Podpora chytrého zemědělství s využitím dat z dronů a technologie GIS

Ing. Kornél Czíria
Skymaps s.r.o.

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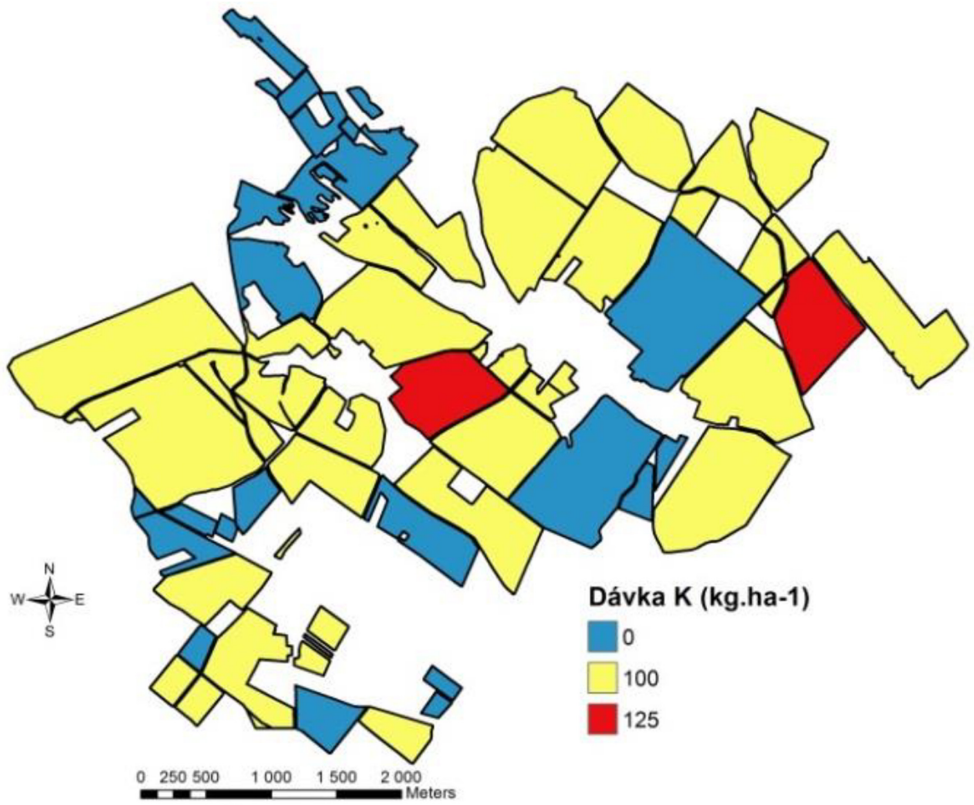
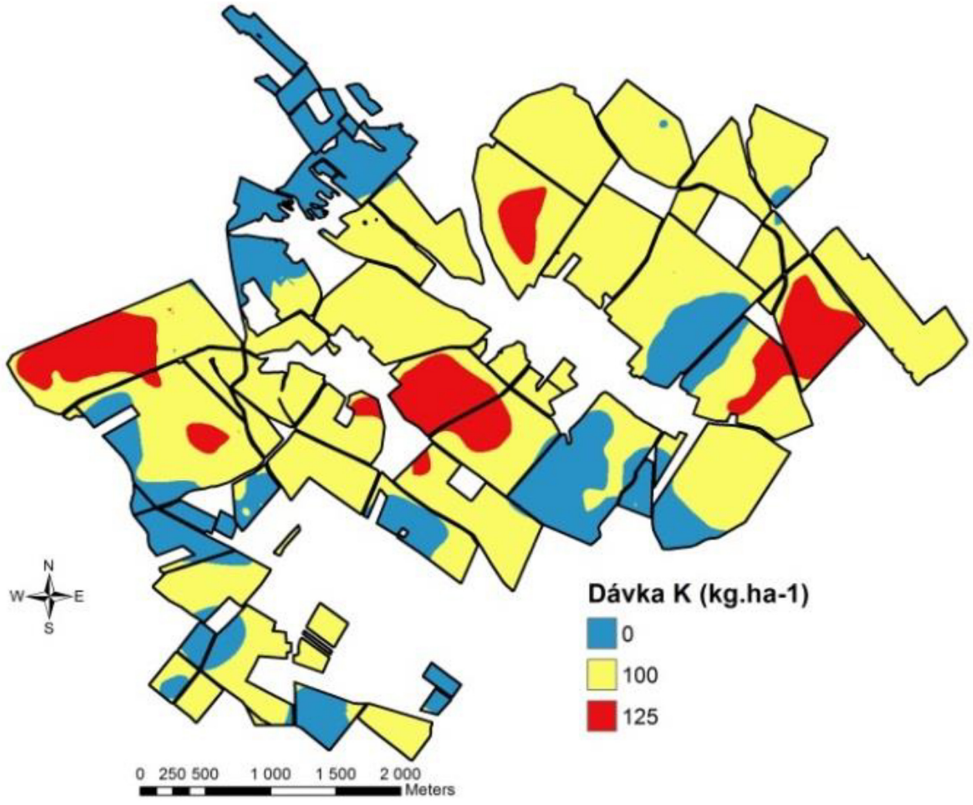
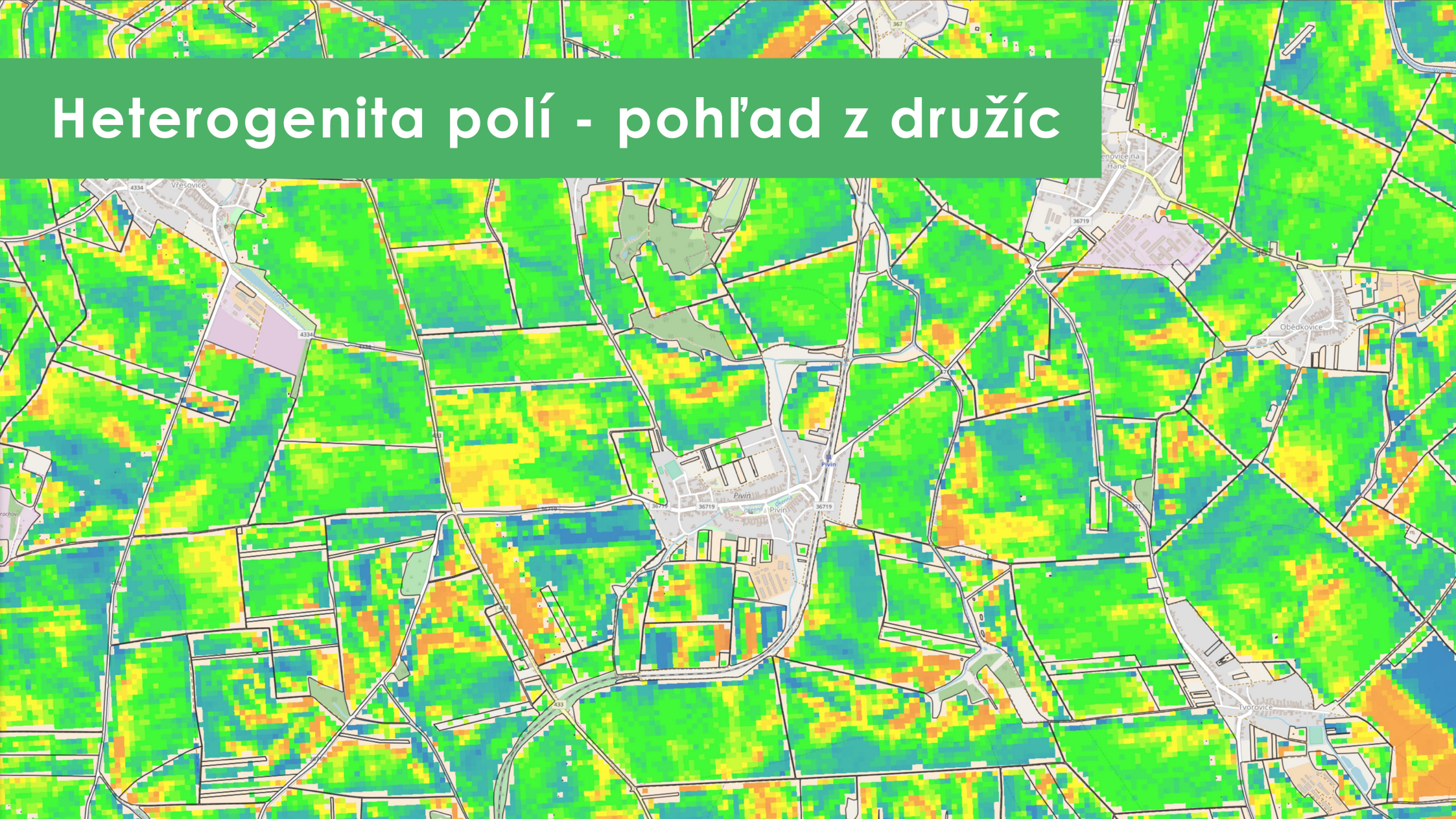
AGRIMATICS

Presné poľnoshospodárstvo





Heterogenita polí - pohľad z družíc



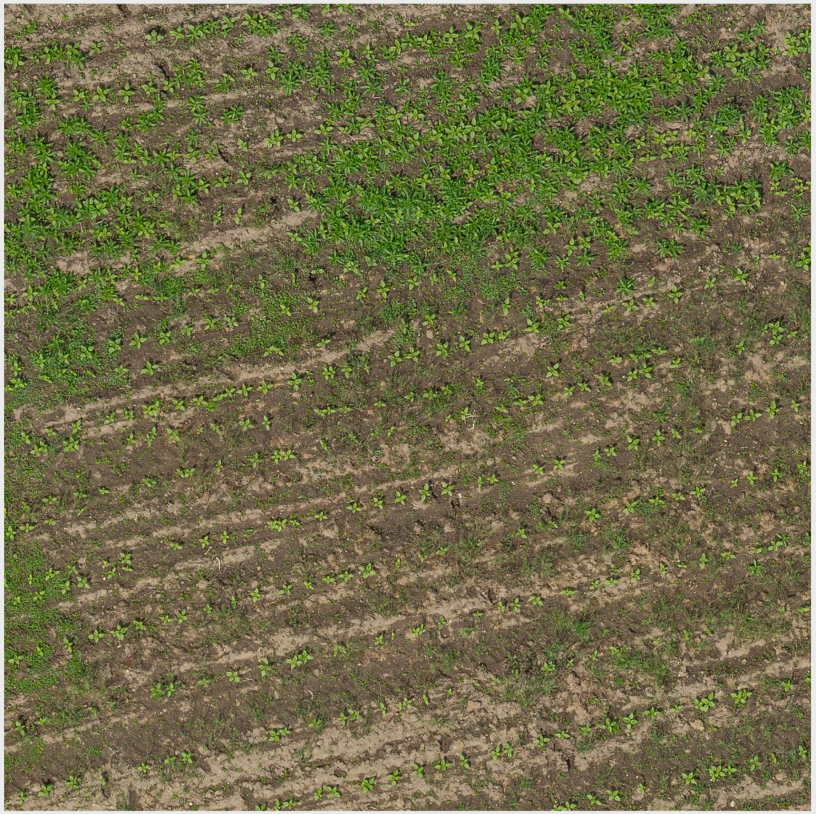
Drony (UAV)

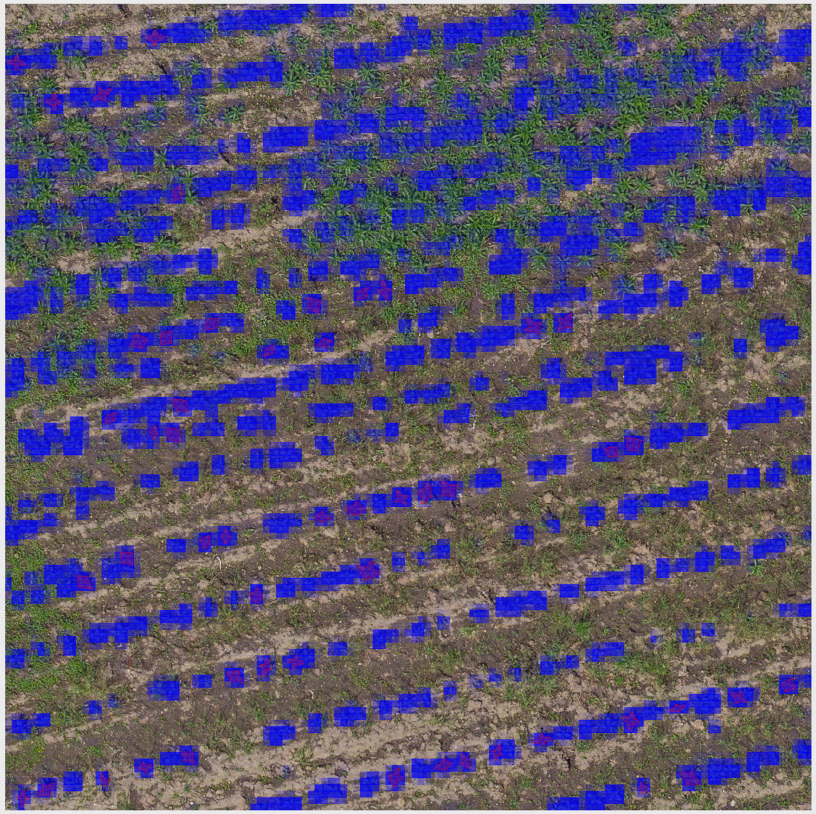
Multispektrálne a RGB dáta

Veľmi vysoké rozlíšenie - obrazová analýza, identifikáciu typu burín

Databáza rôznych burín - machine learning

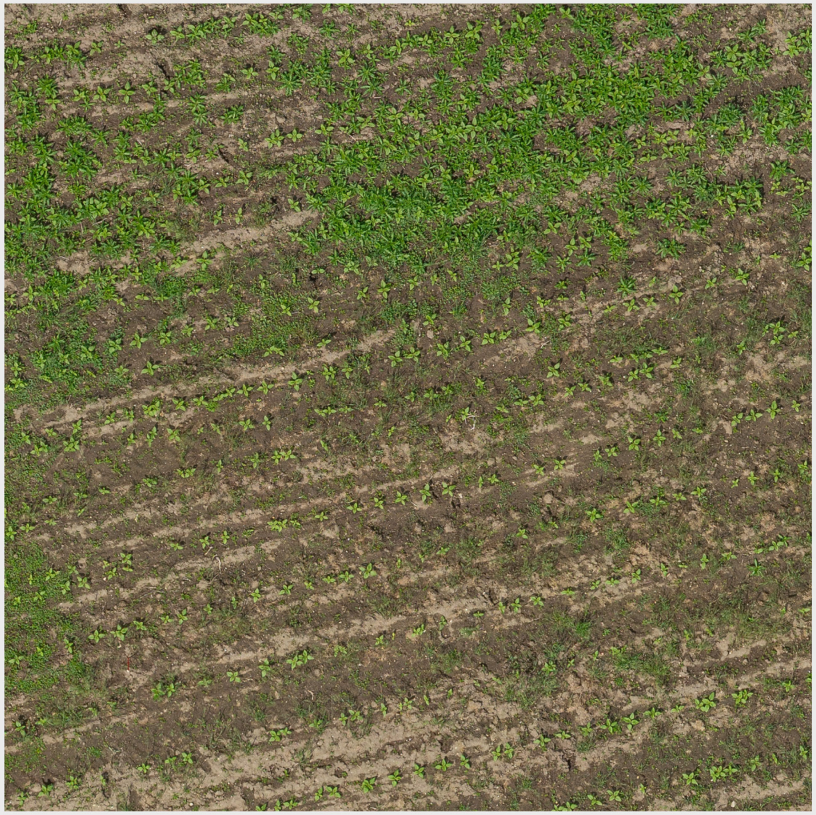
Identifikácia burín - machine learning

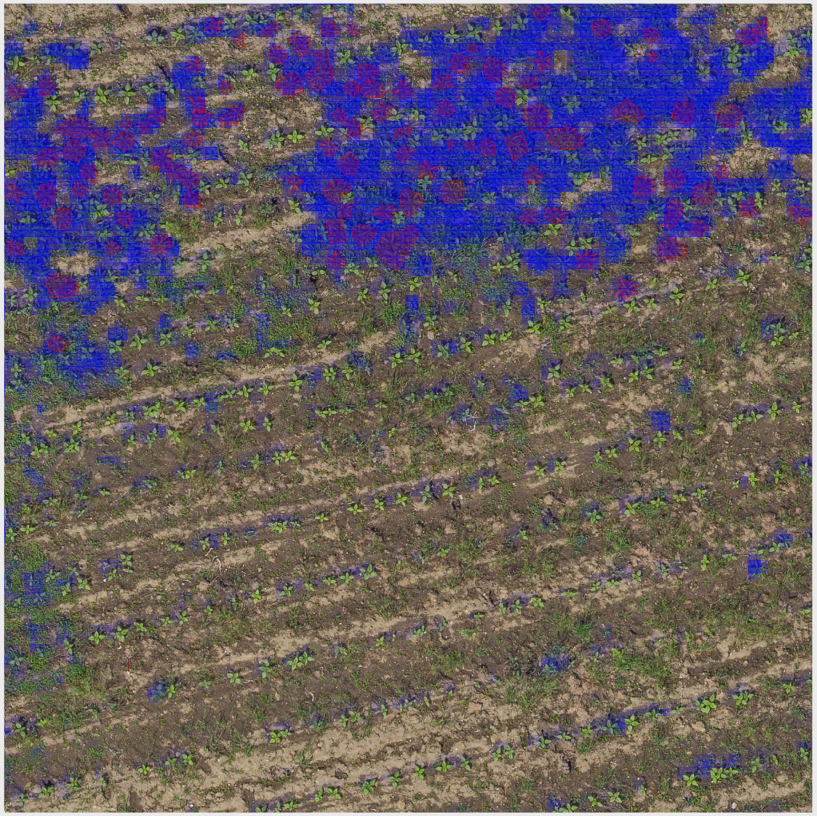




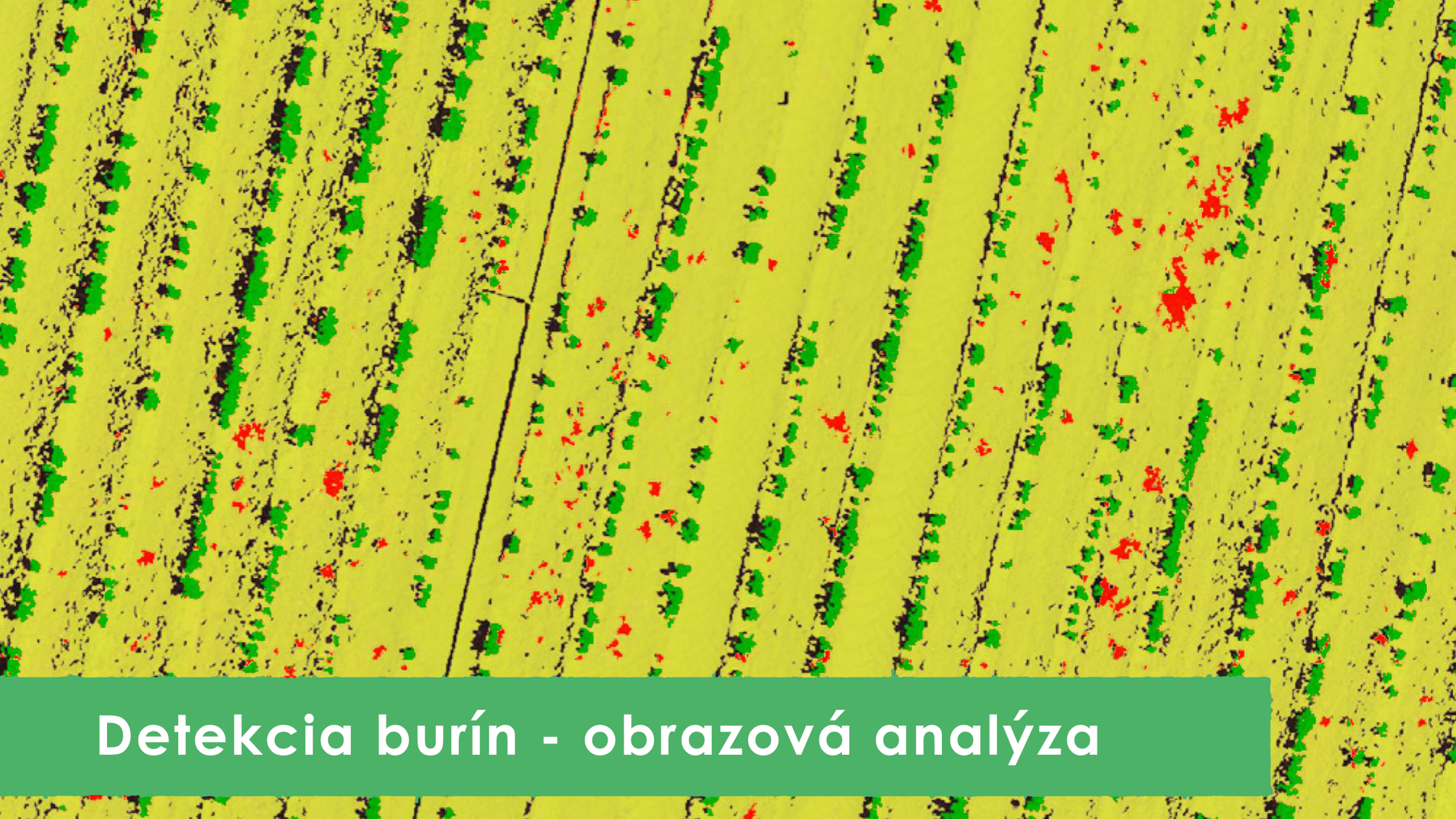
Slnečnica

Identifikácia burín - machine learning





Pichliač roľný



Detekcia burín - obrazová analýza

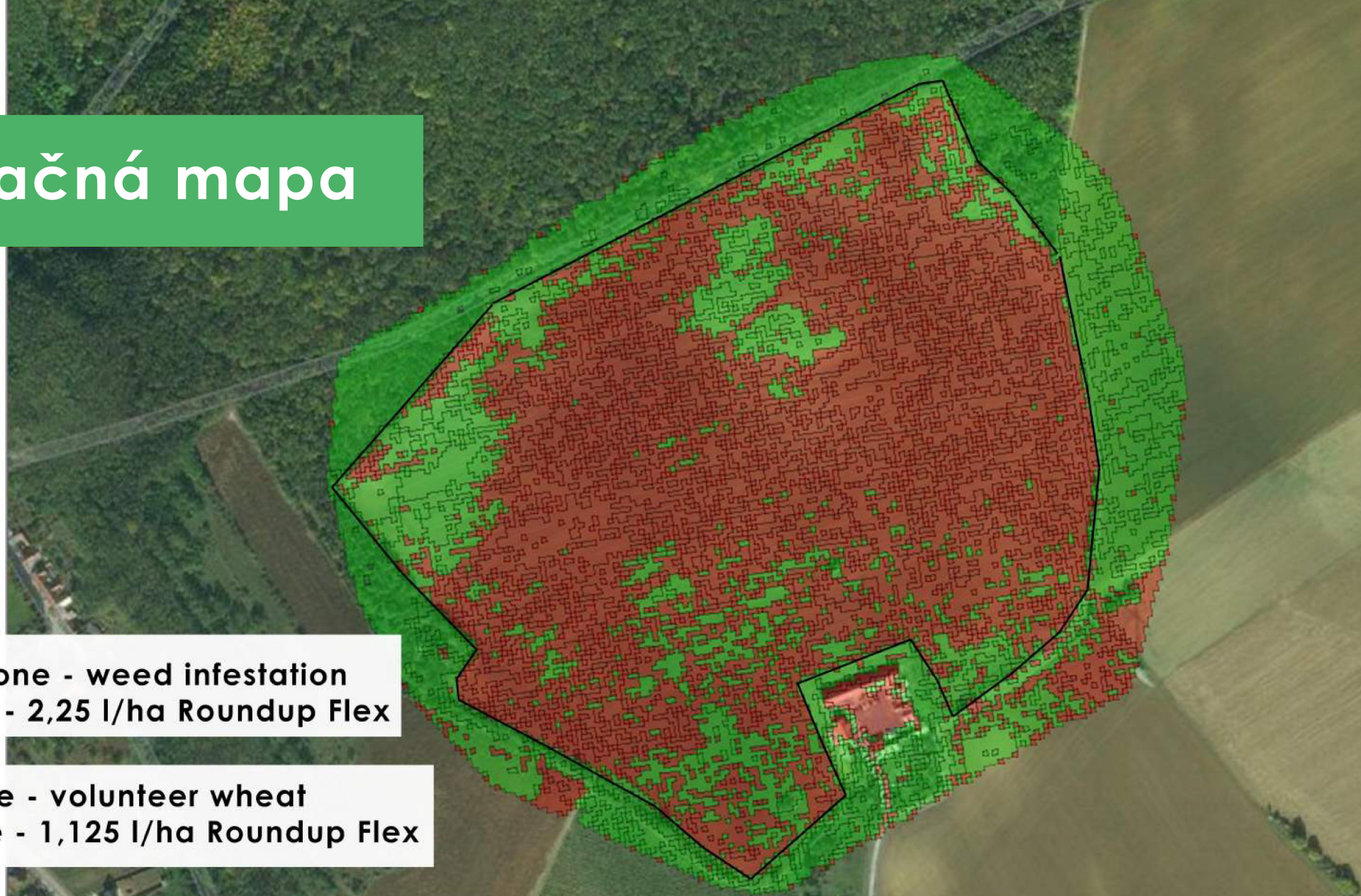
Detekcia a identifikácia burín

Lokálne cielená aplikácia herbicídov

Detekcia a identifikácia burín zo satelitných a dronových snímok

Až o 70% menej herbicídu s variabilnou aplikáciou

Aplikačná mapa



Green zone - weed infestation
Full rate - 2,25 l/ha Roundup Flex

Red zone - volunteer wheat
Half rate - 1,125 l/ha Roundup Flex

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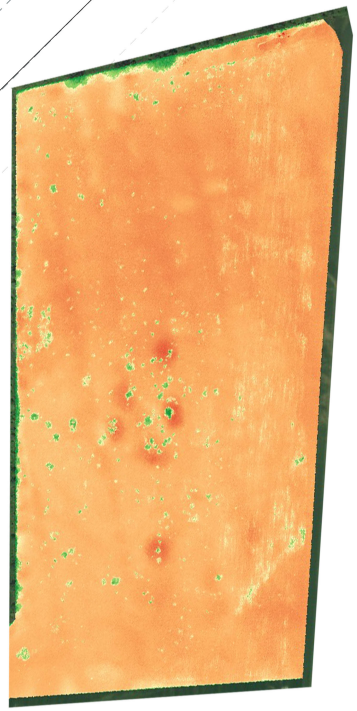
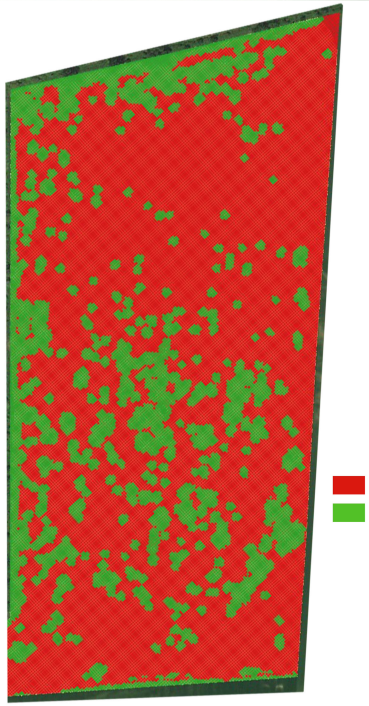
Trial no. 1 - Gabčíkovo



VEGETATION INDEX



APPLICATION MAP

Only 31% of the field had to be sprayed

Info about trial

- 32 ha corn/soya field, Cirsium arvense spots
- Sprayer John Deere, 3m section control, 24m boom
- Two pass full rate/ one pass untreated/spot application
- Roundup FLEX 2,0 l/ha (max. rate in SK)
- Seed bed tillage
- Application 24 April, Planting 28 April

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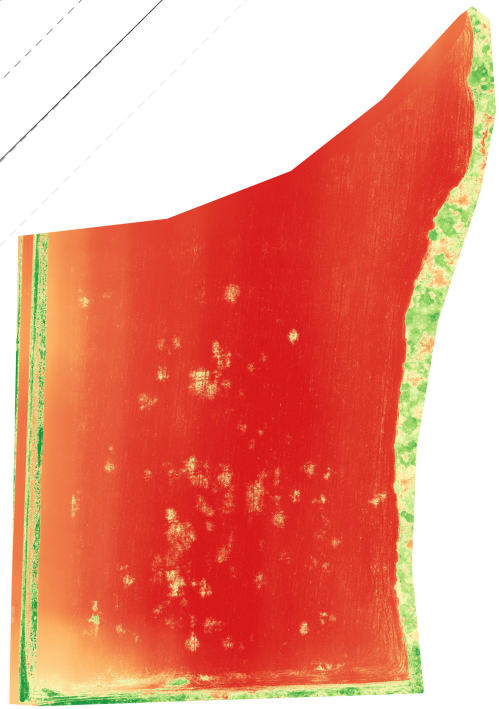
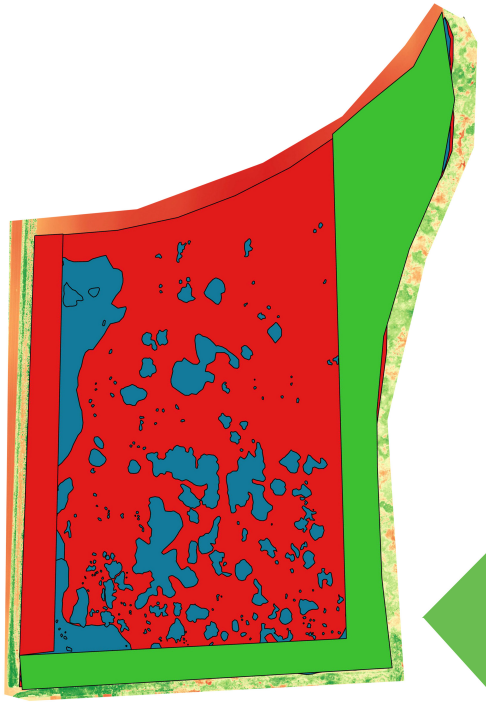
Trial no. 4 - Pavlice



VEGETATION INDEX



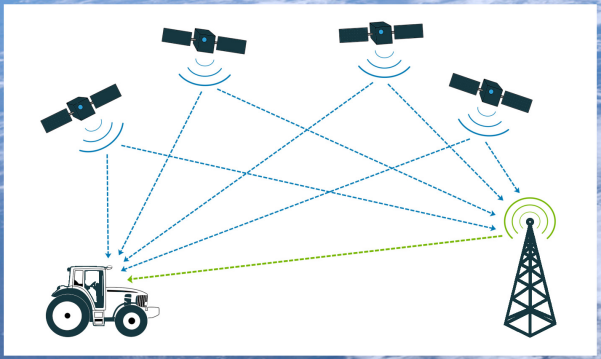
APPLICATION MAP

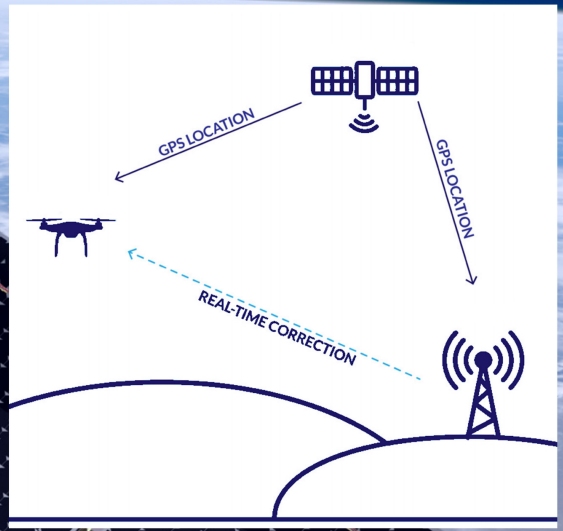
Only 29% of the field had to be sprayed

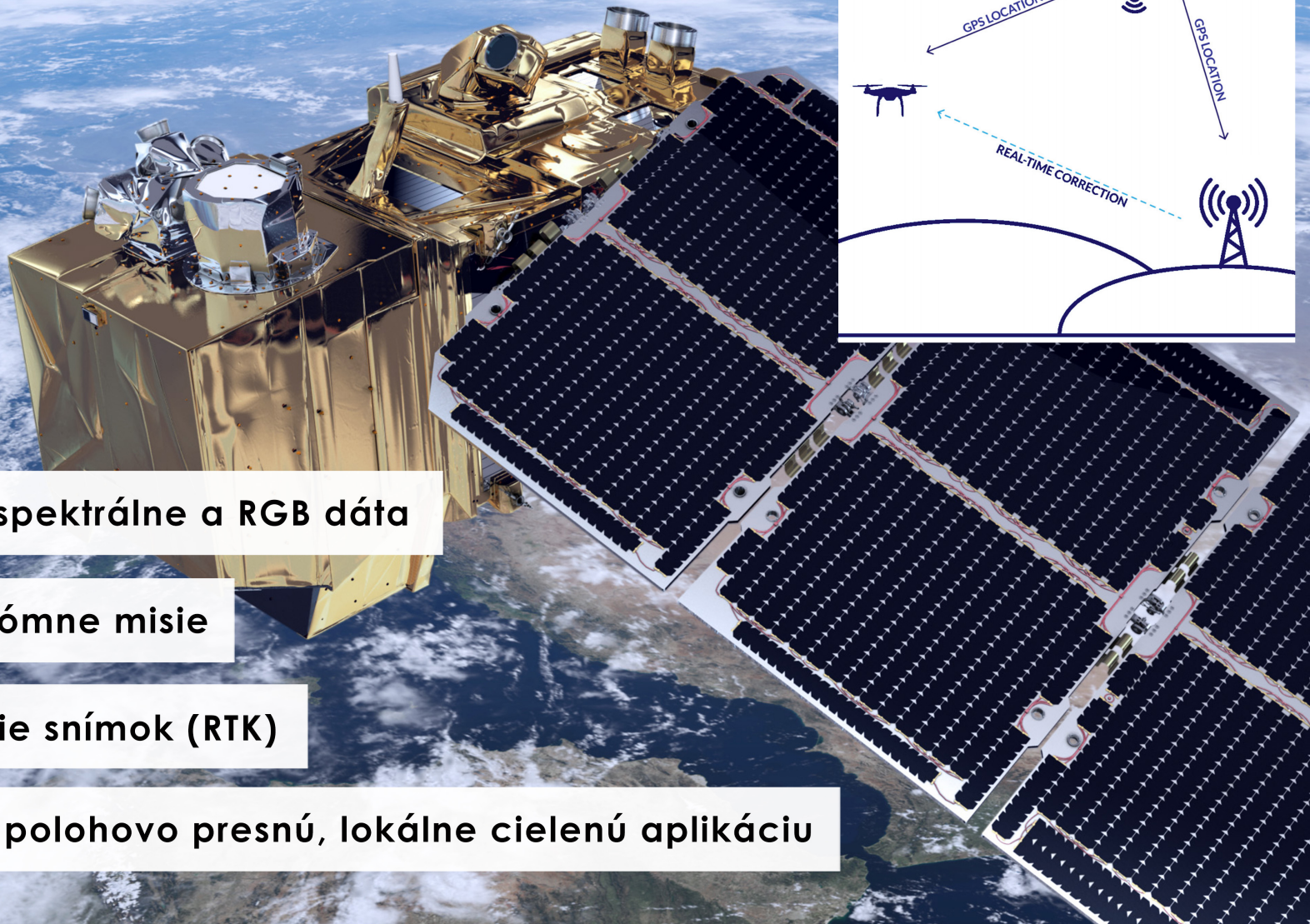
Info about trial

- 9 ha soyabean field, Cirsium arvense spots
- Sprayer Agrifac, single nozzle control, 36m boom
- Full rate/ one pass untreated/spot application
- Roundup FLEX 2,0 l/ha (max. rate in SK)
- Seed bed tillage
- Application 17 April, Planting 19 April

Družice







Sentinel 2 družice - multispektrálne a RGB dáta

Navigácia drona - autonómne misie

Presné georeferencovanie snímok (RTK)

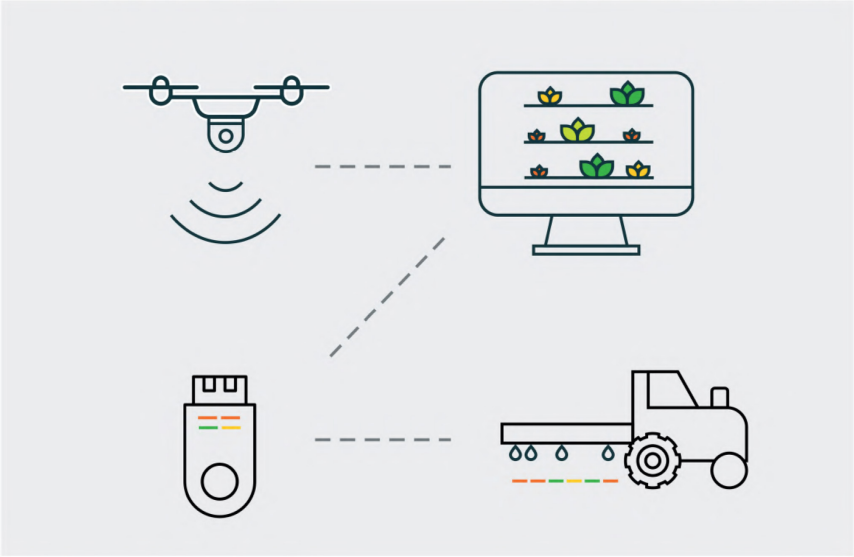
Navádzanie traktora pre polohovo presnú, lokálne cielenú aplikáciu

CultiWise

Sometimes, less is more

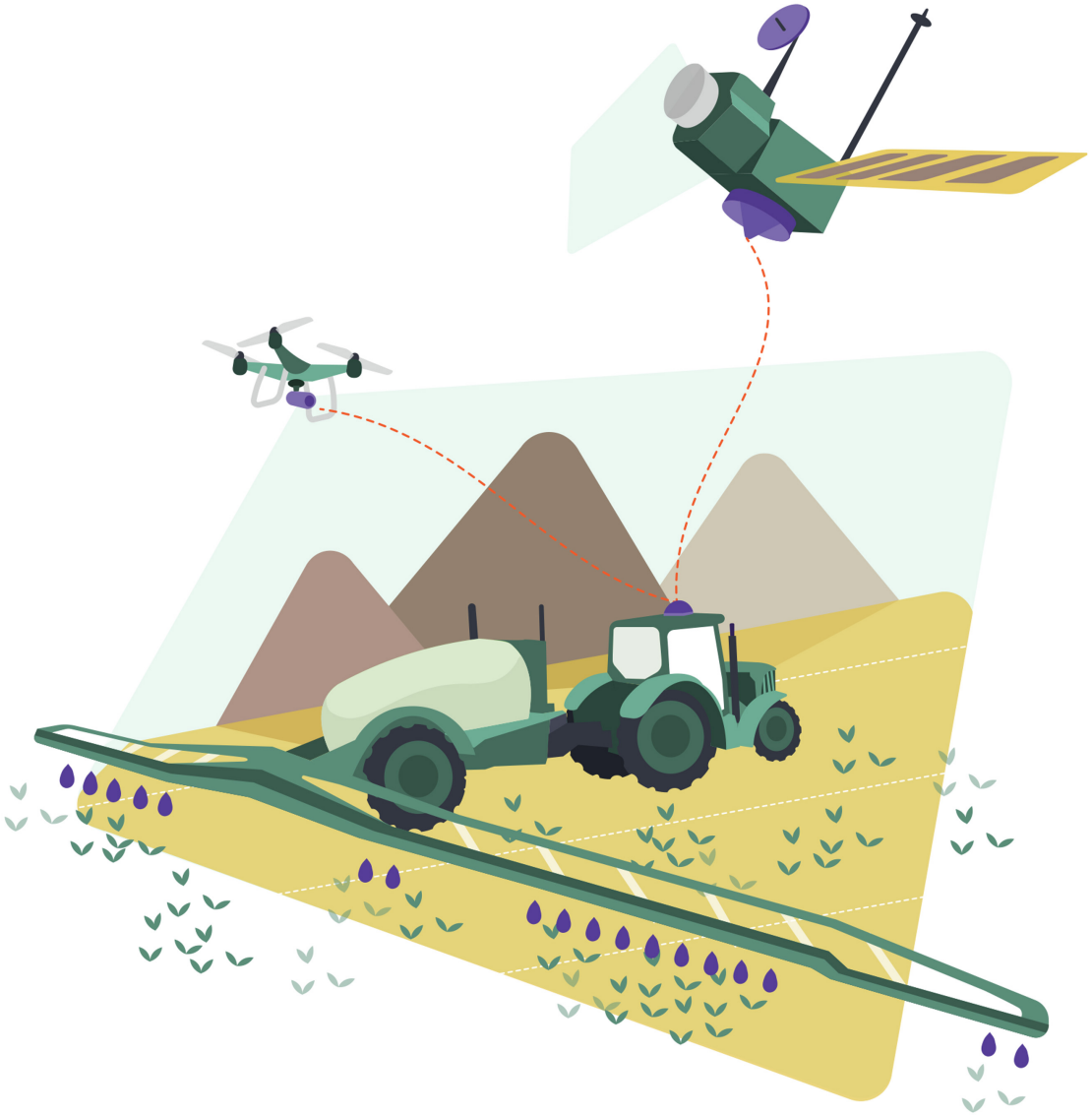
1. Data collection by drone

2. Data processing, weed detection



3. Upload of application map

4. Variable rate application



CultiWise

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At the Barns field

Demo Farma 1

Area: 27,6 ha
Location: 9010 / 2

SATELLITE IMAGERY

DRONE DATA

PRESCRIPTIONS

Add from: Chlorophyl map

No. of zones: 4

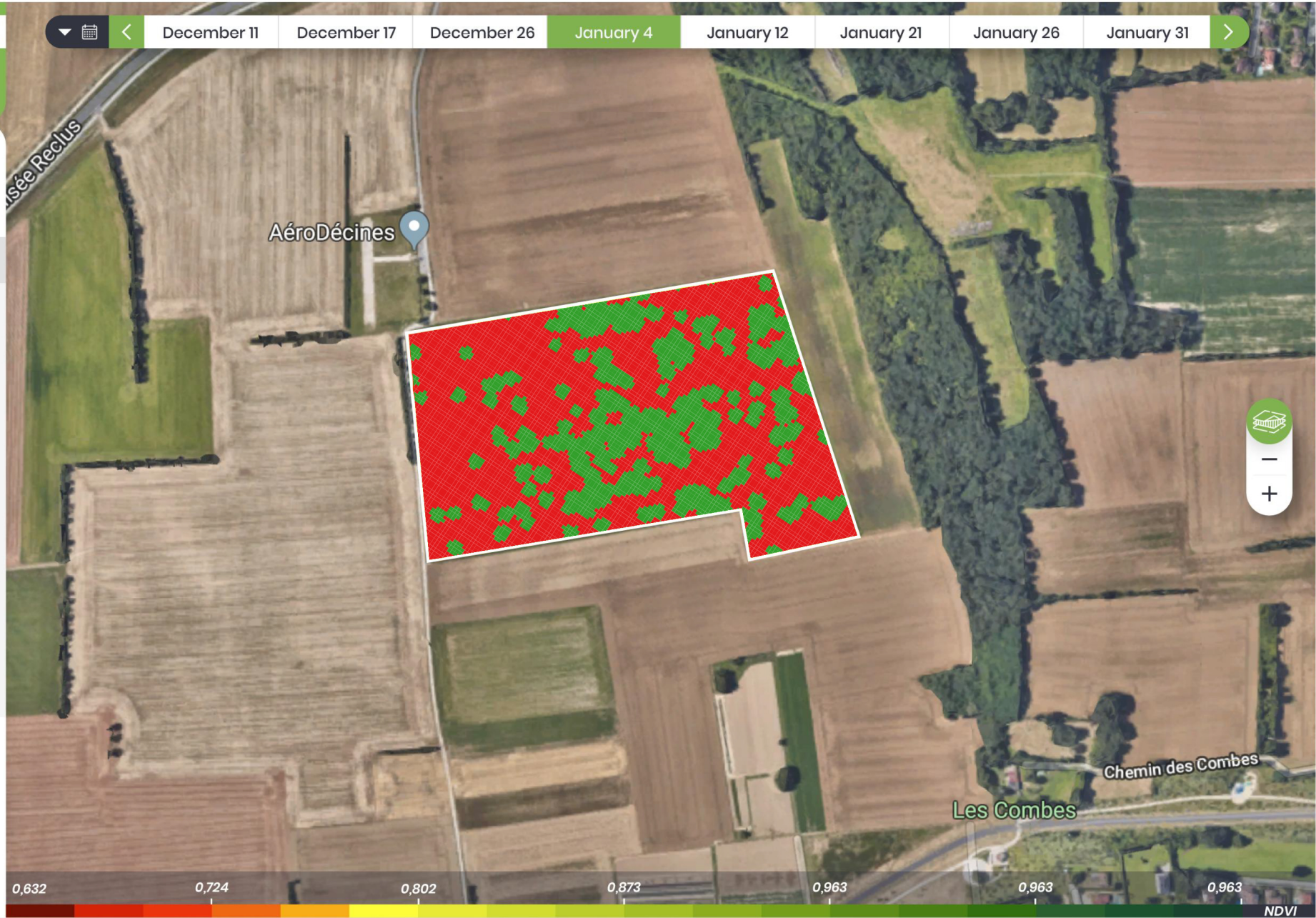
Set rates for zones:

	100	l/ha	8,2 ha
	120	l/ha	6,1 ha
	80	l/ha	4,6 ha
	140	l/ha	9,1 ha

Total: 24,9 ha / 2350 l

Export to: John Deer 209

Export prescription



Ďakujem za Vašu pozornosť!

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