

Workshop 'Innovative arable crop protection – using pesticides sustainably'

Amsterdam, the Netherlands
19-21 April 2023



Funded by
the European Union

Pesticide reduction by means of customised technology

Josef Ceijka | Czech Republic

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Sustainable and innovative agriculture

Josef Čejka / Agricultural cooperative
Dolní Újezd



#EUCAPNetwork
#SustainableCropProtection
#arablefarming



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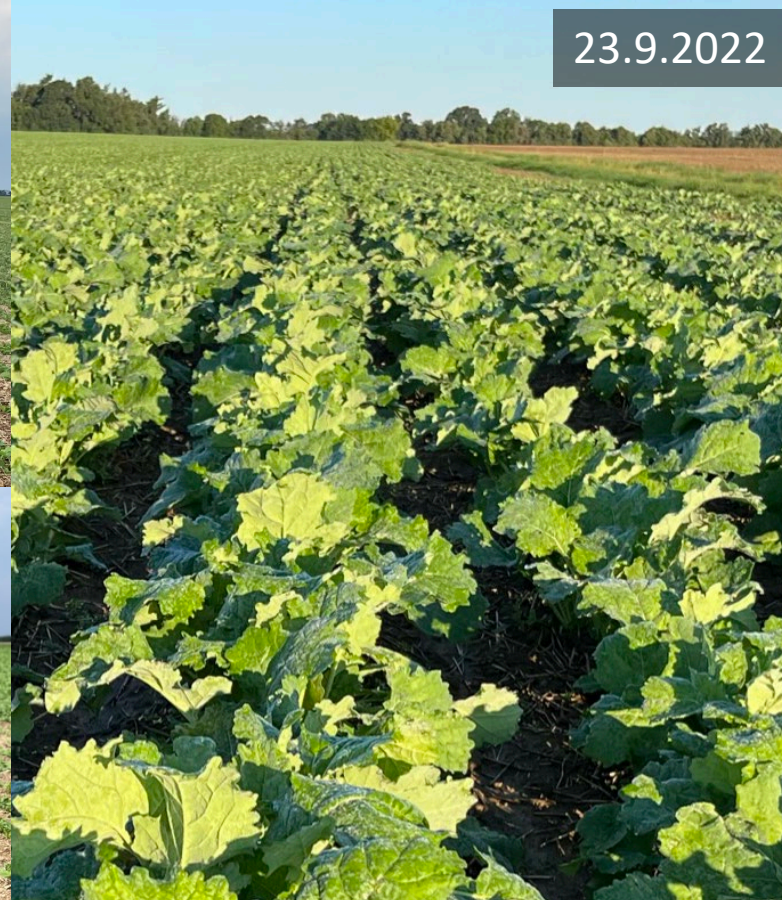
What is your project/initiative about?

- Band application – raster 50 cm (raps, mais, sugar beet, poppy etc.) – savings up to 68%
- Mechanical weed control – inter-row, full area
- An individual approach to weed control – zone application (section – avg. 25% savings or local up to 95%) – mainly for total herbicide or spring barely, winter wheat
- Companion cropping (crop diversity) – poppy + oats, rape seed with freezing mixture or bean, Wheel rows sown with flowering plants (CTF)





8.9.2022



23.9.2022

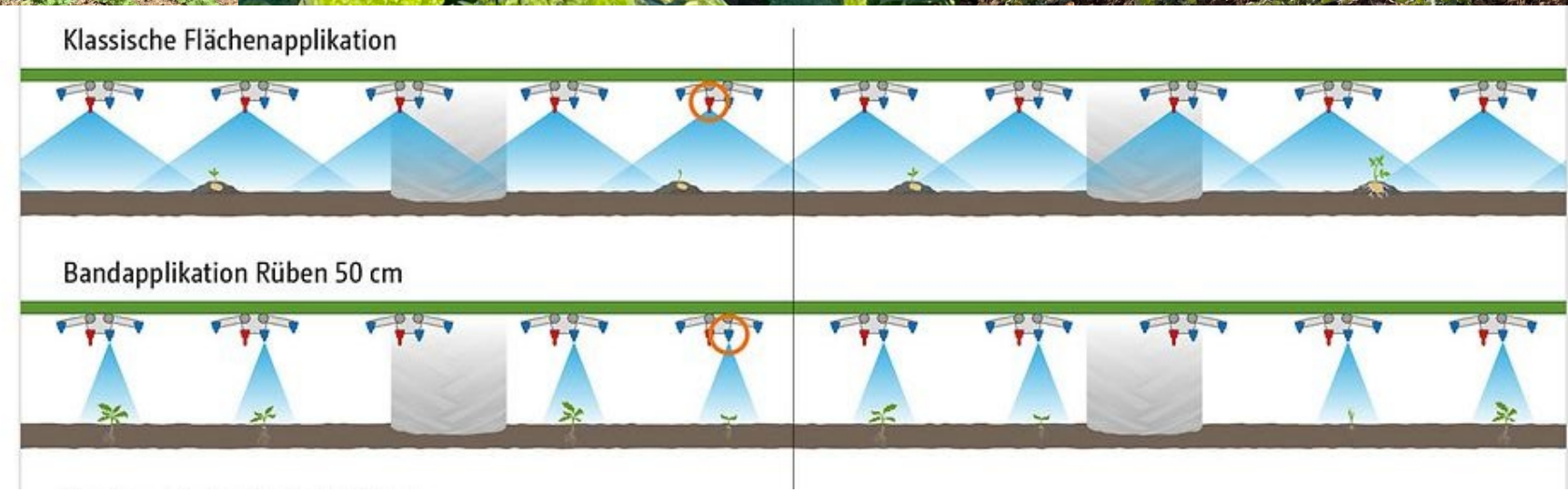


18.3.2023



13.9.2022

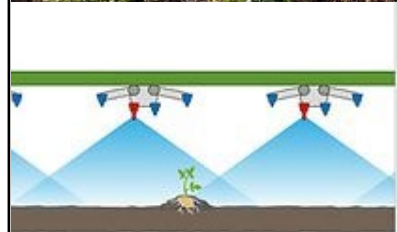
Application hight abov the vegetation	applied area /cm/		max.savings
	40°	40° - turning the nozzle 30°	
50	36,4	31,5	37%
40	29,1	25,2	50%
35	25,5	22,1	56%
30	21,8	18,9	62%
25	18,2	15,8	68%



8.9.2022

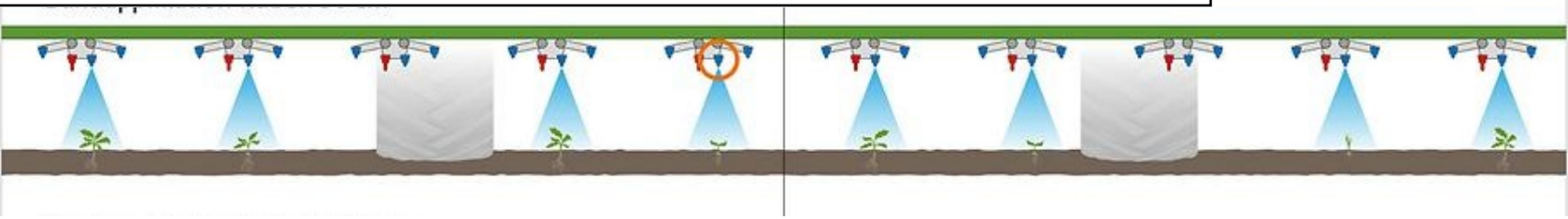
23.9.2022

18.3.2023



Application high
above the vegetation

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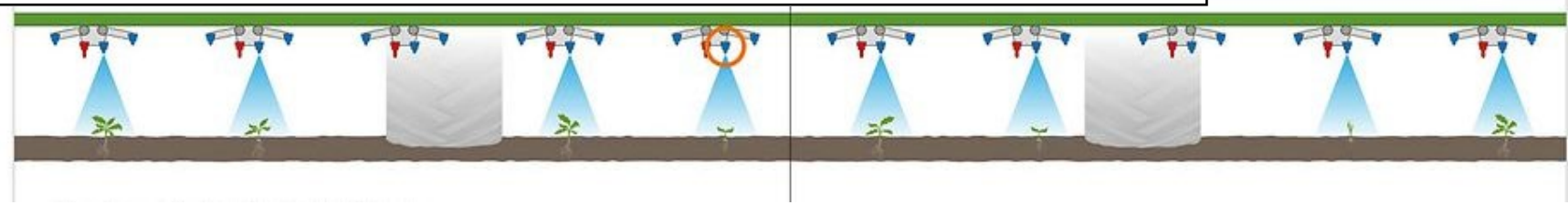
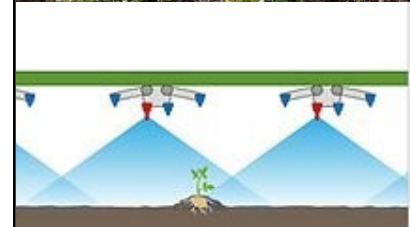
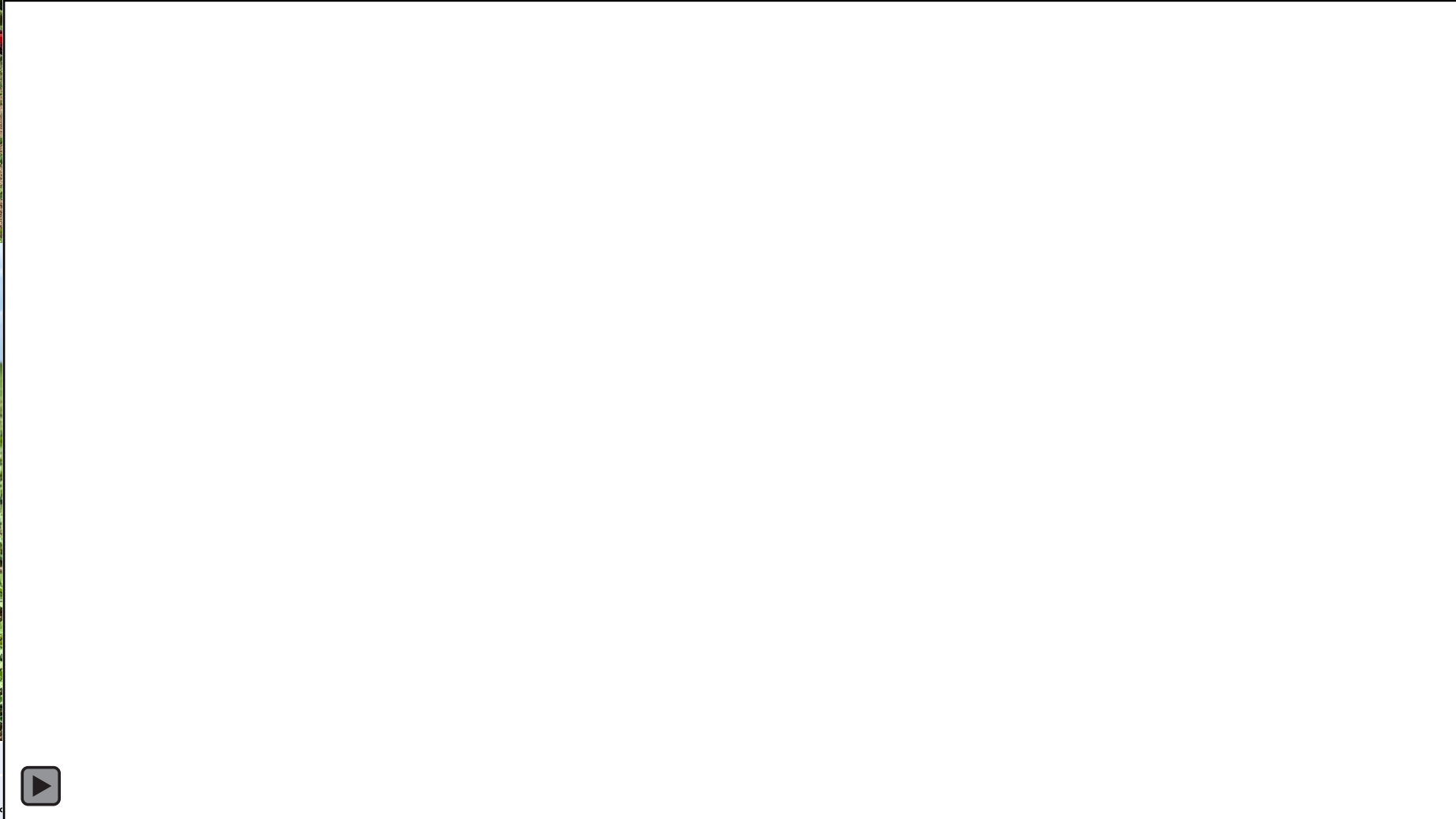
8.9.2022

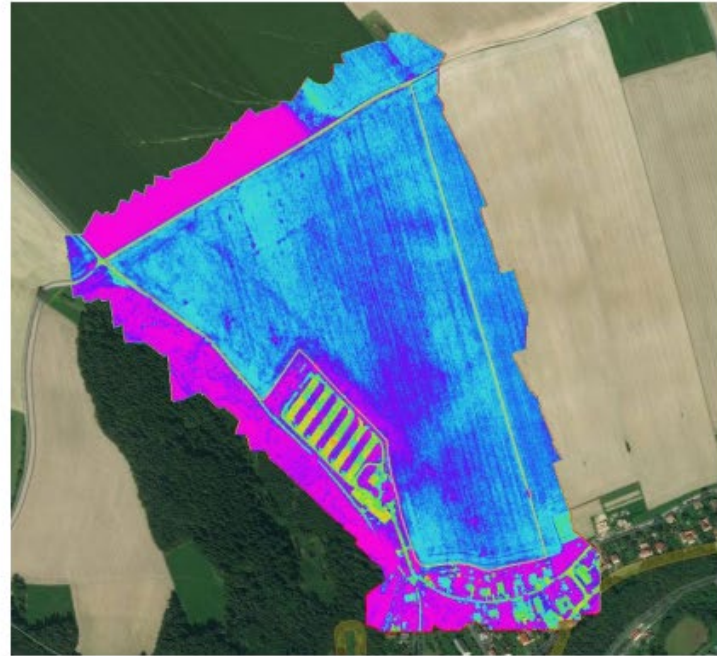
23.9.2022

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Application hight abov the vegetation	40°
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40	29,1
35	25,5
30	21,8
25	18,2



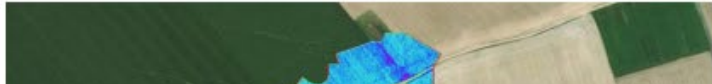


Heat map data



Předpis aplikace

Legend			
	Rate [l/ha]	Area [ha]	Volume [l]
●	150	3.68	553
Total prescription		3.68	553
Volume savings			85.24 %



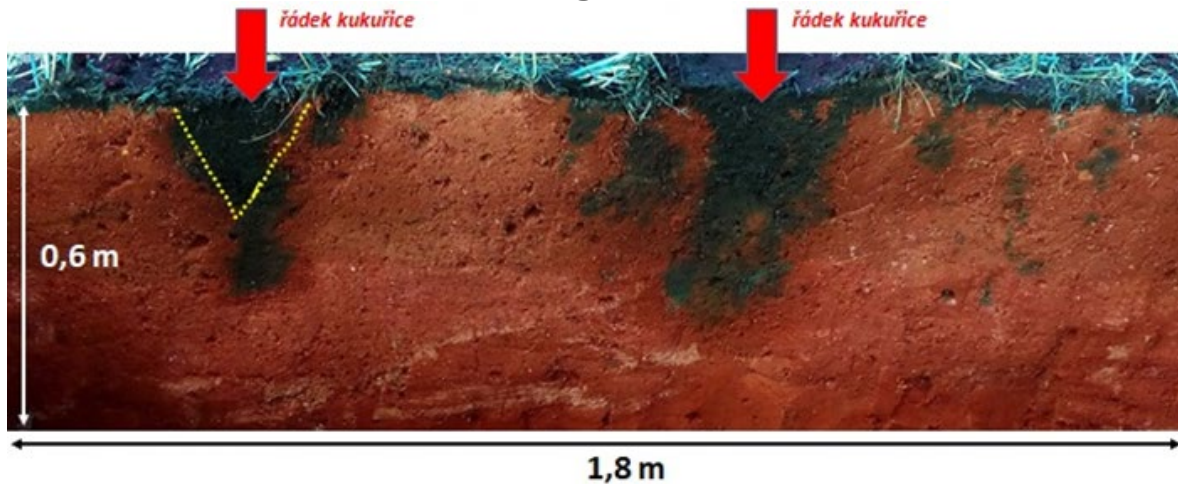
Low Weed Pressure <4%
Medium Weed Pressure 4-60%
High Weed Pressure >60%



Companion cropping – crop diversity



Oil seed rape is sown together with the
freezing mixture



Poppy seed with Oats
Wheat is sown with winter peas



Wheel rows with greening

Wheel rows sown with flowering plants (CTF)



View of corn field with sown wayline rows.

Cílené ozelenění prostoru mezi kolejeovými stopami postřikovače v porostech obilniny, kombinace výsevu méně vzrůstných a mělčeji kořenících (trávy a jeteloviny) a vzrůstných druhů (jednoleté kvetoucí dvouděložné druhy). První rok založení pro víceleté využití či jednoleté ozelenění.



Šmöger a Brant, 2020

kolejová stopa



Flowering plant in a track row in corn stands.

How do you contribute to a reduction of pesticide dependency in your work/project?



What are your experiences in the transition to sustainable arable cropping systems with reduced pesticide dependency? What challenges do you/did you face?

- › trials and verification of technologies together with research institutions (we are member of EIP Vysokomýtská synklinála)
- › show employees (stakeholders) that it makes sense
- › Motivation new employee – agriculture – high-tech technologies
- › planning of machine renewal (high cost of replacing machines)
- › incompatible platforms between agricultural machinery manufacturers



What are the most important steps, from your perspective, towards pesticide independency?

- › follow new trends in agriculture – all the time
- › positive approach towards new technologies
- › With high tech you can find motivated young employees they can work with new machines
- › Band and zone application
- › Dron filed monitoring – creating prescription, filed surveying
- › Using bacteria's – Pseudomonas, Trichoderma etc.



Can you indicate which pillar(s) of the ICM is included in your example?

- › Crop diversity
- › Robust varieties
- › Soil Management
- › Targeted Control
- › Monitoring & Evaluation

With that new approaches we are able to fulfill all the five pillars of ICM



EU CAP Network workshop

‘Innovative arable crop protection - using pesticides sustainably’

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Amsterdam, The Netherlands

All information on the workshop is available on the event webpage:

https://eu-cap-network.ec.europa.eu/events/eu-cap-network-workshop-innovative-arable-crop-protection-using-pesticides-sustainably_en

