



## Implementation and maintenance of field margins

<b>Goal</b>	Provide species-rich habitats and foraging sites
<b>Target group</b>	<p>All farms of any production type can apply this measure.</p> <p>In case that the farmer does not own the field margin, he needs the confirmation of the landowner.</p>
<b>Description of the measure</b>	<ul style="list-style-type: none"> <li>▪ <b>Margin types:</b> field margins can be very diverse, beginning with sites with natural regeneration (NR); grass or wildflower sown, pollen and nectar mix, wild bird seed mix, annual set-aside or conservation of the headland. Longer term and less disturbed field margins, such as sites with natural regeneration or wildflower sown field margins, appear to provide the most consistent environmental benefit.</li> <li>▪ It's advisable to allow natural regeneration or to focus on the conservation of the headland, and if no diverse flora establishes itself, a wildflower mixture should be sown in.</li> <li>▪ <b>Margin widths:</b> different margin widths are specified for different purposes e.g. spray drift vs. runoff of pesticides vs. provision of habitat. However, field margins should be at least 3 m wide, but may extend on up to 10m. When implementing field margins the farmers have also to think about the possibility of implementing 3m width margins of multiple fields and thus creating a biotope network or a 10 m width area implemented within only one field.</li> </ul> <p><u>Sites with poor soils:</u> In case there is a potential seed pool of wild flora in the surrounding which can establish itself, no sowing is required. If, however, no diverse flora establishes, a wild flower mixture should be sown in.</p> <p><u>Other sites:</u> Sowing of flower-rich seed mixtures (autochthon!) is advisable to establish diverse field margins.</p> <p><u>What to do in case of sowing?</u></p> <p>Composition of the mixture:</p> <ul style="list-style-type: none"> <li>▪ Perennials are preferred because of their higher species- and structural diversity, i.e. different heights and flowering dates/durations.</li> <li>▪ From the conservancy point of view, flowering mixtures must be autochthon, i.e. that species are indigenous to a given region or ecosystem.</li> <li>▪ The more plant species included in the mixture, the better it is for insects such as wild bees.</li> <li>▪ Goal is a rather extended flowering period with a high structural diversity, which can be achieved by including into the seed mixture plant species flowering at different times of the season.</li> <li>▪ Selection of species with high ability to compete with problem weeds.</li> </ul>

	<p><u>How to sow?</u></p> <ul style="list-style-type: none"> <li>▪ Before sowing, a fine-grained but consolidated seeding plot needs to be prepared.</li> <li>▪ For sowing a combination seed drill, seed drill or fertilizer spreader can be used.</li> <li>▪ Cultivations must not be sown too dense in order to allow soil organisms to move easily and establish a wild field flora.</li> <li>▪ Rolling of the seeds improves closure of the soil and leads to an improved germination.</li> </ul> <p><u>Management:</u></p> <ul style="list-style-type: none"> <li>▪ No use of pesticides or fertilizer.</li> <li>▪ Annual mixtures are not mown at all.</li> <li>▪ Biannual mixtures are mown not more than once.</li> <li>▪ Perennial mixtures: mowing rather late after flowering if necessary.</li> <li>▪ If some of the weeds become dominant punctual manual mowing or weeding is important.</li> <li>▪ It is important that flower strips get only mown or mulched partly instead of all in once, e.g. 10–50 % could be left aside for insects.</li> <li>▪ Cutting height should be as high as possible, at least 7–10 cm from the ground.</li> <li>▪ Avoid cutting when the soil is moist, to prevent further compaction</li> <li>▪ Mulch should be removed in order to avoid compaction of turf which makes it difficult for wild herbs to germinate.</li> </ul>
Suitable sites	<ul style="list-style-type: none"> <li>▪ Field and path margins, (in organic farming they can be used to respect the mandatory 3 m. of separation with conventional fields)</li> <li>▪ Ideally close to watercourses or -bodies (i.e in order to respect the mandatory 5 m distance for applications of phytosanitary products)</li> <li>▪ Location of field margins is particularly important in relation to the reduction of runoff and spray drift</li> </ul>
How a good implementation looks like	<ul style="list-style-type: none"> <li>▪ Structural diversity of the strips and plots (not a sole grass community)</li> <li>▪ Mown in September after flowering</li> <li>▪ After mowing, 10–50 % of the area must remain uncut</li> </ul>
Effects on biodiversity (ecosystems, species, soil biodiversity)	 <p>Promotion of <b>wild herbs</b> (only in the non-sawn case)</p>
	 <p>Margins provide <b>protection</b> and <b>refuge</b> for insects, hare and partridges during agricultural work on the field.</p> <p>Margins along fields and paths are <b>habitats</b> and wintering grounds for many insects. Useful animals such as ichneumonids, forest bees, flower flies among others are thereby promoted. Birds such as red-backed shrike, brown linnet and partridge have a forage ground in these structures. Margins also serve as step stones and <b>connect open countries</b> for butterflies, grasshoppers and other insects.</p>

	Field margins are used for foraging, nesting, feeding, as shelter or for migration and movement by various species.
<b>Other positive effects/benefit for the farmer</b>	<ul style="list-style-type: none"> <li>Field margins also have the potential to provide additional agronomic benefits for the crops which they surround by providing ecosystem services in the form of pollination or pest control</li> <li>Increased density of pollinators. An increase of yields in crops dependent on pollinators i.e. fruit trees, legumes and rapeseed</li> <li>General increase of beneficial organisms reduce the need of pesticides: many predators feeding on insects hunt on the field within a radius of 30 m from their retreatment area.</li> <li>Also, buffers can help prevent soil erosion and the transfer of agricultural pollutants from cropped areas to non-cropped areas, particularly aquatic habitats. This may in turn benefit biodiversity in off- crop areas and improve water quality.</li> </ul>
<b>Indicator/key data</b>	<ul style="list-style-type: none"> <li>Size in ha</li> <li>Minimum width of 3 m</li> </ul>
<b>Risk and further recommendations</b>	<ul style="list-style-type: none"> <li>On sites with poor soils, there may be a conflict with rare wild herb species, which often settle on field margins. Before sowing, the location should therefore be checked for its occurrence. Be aware of problem weeds which may establish on those areas likewise. Those weeds can be combated manually or with a backpack sprayer.</li> <li>There is a risk of advancing grass and weed domination instead of flowering aspects, especially in case of sowing perennial seed mixtures. Additional mowing can help to reduce the weed pressure. Problematic weeds like thistles should be mown separately with a brushcutter to avoid its seeding.</li> <li>Important to know: Optical and ecological occurrence of flowering areas can be quite different. A certain amount of grass is tolerable</li> </ul>
<b>Timeframe</b> (When to start a measure and anticipated time for implementation)	<p>For the Mediterranean region, the time of sowing is dependent on favourable weather conditions for germination, which is in general in autumn. In temperate regions, sowing periods depend on the seed mixtures:</p> <p><b>Perennial</b> flower mixtures should be sown in April/May or September. The autumn sowing provides colorful flowers already in spring of the next year. Duration is recommended on about 5 years.</p> <p><b>Biennial</b> mixtures should be sown beginning from April (in case there is no risk of problem weeds germinating in summer) or later in July until September.</p> <p><b>Annual</b> cultivations should be sown in April or May.</p> <p>Mowing should take place as late as possible in the year in order to allow also late-flowering plants to ripen fruits (late September).</p>

<b>Additional special resources/equipment/skills needed</b>	For the suitable autochthon seeding material regional nature conservation NGO's, agencies or foundations can be asked for contacts to local suppliers. In Germany, e.g., seeding material should refer to VWW-Regiosaaten® or RegioZert®.
<b>References</b>	<ul style="list-style-type: none"> <li>▪ <a href="http://www.landwirtschaft-artenvielfalt.de">www.landwirtschaft-artenvielfalt.de</a></li> <li>▪ Promotion of biodiversity in fruit plantations – NABU; REWE and Lake Constance Foundation, 2015</li> <li>▪ <a href="http://www.ecpa.eu/reports_infographics/multifunctional-role-field-margins-arable-farming">www.ecpa.eu/reports_infographics/multifunctional-role-field-margins-arable-farming</a></li> <li>▪ Stiftung Rheinische Kulturlandschaft, DBU: Abschlussbericht Maßnahmen- und Artensteckbriefe zur Förderung der Vielfalt typischer Arten und Lebensräume der Agrarlandschaften, 2018</li> </ul>

## Further information: [Knowledge Pool](#)

This Action Fact Sheet belongs to the training package for advisors of standard organisations and companies and was developed within the project LIFE Food & Biodiversity (Biodiversity in Standards and Labels of for the Food Industry). The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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