



The Soil Re-Union Science for Healthy Soils

4th International and
16th National Congress
of the Serbian Society
of Soil Science



Serbian
Society of
Soil Science



THE BOOK OF ABSTRACTS

Vrdnik, Fruške Terme, Serbia,
20-23. October 2025

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 congress@sdpz.co.rs



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FLOWER STRIPS – A NEW ELEMENT OF AGRICULTURAL LANDSCAPES

Vladan Ugrenović¹, Vladimir Filipović², Milan Pleččaš³, Marko Matić¹,
Nenad Prekop¹, Vojislav Lazović¹, Srđan Šeremešić⁴

¹Institute for Soil Science; Belgrade, Republic of Serbia

²Institute for Multidisciplinary Research, University of Belgrade;
Belgrade, Republic of Serbia

³Faculty of Biology, University of Belgrade; Belgrade, Republic of Serbia

⁴Faculty of Agriculture, University of Novi Sad; Novi Sad, Republic of
Serbia

Corresponding author: vladan.ugrenovic@gmail.com

ABSTRACT

Modern agricultural landscapes are highly complex multifunctional systems. They are not only used for food and energy production, but are also expected to provide various ecosystem services within the agroecosystems. Industrial agriculture, which is practised on large areas, has led to increased productivity, but due to its high intensity, it is also responsible for numerous environmental problems. The loss and fragmentation of natural habitats, along with the widespread use of pesticides and synthetic fertilisers have led to a loss of biodiversity. In recent years, there has been a dramatic decline in the abundance and diversity of all groups of wild insect pollinators, including wild bees, hoverflies, butterflies and moths, with many pollinator species being threatened with extinction (COM 2018, 395). In addition, agricultural intensification has led to soil degradation, which can be regarded as a loss of a non-renewable resource, particularly through the depletion of soil organic carbon (FAO and ITPS, 2015).

The introduction of flower strips into agricultural landscapes on small areas (1%), can contribute to the creation of new habitats that support existing wild pollinators and promote increases in their abundance and diversity at both local and landscape scales. The results of the EcoStack project recommend six species for flower mixtures in Serbia: *Centaurea cyanus*, *Coriandrum sativum*, *Cynara scolymus*, *Daucus carota*, *Phacelia tanacetifolia* and *Sinapis alba*.

This practice has also been shown to benefit other beneficial organisms, such as predatory insects, pest parasitoids, birds, and plants – leading to greater species richness and abundance. Such an approach can

enhance biodiversity and overall ecosystem functioning, including crop pollination, suppression of pests and invasive weed populations, improved soil fertility through erosion control, and climate change mitigation via carbon sequestration in soils by conserving both below- and above-ground biomass. In this context, flower strips should be regarded as a key element of agricultural landscapes within sustainable farming systems such as conservative, organic, regenerative, and biodynamic agriculture.

Keywords: agricultural landscape, ecosystem services, flower strips

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ORCID

Vladan Ugrenović [<https://orcid.org/0000-0001-6642-8235>]
Vladimir Filipović [<https://orcid.org/0000-0002-7081-8217>]
Milan Plečaš [<https://orcid.org/0000-0001-5551-8550>]
Marko Matić [<https://orcid.org/0009-0005-0369-2553>]
Nenad Prekop [<https://orcid.org/0009-0001-8292-5095>]
Vojislav Lazović [<https://orcid.org/0000-0003-3926-118X>]
Srđan Šeremešić [<https://orcid.org/0000-0003-4467-9601>]



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