EFFECT OF COVER CROPS ON THE LEVEL OF SOIL MOISTURE IN A HUNGARIAN VINEYARD

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IMPROVING INPUTS FOR ORGANIC FARMING

ÖMKi
Ökológiai Mezőgazdasági Kutatóintézet
Research Institute of Organic Agriculture | Forschungsinstitut für biologischen Landbau

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ICOAS 2018

Floor management technologies in the Hungarian vineyards

Mechanical cultivation →

← „Green” inter-rows

Soil covering (e.g. straw) →

2012: ON-FARM EXPERIMENT FOR DEVELOPING SPECIES-RICH SEED MIXTURES FOR HUNGARIAN VINEYARDS

Why do we need cover crops?

- **Climate change – heavy rainstorms**
- **Steep slope plantation**
- **Avoid soil degradation**
- **Save the soil structure**
- **Allows movement for workers**

and machines, near all weather conditions

Species rich inter-rows with native species, „living vineyard”

Requirements for the cover crops

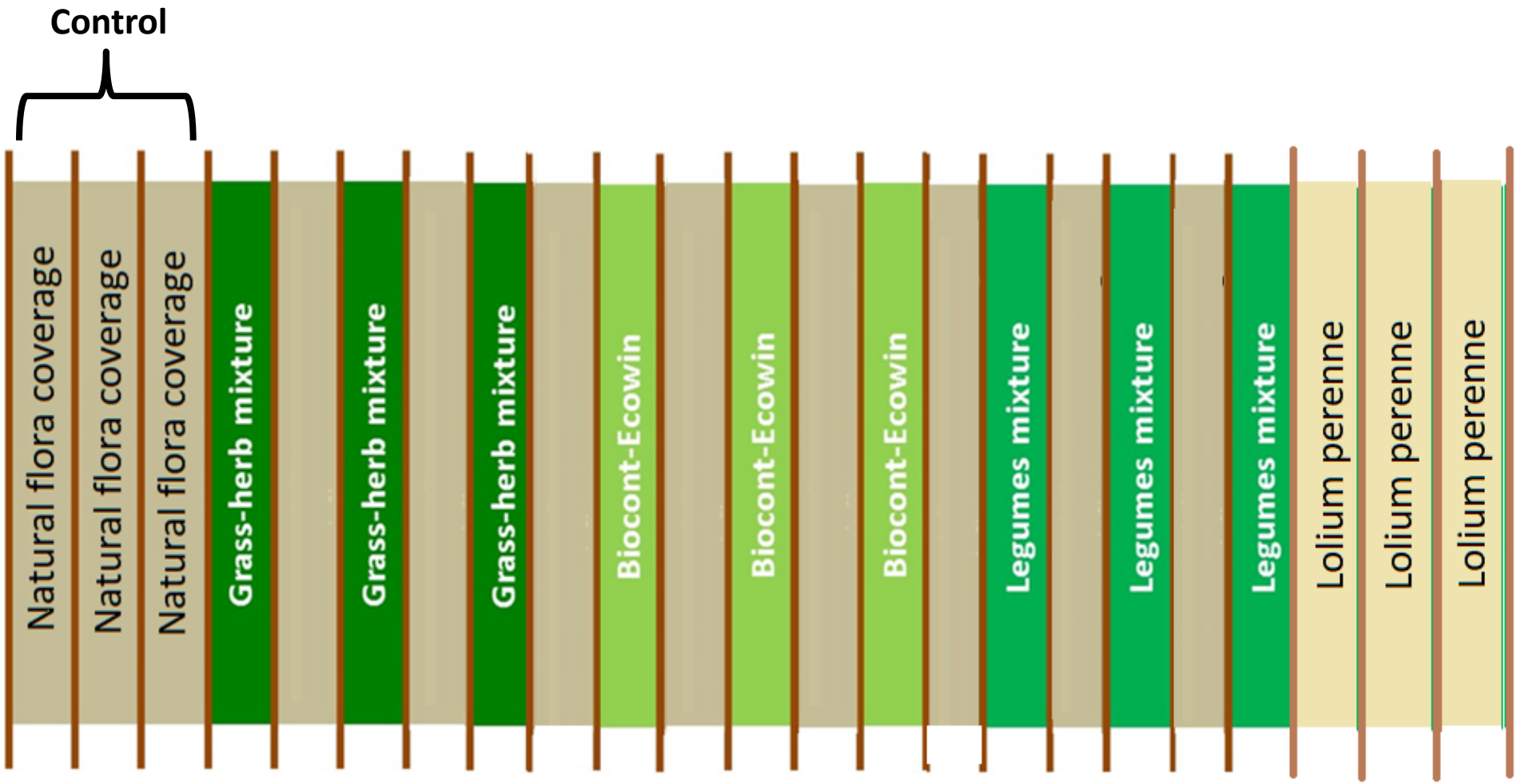
- Should not compete significantly with the grapevines
- The botanically optimal mixture contains local species from local provenance
- Available, not too expensive

Content of the mixtures (%)

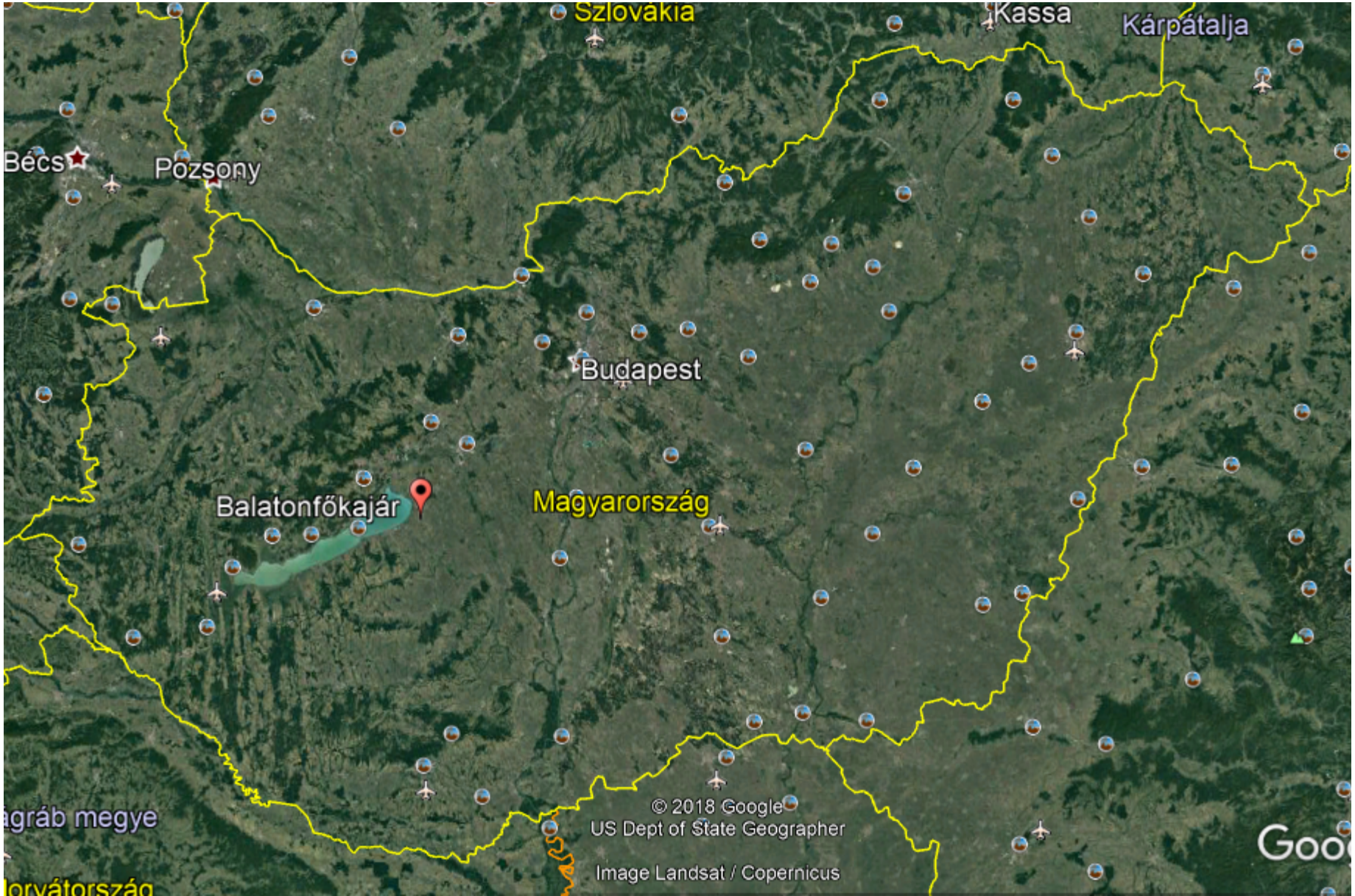
Mixtures	Biocont-Ecowin	Legumes mixture	Grass-herb mixture
Centaurea cyanus			1,0
Achillea cf. millefolium			1,5
Sanguisorba minor	0,5		
Linum perenne			1,5
Phacelia tanacetifolia	2,7		
Trifolium repens	8,1	15,0	5,0
Medicago lupulina	16,2	15,0	10,0
Silene vulgaris			1,5
Centaurea jacea			1,0
Plantago lanceolata	1,1	5,0	10,0
Salvia nemorosa			1,5
Daucus sp.	1,6		
Sinapis alba	5,4		
Fagopyrum esculentum	8,1		
Festuca rupicola			30,0
Lotus corniculatus	2,7	15,0	10,0
Onobrychis viciifolia	37,3	15,0	
Coronilla varia		10,0	10,0
Galium verum			1,5
Vicia sativa var. fuliginosa	16,2	10,0	10,0
Trifolium pratense		15,0	5,0
Species (n)	**11**	**8**	**15**

Stefán Tibor

On-farm experimental setup of species-rich cover crop mixtures at the Feind Winery

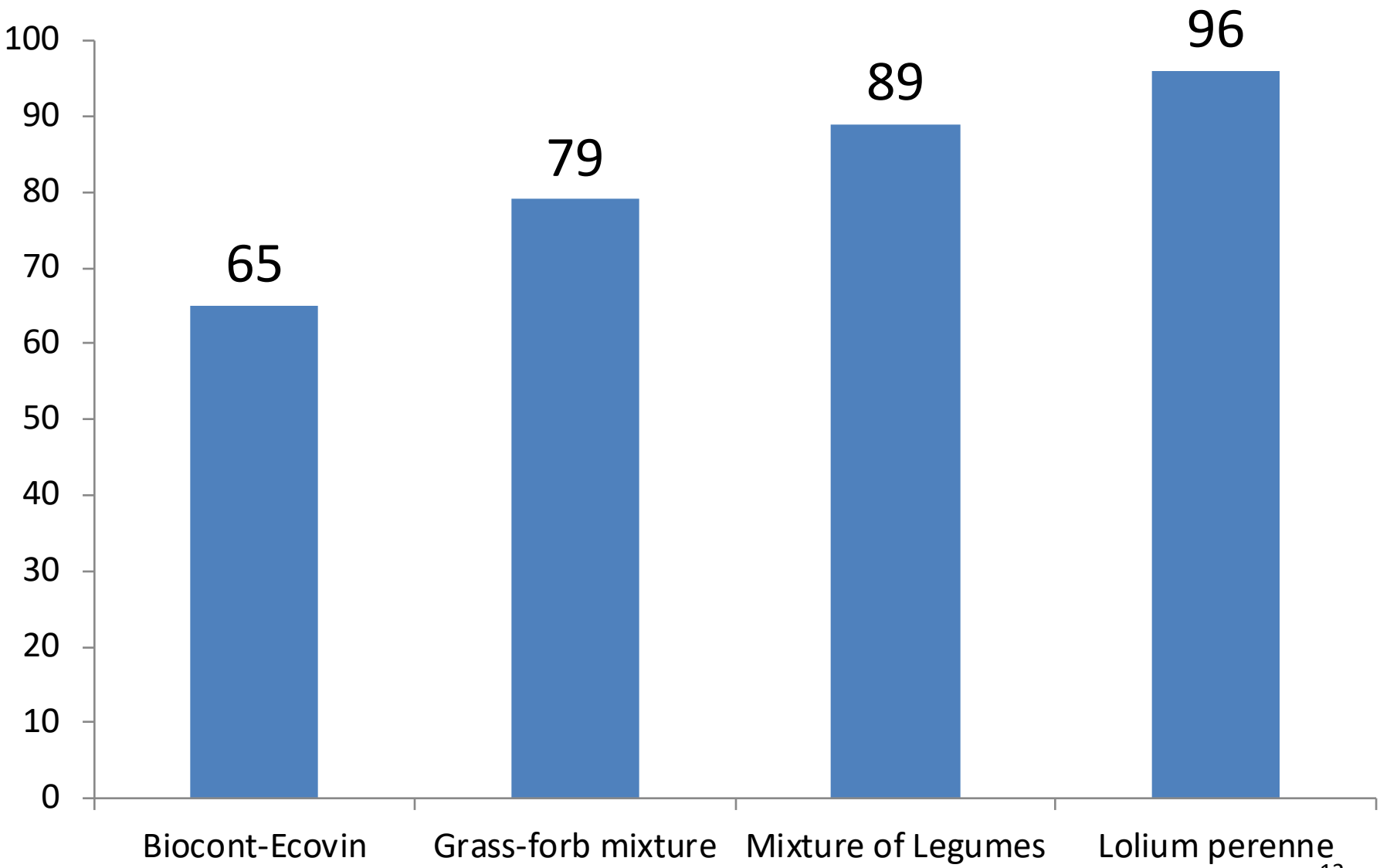


Soil moisture measurements at the Feind Winery, Balatonfőkajár (2015-2017)



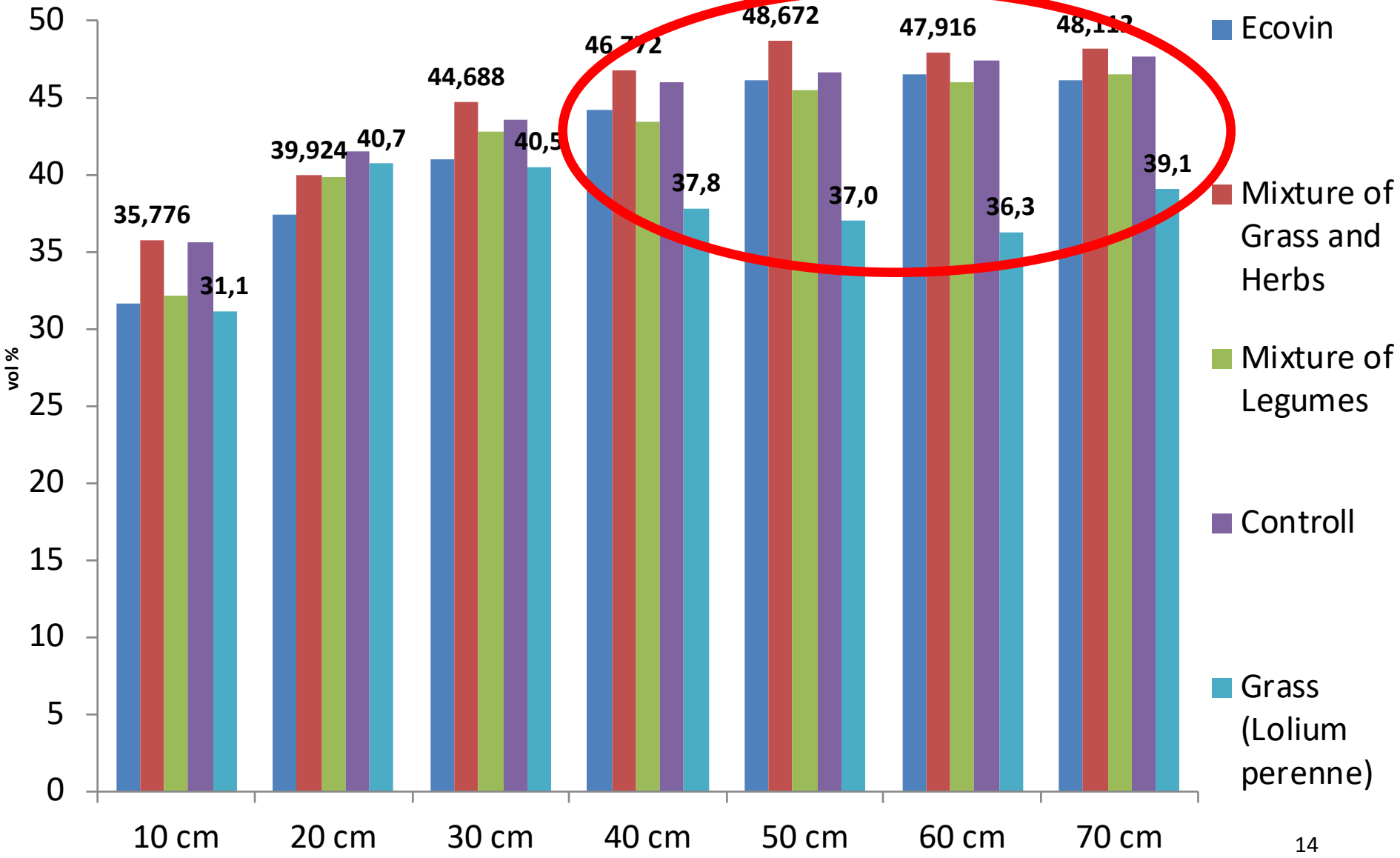
Botanical survey

Rate of the sown species in 2015 (%) in a three years old inter-row coverage



2015-2017: soil moisture measurements (vol%)

Averaged soil moisture of April and June (Balatonfőkajár, 2015)



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Lolium perenne

Species-rich mixture

UNDER-VINE

Under-vine / Medicago lupulina, Lotus corniculatus, Trifolium repens, Coronilla varia

Summary

- 2012: need for mixture(s) for Hungarian conditions
- On-farm research on seven wine regions of Hungary
- Native, perennial species (legumes and *Plantago lanceolata*)
- Technology without water concurence
- Should provide a coverage for 3-6 years
- Available, not too expensive

ÖMKi seed mixture: native, perennial plants

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Next steps from 2019:

seaching for options instead of copper

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Thank you for your attention!

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