Sheet for Solution Implementation

Implementation of Flower & Grass Strips

Thematic Area: Environmental sustainability.

Priority: How can biodiversity be improved while maintaining equine activities?

Need: Find solutions to reduce biodiversity loss.

Solution EU Number: BD-3.

Content of the Solution: Leave strips of meadow uncut and ungrazed or install flower strips to support biodiversity and ecosystem health.

Key Contacts:
- Advisors and biodiversity agencies

Case Study: Not available.

Reasons for Implementing this Solution

Leaving strips of meadow "uncut " (grass strips) or implement flower strips on equine farms enhances biodiversity by providing habitats for various species, including insects, birds, and small mammals, which supports natural pest control and ecosystem health. This practice also helps to preserve plant diversity and creates a more resilient and balanced environment.

Description of Solution Strategies

1. When mowing meadows or pastures, leave 2 meter wide strips (ideally 3 meters) of meadow uncut and ungrazed to allow the full phenological sequence to occur, supporting biodiversity and ecosystem health.

2. Implement flower strips of 3 meters minimum. A flower strip is a strip sown with annual, biennial and/or perennial species. It receives no fertilizer. As the number of floral species in the strip increases, so does the number of fauna species increases. They attract populations of insects (pollinators, beneficial insects, wild insects) such as butterflies, orthopterans (grasshoppers, crickets), but also wildlife, crickets), but also soil fauna (earthworms, ground beetles), along with insect-eating avifauna, toads and vipers.

This practice can be combined with "sympathetic mowing" (includes a set of practices that reduce the mechanical impact of mowing and harvesting on small wildlife : patterns of mowing, type of material, etc.) and "late mowing" practices (mow strips or plots after the flowering peaks of grassland species). You can find more information on these practices in the additional resources section.

Implementation of Flower & Grass Strips

Implementation Steps

1. Analysis of the best location for the strip : Analyze pastures and mowed areas to identify species-rich zones suitable for «all-season strips" to facilitate the movement of species (in the middle, at the edge of a plot, between 2 crops, along a hedge).

2. Consultation and Planning: Consult with employees or assistants about protecting these areas and plan appropriate fencing for pasture areas.

3. Implementation and Monitoring: Let the identified areas grow, monitor biodiversity, and document changes regularly. For the flower strips : Thin seedbed (increases chances of seed and limits competition from weeds), prefer broadcast sowing (3-4 g/m2) and a good soil/seed contact is necessary. For annual strip : best period of seeding : April or May and for perennial strips: september or october.
   - Choice of seeds :
     - LIST OF AUTHORIZED SPECIES are defined for each department (or region), and it is essential to consult them before buying your mix and ensure that there is no toxicity towards equines.
     - Pay attention to the adaptation to your climatic and environmental conditions, to have species with different characteristics, to avoid mixtures of more than 20 species to have good germination rate, to choose non-weedy plants of the neighboring crops, to have a good soil coverage, to have a spread out flowering to ensure resources and refuge available for a long period.

4. Adaptive Management and maintenaince of the strips : You can cut once a year (10-15cm of height with low speed 6-8km/h) the strip for a good management between september and march.
   - Maintain zones at different times (approximately 3 weeks apart to ensure continuity of resources). This maintenance once a year will help to preserve fauna and promote flora renewal (except where there is a risk of problematic weeds going to seed).
   - Pay attention: a short cut can weaken perennial vegetation or even create bare patches on the ground which will encourage the development of weeds (thistles, dock, etc.).
   - It is preferable to export the mowing or shredding products in order to maintain a wide diversitý diversity. Indeed, if waste remains on the ground, it enriches the environment with nitrogen, which favors only a few nitrophilous plant species to the detriment of others.

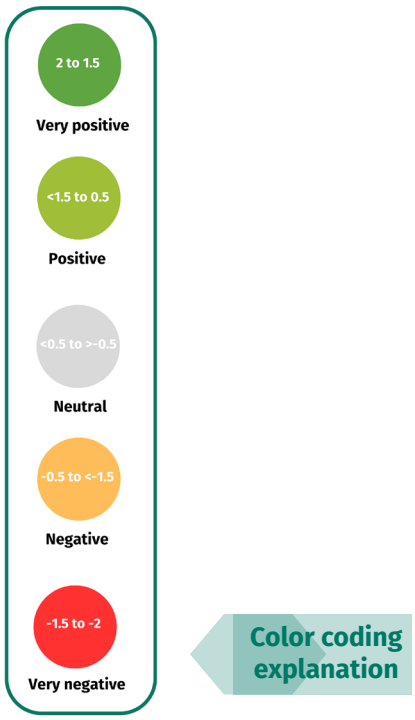
Re-evaluate the areas after a year and adjust management practices, including mowing, if necessary, to avoid competition shifts.

Implementation of Flower & Grass Strips

5. Community Engagement and Education: Engage local communities, install educational signage, and integrate with other sustainable practices to maximize ecological benefits.

How Will this Solution Impact the Performance of your Farm ?

TOPIC	SCORE
Social	0.50
Economics	0.50
Welfare	0.50
Health	0.25
Environmental	1.00
Land access and management	-0.50
Global	0.50



Socioeconomics: We observed positive social and economic scores. Implementing flower strips enhances the equine farm's environmental responsibility and public image, attracts biodiversity-conscious consumers and fosters community connections. While initial costs and maintenance require investment and labor, these efforts can qualify for subsidies, reducing financial strain and improving long-term profitability. Flower strips contribute to sustainability by improving soil health, promoting natural pest control, and reducing reliance on chemical inputs, which can lead to cost savings and a healthier working environment for staff. Although some land is repurposed, the ecological and marketing benefits ultimately strengthen the farm's overall performance.

Health & Welfare: This solution has little direct impact on health and welfare, but it can be assumed that a greater variety of plants would provide a healthier, eco-friendly environment. The improvement of biodiversity impacts directly and positively the spread of disease. Pay attention to good maintenance of strips to limit toxic plants.

Implementation of Flower & Grass Strips

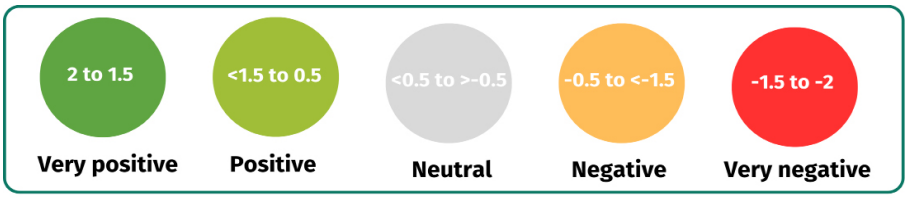
Environmental Sustainability: This solution has a positive impact on environmental sustainability performance. Flower strips enhance carbon sequestration through the growth of perennial plants and support the natural resilience of the farm's ecosystem, helping to adapt to climate change. The key aim of flower strips is to increase biodiversity by providing habitats for pollinators, beneficial insects, and small wildlife. This directly addresses the loss of biodiversity in agricultural areas. Riparian strips and flower strips help prevent soil erosion and run-off into water bodies, protecting water quality and improving the overall water management of the farm. However, the effect on grassland management and land access is negative as there is work to maintain well strips and avoid risk of potential contamination of lands by weeds or toxic plants and it also leads to a loss of valorized lands for pasture.

So globally, this solution can have a positive impact on the performance of your farm.

Implementation of Flower & Grass Strips

How Will this Solution Impact the Resilience of your Farm?

TOPIC	SCORE
Social	0.21
Economics	-0.33
Welfare	0.08
Health	-0.08
Environmental	0.61
Land access and management	0.33
Global	0.16



Socioeconomics: The neutral scores observed could be explained by a balance between positive aspects (farm image) and negative ones (workload). Flower strips enhance the environmental sustainability and public image of the farm, promote biodiversity and respond to consumer concerns about sustainability, especially in times of social or economic crisis. However, inflation and reduced budgets for labor, communication, or general farm maintenance could challenge their implementation and maintenance, especially for tasks such as weeding or reseeding. So, this solution will have a neutral impact on socioeconomic performance of the farm facing external challenges.

Health & Welfare: This solution could have a minimal effect on resilience from health and welfare point of view, but the potential effect of a more natural plant composition that promotes biodiversity could result in a healthier environment for horses. Pay attention to ticks near strips which can affect the health.

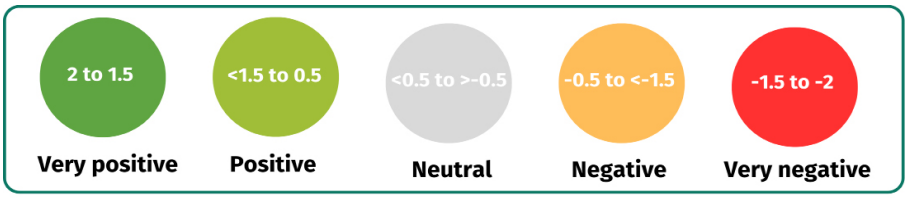
Implementation of Flower & Grass Strips

Environmental Sustainability: This solution will have a positive effect on environmental performance of the farm facing external challenges. Indeed, this solution can contribute to resilience, helping to protect ecosystems from the effects of extreme weather events. Flower strips help reduce soil erosion and improve water retention, which can support freshwater quality during extreme weather events. Biodiversity will be improved also even if the farm faced inflation or pandemic or new legislation etc. By the other hand, pasture management and land access performance can be negatively impacted as flower/uncut meadow strips can increase land pressure if the access to grasslands is limited.

So, this solution will have a neutral impact on farm performance facing external challenges.

How Can this Solution Help your Farm Cope with Specific External Challenges to Become More Resilient?

CHALLENGES	SCORE
Inflation	-0.04
Pandemic	0.17
High welfare standards	0.25
High infectious diseases	0.21
Extreme weather event	0.25
Loss or limited access to grassland	0.13



Implementation of Flower & Grass Strips

How Can this Solution Help your Farm Cope with Specific External Challenges to Become More Resilient?

Inflation & Social Crises: While flower strips have a minimal impact on labor, their establishment and maintenance can strain resources during periods of financial pressure, such as pandemics or inflationary spikes. Despite these challenges, their long-term environmental and reputational benefits can offset short-term economic constraints and contribute to farm resilience and outreach. Again, neutral scores could reflect a balance between these negative and positive aspects.

Welfare & Diseases: This solution will not impact the global performance of the farm facing health or welfare challenges.

Climate Change & Access to Land: This solution has a neutral effect on resilience if the farm experiences abnormally high or low temperatures, drought or excessive rainfall, or limited access to grassland.

Implementation of Flower & Grass Strips

Cost-Benefit Analysis

Costs

Socioeconomics:

- Flower strips require weeding, possible reseeding, and periodic management.
- May slightly reduce overall productivity as labor and part of land are allocated to maintaining the strips
- Opportunity Costs:
  - By dedicating land to flower strips, less land is available for productive agricultural use, which could result in reduced grazing or crop production.
  - The equine farmer primarily bears these costs, though the local community might also experience reduced farm productivity.
- Expect to pay between €10 and €30 for the cost depends mainly on the seeds used on the seeds used, with prices per kg (10-60€/kg). The technical itinerary represents a small part of the cost. Maintenance costs arevery low (1 mowing/year), or even zero if the strip is permanent.

Health & Welfare:

- Risk of ticks and toxic plants.
- However, if flower strips limit available grazing land, there could be indirect effects on the quality or availability of forage and access to grassland
- .....
- Accidents in the areas of water bodies.

Benefits

- Flower strips can improve the farm's social outreach by demonstrating a commitment to sustainability, making the farm more attractive to customers, partners, and the local community.
- Enhances farm image and creates marketing advantages.
- Flower strips may qualify for government subsidies or biodiversity initiatives, offsetting some of the initial investment and ongoing maintenance costs.
- The farm may see long-term benefits from improved soil health, natural pest control, and reduced reliance on chemical inputs.
- Farmer benefits from these cost savings and ecological improvements over time.

- By improving biodiversity and ecosystem resilience, flower strips create a healthier farm environment, which may indirectly support better equine welfare.
- Flower strips support natural pest control, reducing the need for chemical treatments on the farm, what creates a healthier environment for horses.

Implementation of Flower & Grass Strips

Cost-Benefit Analysis

Costs

Environmental Sustainability :

- Flower strips require time and effort to manage properly. Neglecting them could lead to invasive/toxic species or poorly functioning ecosystems.

Cooperation between farms:

- Pay attention to choose non-weedy plants of the neighboring crops for example

Benefits

- Enhances local ecosystem health and regional biodiversity, contributing to long-term environmental sustainability.
- Flower strips provide habitats for pollinators, insects, and wildlife, contributing to halting biodiversity loss and supporting overall ecosystem health.
- Nature and local ecosystems experience significant benefits from increased biodiversity and improved habitat quality.
- By reducing erosion and improving soil retention, flower strips contribute to better water management and soil fertility.
- Equine farmers and nature benefit from improved soil and water systems, leading to long-term environmental and financial sustainability.
- Enhances biodiversity and ecosystem health: Flower strips support diverse arthropod assemblages, increase functional diversity of invertebrates, improve soil and water systems, boost butterfly density and behavior, and significantly increase spider populations.

- Encourages collaboration and shared best practices among farmers, fostering a community approach to biodiversity and sustainable farming.

Additional Resources

Websites

- https://www.ceh.ac.uk/news-and-media/blogs/wildflowers-field-strips
- https://www.mdpi.com/2077-0472/12/9/1470
- https://www.nrem.iastate.edu/research/STRIPS/content/what-are-prairie-strips
- https://www.swcs.org/resources/conservation-media-library/prairie-strip-facts
- https://www.conservationevidence.com/actions/3966#:~:text=Rotational%20mowing%20resembles%20many%20traditional,and%20moths%20(Morris%202000)

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Implementation of Flower & Grass Strips

Additional Resources

Publications

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Implementation of Flower & Grass Strips

Annex

Ideas to Ideas to Animate a Workshop about the Solution of Leaving Strips of Meadow Uncut

Preparation

- Ask a trader/advisor/company specialized in biodiversity or sustainable farming to sponsor the workshop.
- Find a model farm where the workshop can take place.
- Complete the required tasks and let the participants take part in these demonstration tasks so that they can get to know the practice.
- Proposed Structure for the Workshop on Development and Maintenance of Waterbodies on Horse Stables.

Proposed Structure for the Workshop on "Leaving Strips of Meadow Uncut" on Horse Farms

1. Introduction to Leaving Strips of Meadow Uncut

- What is the practice of leaving strips of meadow uncut? What is it good for?
- Key features and components of this practice (e.g., biodiversity benefits, ecological impact).
- Types of uncut meadow strips which are available on the market (e.g., wildflower strips, prairie strips).

2. Benefits of Leaving Strips of Meadow Uncut in Horse Stables

- Enhances biodiversity and ecosystem health: Supports diverse arthropod assemblages, increases functional diversity of invertebrates, improves soil and water systems, boosts butterfly density and behavior, and significantly increases spider populations.
- If there are side products of fruits and plants which need pollinating, creating these meadow strips can enhance productivity considering the pollination, also is of great use for pest control eservoirs as efficient means to prevent grassland from floods and mudding.

3. Practical Applications on Horse Farms

- Provides habitats for pollinators, insects, and wildlife, contributing to halting biodiversity loss and supporting overall ecosystem health.

4. How to Choose the Most Suitable Approach

- Evaluation of the needs of the farm.
- Assessment of the structural requirements like fences.
- Potential Area comparison/ assesment.

5. Case Studies and Real-World Examples

- Examples of equine farms or equestrian centres already operating on uncut meadow strips.
- Discussion of how they have integrated this practice into their farm operations.
- Lessons learned and tips from equine farmers who have implemented this solution.

6. Cost Analysis and Return on Investment (ROI)
- Initial cost of establishing uncut meadow strips vs. Potential Agricultural Fundings.
- How to calculate ROI based on farm size and workload.

7. Q&A Session
- Open floor for participants to ask questions about specific concerns or experiences.
- Address any uncertainties regarding the effectiveness or cost of uncut meadow strips.

8. Wrap-Up and Resources
- Summary of key points covered in the workshop.
- Additional resources for further learning (websites, suppliers, online communities).