

Vantage Balkans SRL

Hardware equipment Company

Romania

NIK Agro Service LTD

Soil Laboratory and Nutrition Services

Techno Farm LTD

Software Development

NIK Electronics LTD

Hardware equipment Company

Bulgaria

FACTS

16 YEARS ON THE MARKET

High capacity lab in Bulgaria

Awards

7 innovation awards for precision farming since 2009 till now.

860 000+

Agrochemical soil and plant tissue analysis

750 000+

Hectares of mapped areas

105 000 000+

Hectares covered by satellite imagery in the first year of the platform launch

OUR SERVICES



NUTRITION SERVICES



Laboratory analysis



Soil sampling



ISO 17025



Over 150 yearly contracts

LAB FACILITY

Modern lab facility in Sofia, Bulgaria



Analytical laboratory equipment

MP-AES (Microwave Plasma Atomic Emission Spectroscopy); SFA Analyzer (Segmented Flow); Automated pH/EC Analyzer; Elemental Analyzer (Carbon/Nitrogen)



Qualified staff

Each of the employees in the lab have over 5 years experience in its field of specialization and the Lab Manager has proven experience in the field of laboratory analysis for more than 30 years.



Automated process

Automated process for the soil and plant tissue analysis – no human intervention in the analysis method.



Plant Tissue Analysis

Automated Microwave Digestion system; ICP-OES Instrument

PART OF WEPAL PROGRAM

WEPAL is a proficiency program of the Wageningen university.

In order to proof the quality of our soil and plant tissue analysis, we participate in the annual intra-laboratory comparison program of Wageningen university. a

The program aims to set a standard of quality of the analytical analysis through dozens of laboratories around the globe.

http://www.wepal.nl/

NIK Agro

870	861	860	919
175	47.1	22.6	574
-	-	27.5	644 **
154	61.6	19.6	374 **
165	43.0	20.0	578
157	33.1	23.0	542
199 *	31.4	30.1	688 **
166	55.4	23.5	530
163	39.0	27.0	549
173	7.1 **	22.4	568
199 *	60.3	27.7	662 **
173	61.2	21.2	579
183	64.0	15.0	328 **
154	51.8	28.5	540
177	51.8	21.7	451 **
170	63.0	28.0	557
178	67.1	26.0	565
173	54.6	28.7	570
175	59.9	15.3	525
168	46.1	25.1	564
151	44.8	23.4	423 **
==========	Statistical Results	==========	
169.7	52.96	24.24	558.8
10.5	12.61	4.91	26.6
19	19	20	20
172.8	51.80	23.45	560.5
7.0	8.80	3.50	19.4

SOIL SAMPLING



Automated soil sampling

Automatic soil samplers Wintex, equipped on ATV machines. Depth of saples 0-30 cm and 30-60 cm.



GPS coordinates

Every machine is equipped with Trimble MMX-070 and a dedicated mobile app which allows recording GPS coordinates up to 2,5 cm accuracy.



Representative soil samples

Samples at uniform spacing in a grid pattern.



Experienced team

Well trained soil sampling team, thanks to a training courses every 6 months.

SOIL SAMPLING APP



Mobile application for scouting during soil sampling, which allows you to see:

- Exact location of the soil sampling
- The path inside the cell
- Field itself and how it was divided to cells
- Pictures of problems in the field



Daily reports on the soil sampling records of the app received by mail.

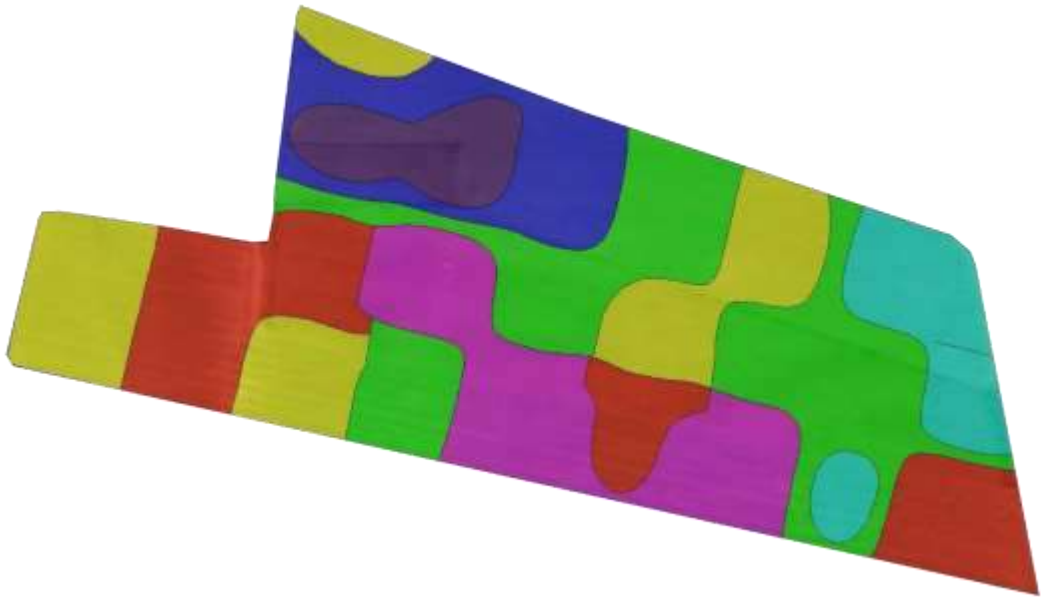
SOIL ANALYSIS

- Particle size distribution;
- Soil reaction (pH);
- Total soluble salts;
- Organic content;
- Total and available for plant uptake forms of nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, chlorine, iron, copper, zinc, manganese, boron, etc.



VRA MAPS

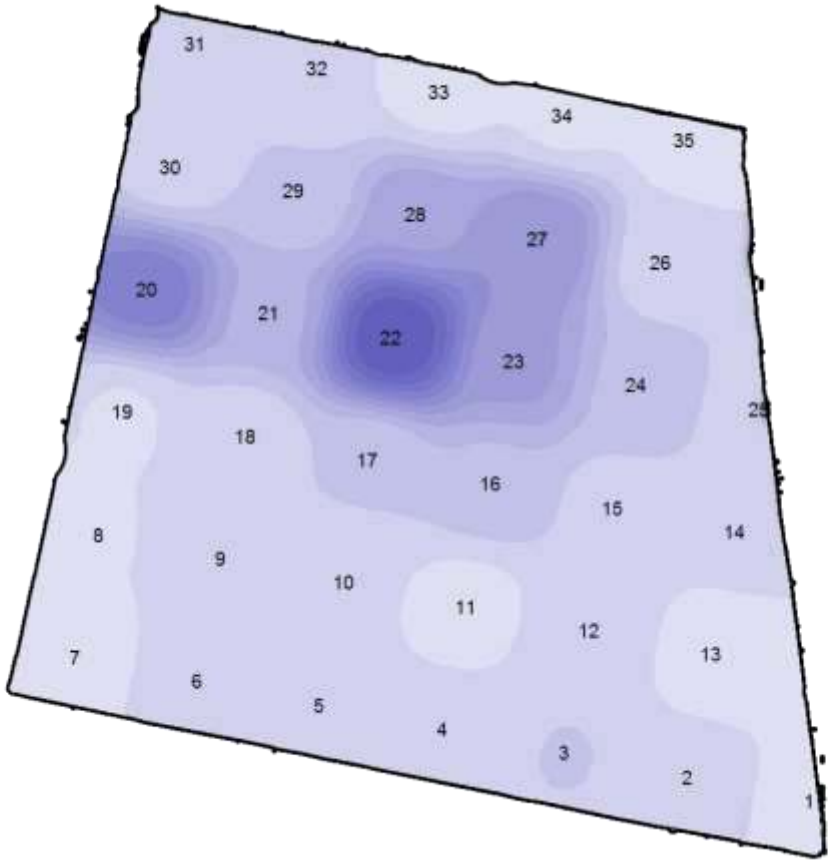
Based on the soil analysis our agronomists can create precise VRA maps for implementation of the needed nutrition elements in the soil for the desired yield.



Benefits:

- Prevention of fertilizer application in nutrient sufficient areas in fields;
- Establishment of equal quantity of available to crops nutrients across the area of a certain field;
- VRA prescription maps based on a great number of soil testing results.

VRA MAPS EXAMPLES



	Flat rate	Variable rate
Spreading rate	150 kg/ha	Variable
Kg	6 195kg MAP	3 715kg MAP
Price	0,45 euro/kg	0,45 euro/kg
Expenses	2 787,75 euro	1 671,75 euro
Savings		1 116 euro


GEOSCAN

WHAT IS GEOSCAN?



GeoSCAN is a farm monitoring platform based on the integration of:
Satellite images, providing crop development analysis of each individual field.
Local weather data. Providing historical, forecast, agro grams and phenological information for each separate field.
Soil analysis data, including maps and recommendations based on soil sampling.
Field observations.

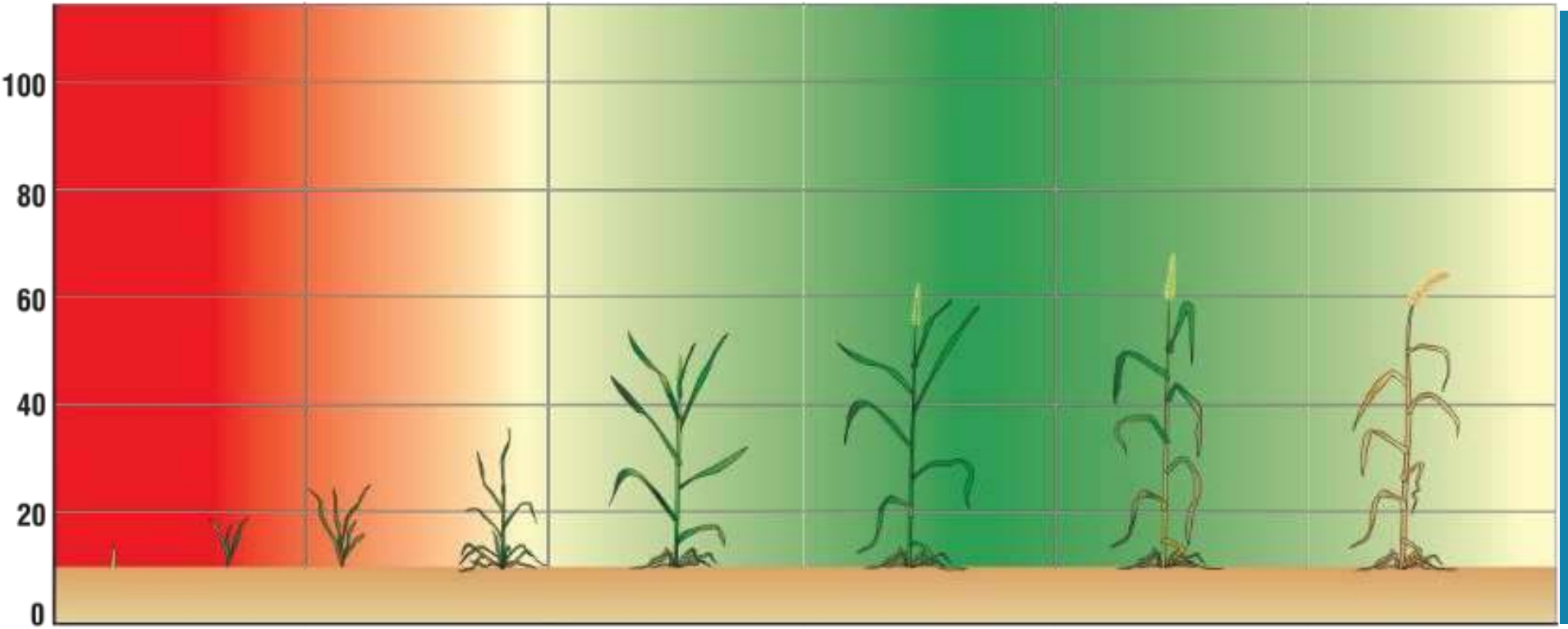
GeoSCAN covers the duration of the entire crop year. Subscription for the program can be made at any time of the year.

SATELLITE IMAGERY



The GeoSCAN platform incorporates several different providers of satellite imagery thus ensuring extremely frequent coverage over selected area. The typical imaging period is 4-5 days. The images are available in two resolutions, both with respective accuracy for agricultural monitoring. There is automated cloud recognition process which distinguishes images with lower usability due to clouds. An easy to comprehend visual system of notifications for newly available images makes the work with images a seamless process even to users with no or small experience.

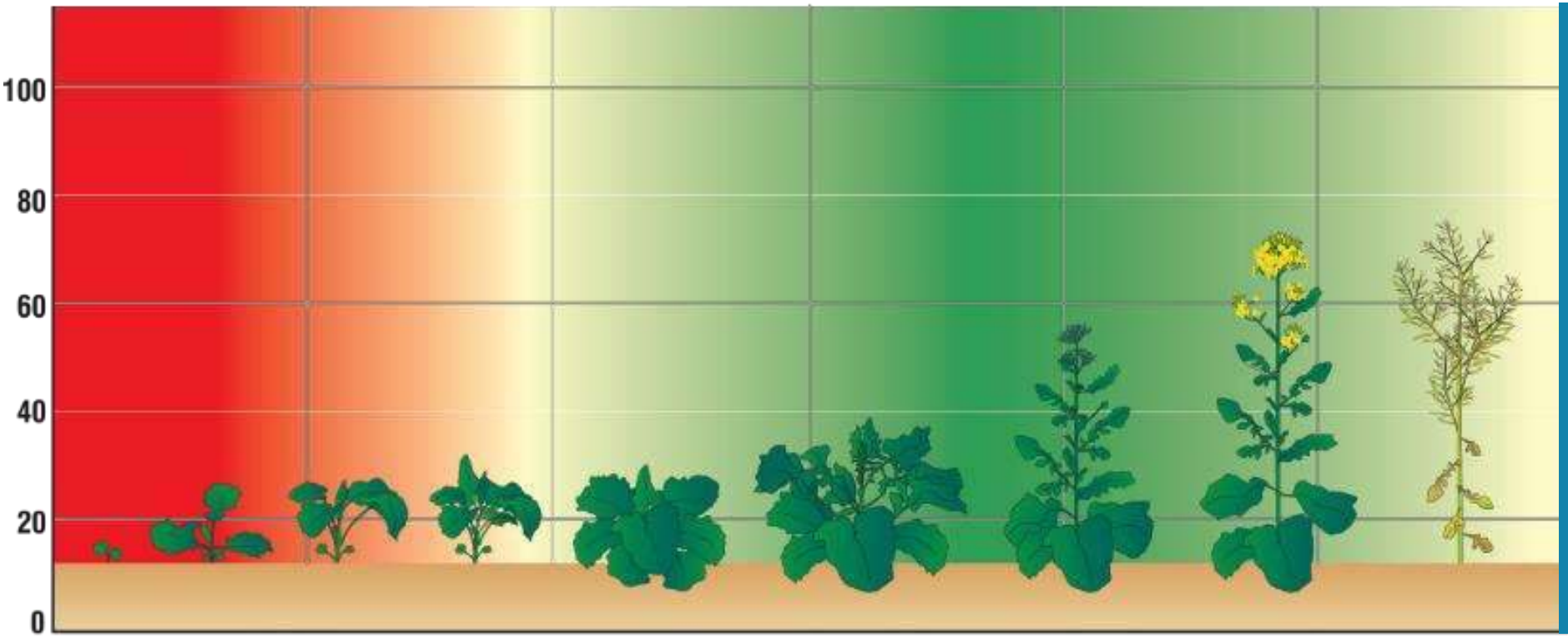
INDEX VALUES



Winter Wheat

Approximate values of the GeoSCAN index compared to the major phenophases of winter wheat.

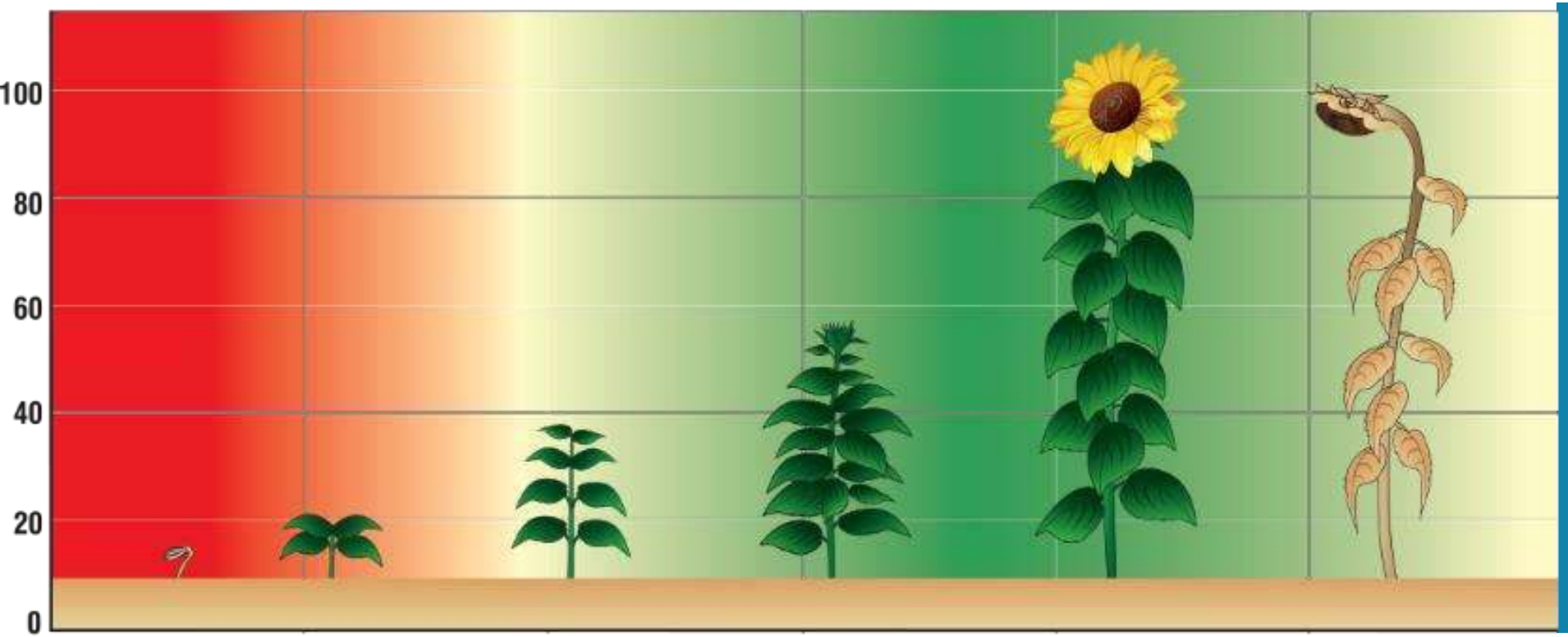
INDEX VALUES



Rapeseed

Approximate values of the GeoSCAN index compared to the major phenophases of rapeseed.

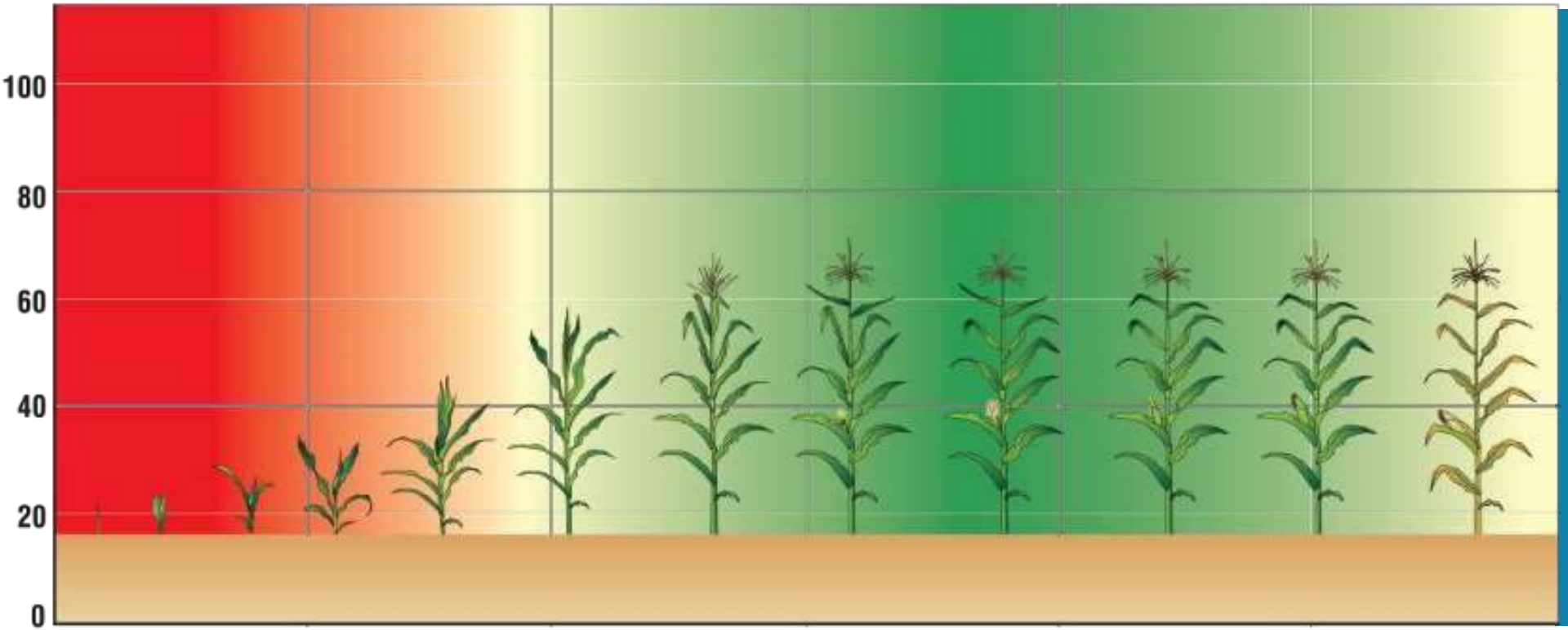
INDEX VALUES



Sunflower

Approximate values of the GeoSCAN index compared to the major phenophases of sunflower.

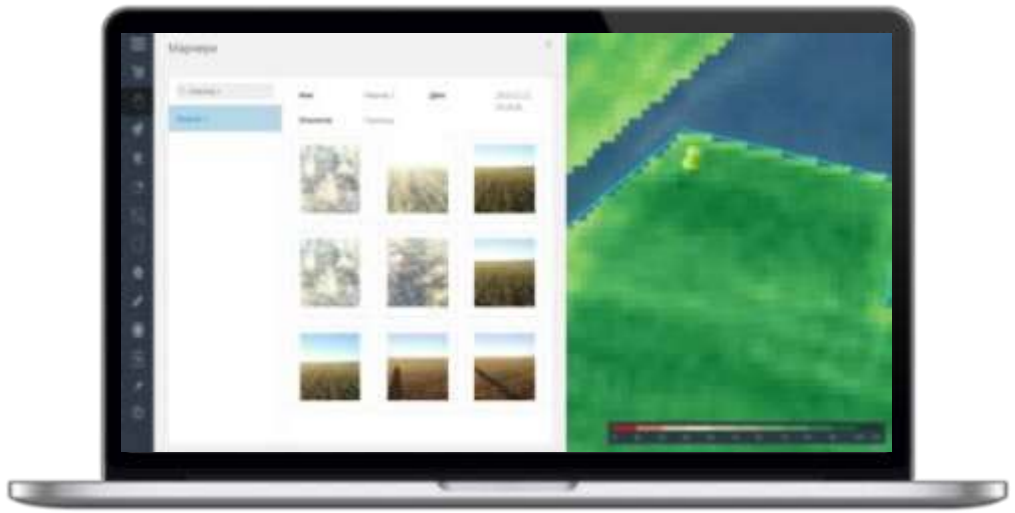
INDEX VALUES



Corn

Approximate values of the GeoSCAN index compared to the major phenophases of corn.

GEO-TAGGING

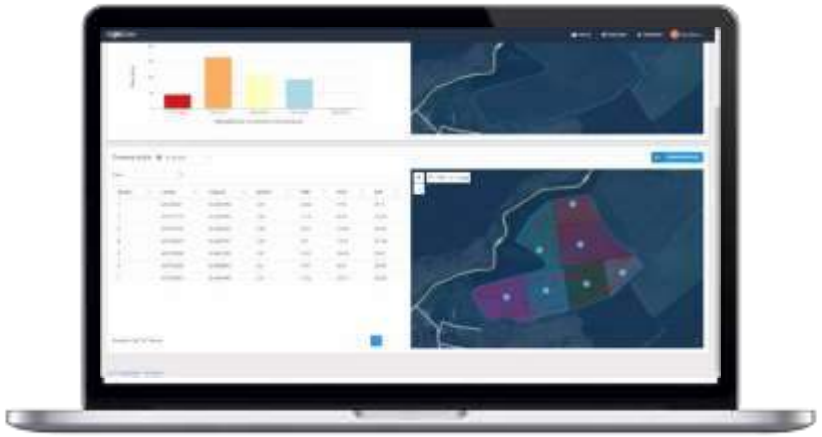


Supports smart scouting activities by creating geo-location markers with attached notes and pictures



Supports field location and accommodates creating organized farm reports

SOIL DATA





Soil Maps

Visualization of soil maps, based on laboratory analysis

Soil results in absolute relative values

Different types of visualizations

WEATHER DATA



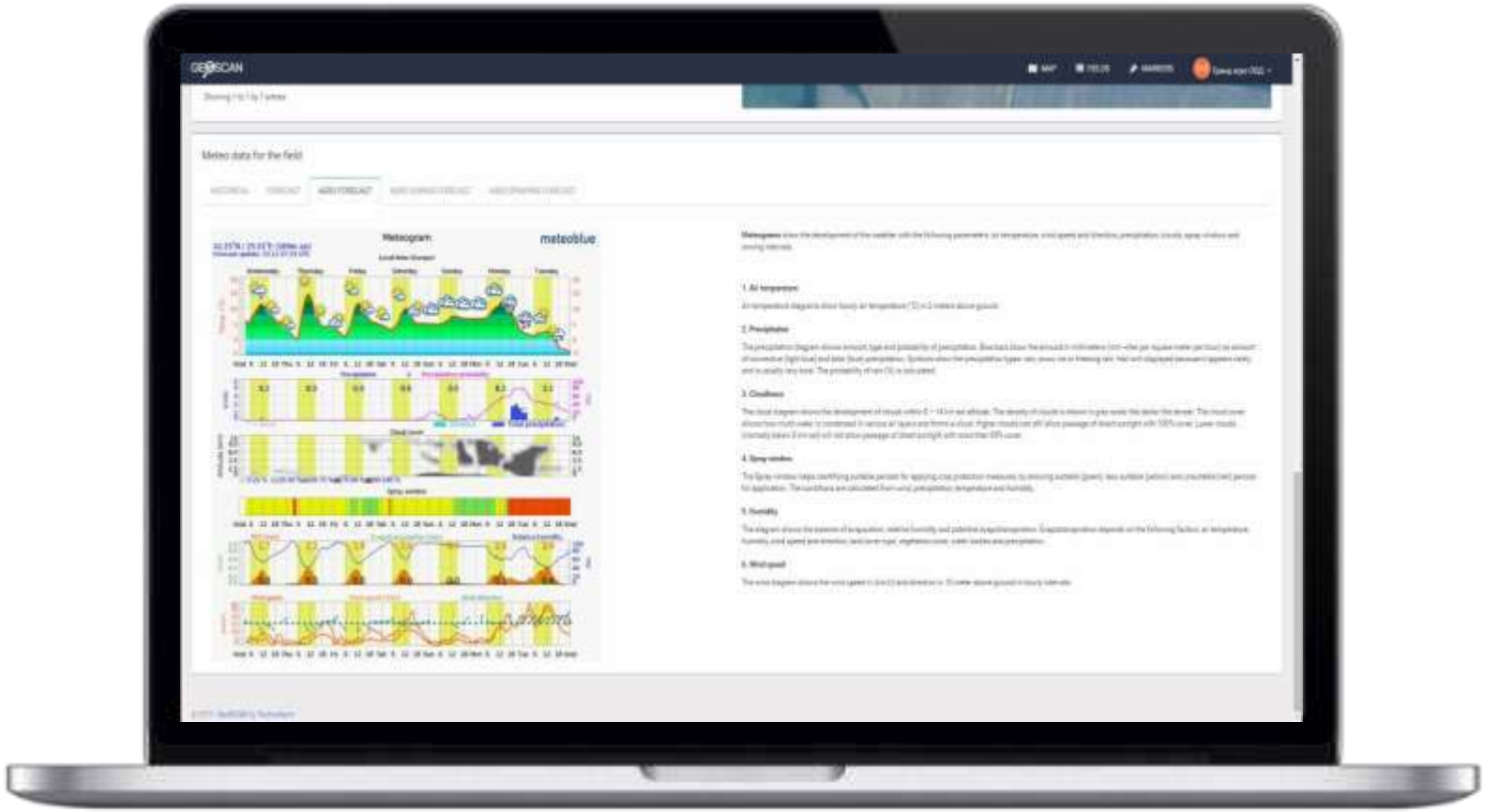




WEATHER AGRO FORECASTS

Weather Agro Forecast panel includes the following information:

- Precipitation and precipitation probability;
- Cloud cover;
- Evapotranspiration;
- Wind speed and wind direction

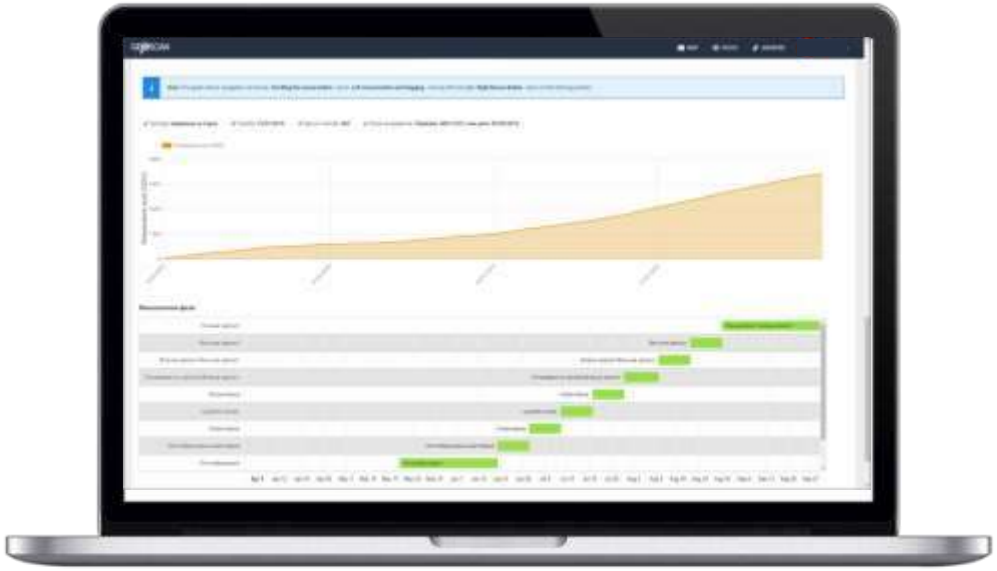


GROWING DEGREE DAYS

Suitable periods for spraying and sowing of the major annual crops are automatically calculated and visualized.

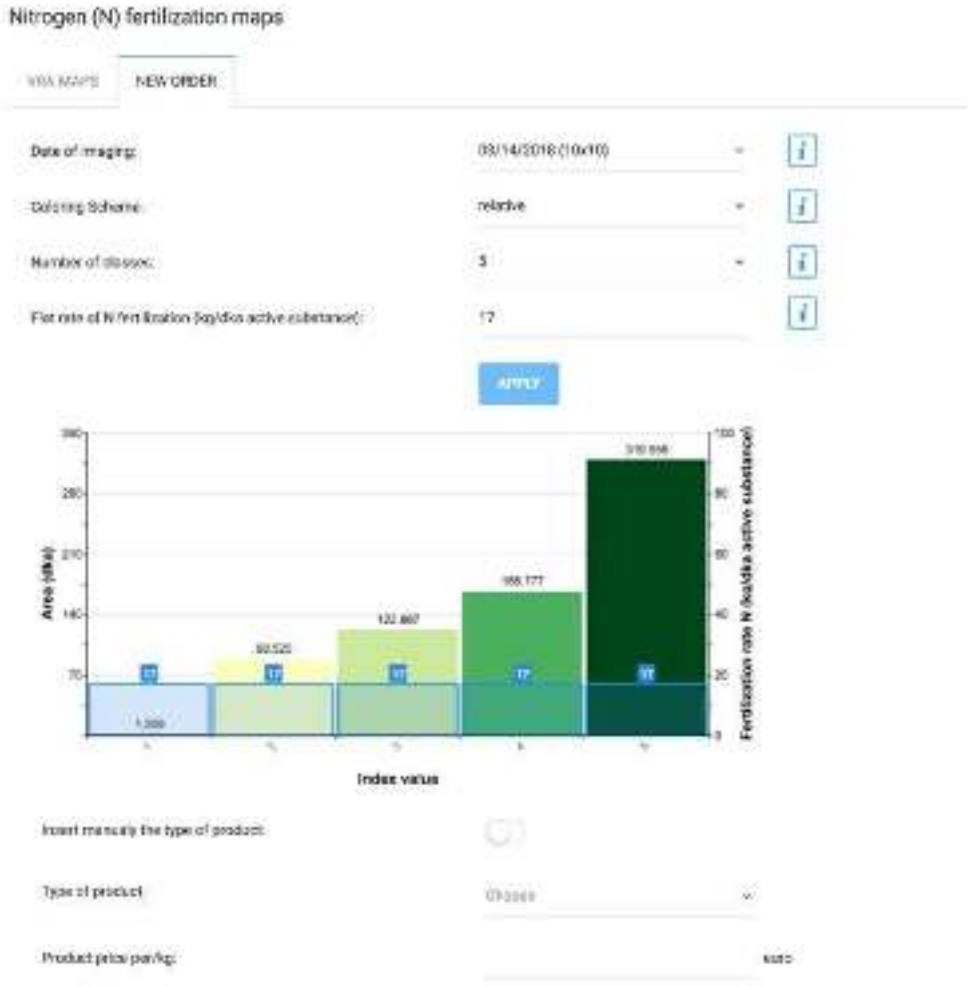
The growth of the agricultural crops is determined to a great extent by the temperature. When the growth of a plant depends on the temperature conditions, its phase of development can be characterized, using the Growing Degree Days (GDD). This functionality allows tracing the accumulation of the Growing Degree Days for each day on the following crops (wheat, barley, rapeseed, sunflower, corn and oats) and the transition of the crops from one phenophase of development to another. Different phenophases based on multi-annual observations for each ten-day periods of the crop year are presented graphically. An information is given also for the sum of precipitation from the date of sowing up to the current day as well as for a period specified by the user.

Based on the amount of precipitation, notifications are displayed where the amounts are specified as: deficit, optimal or normal for the development of the crops observed





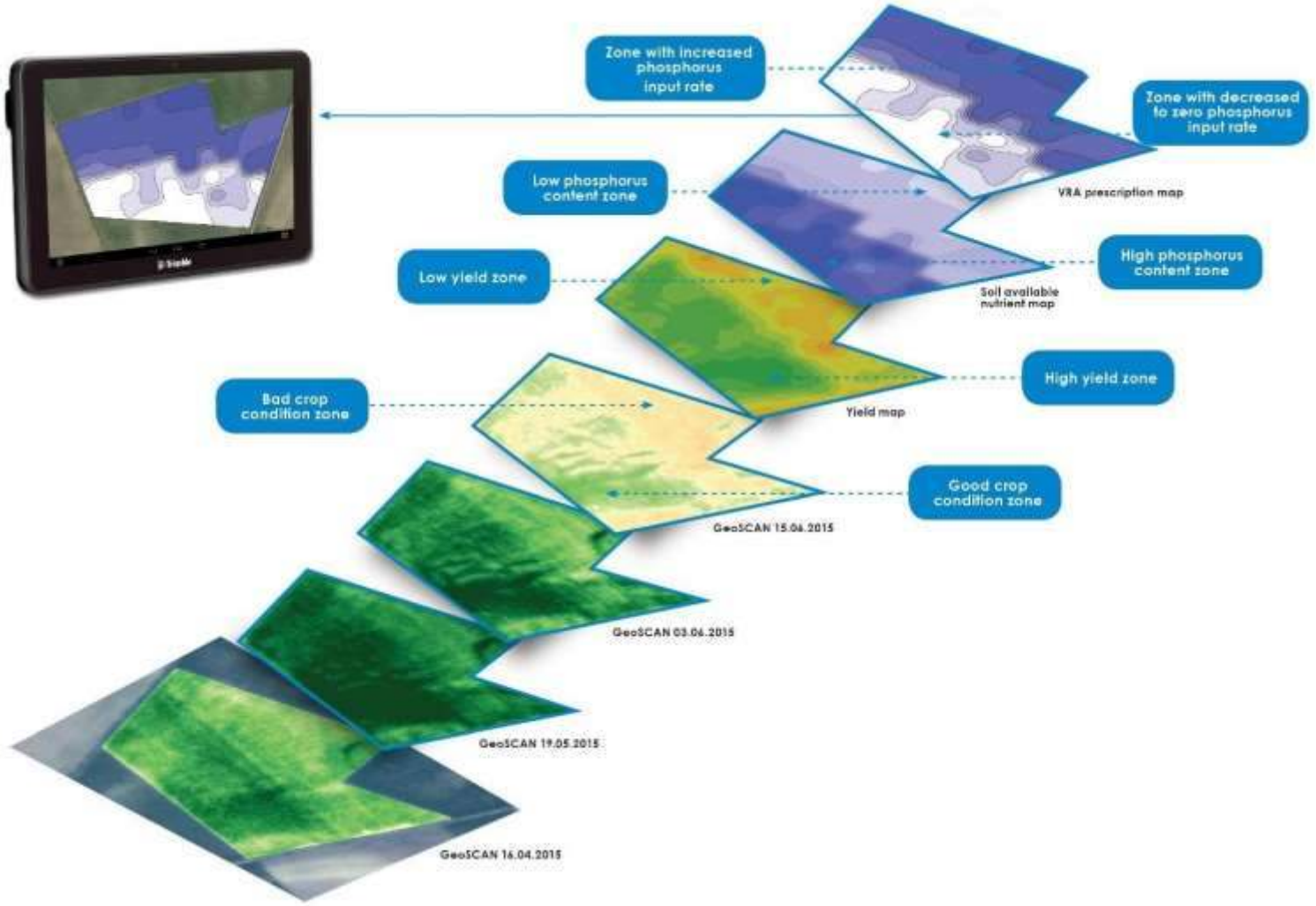
VRA - N





N VRA maps are based on the vegetation index utilizing the positive correlation between the chlorophyll and Nitrogen content.
The N VRA tool permits to create user defined management zones. The tool calculates the difference between the flat rate and the applied VRA scenario for product amount and price for the plot and provides export of ready-to-load maps in all common formats.

MAP LAYERING

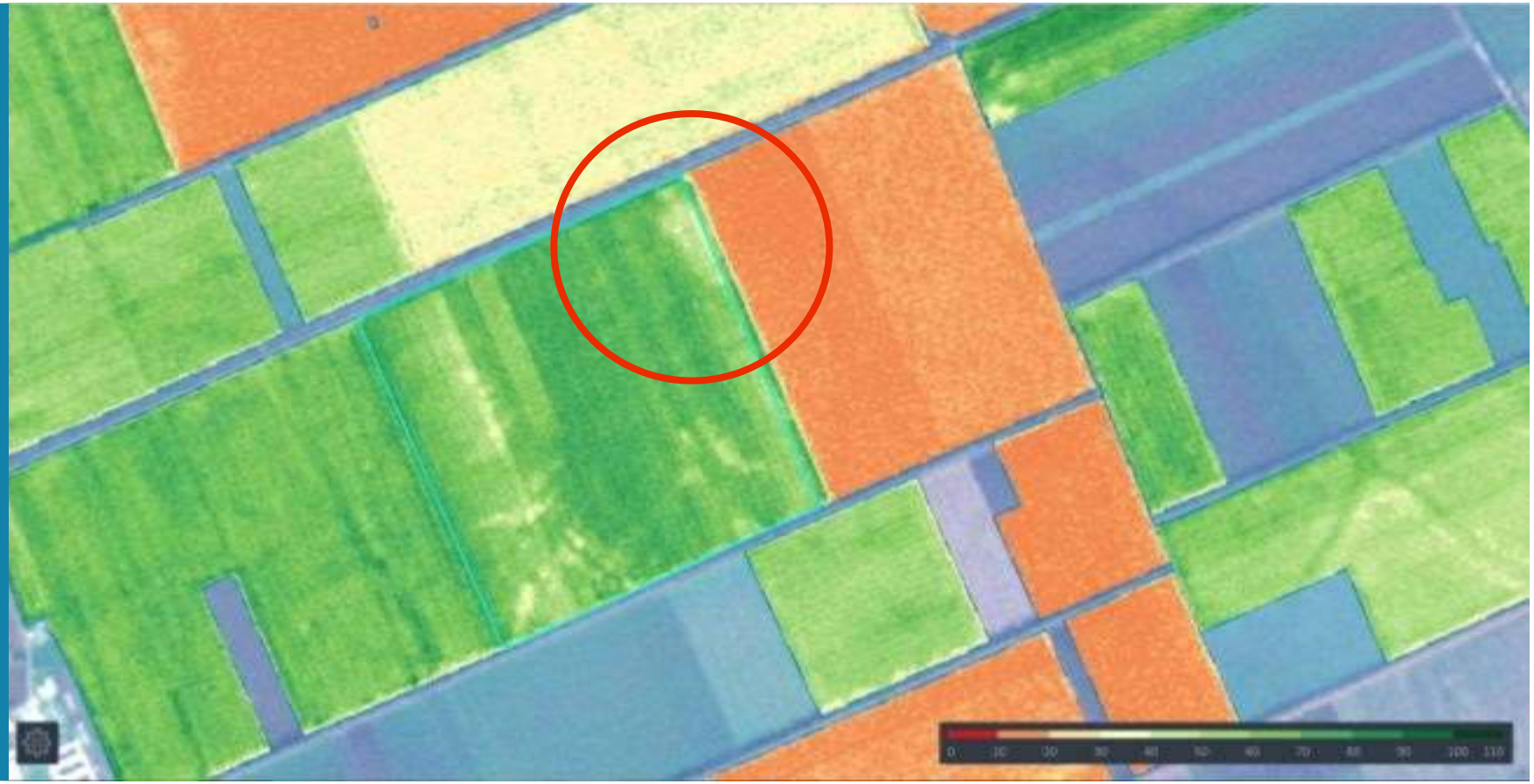


Soil and vegetation maps

The generated results from different information layers (vegetation index and soil analysis) can delineate different zones in the crop fields, which can accommodate applying variable rate applications (VRA) on fertilizing or planting activities.

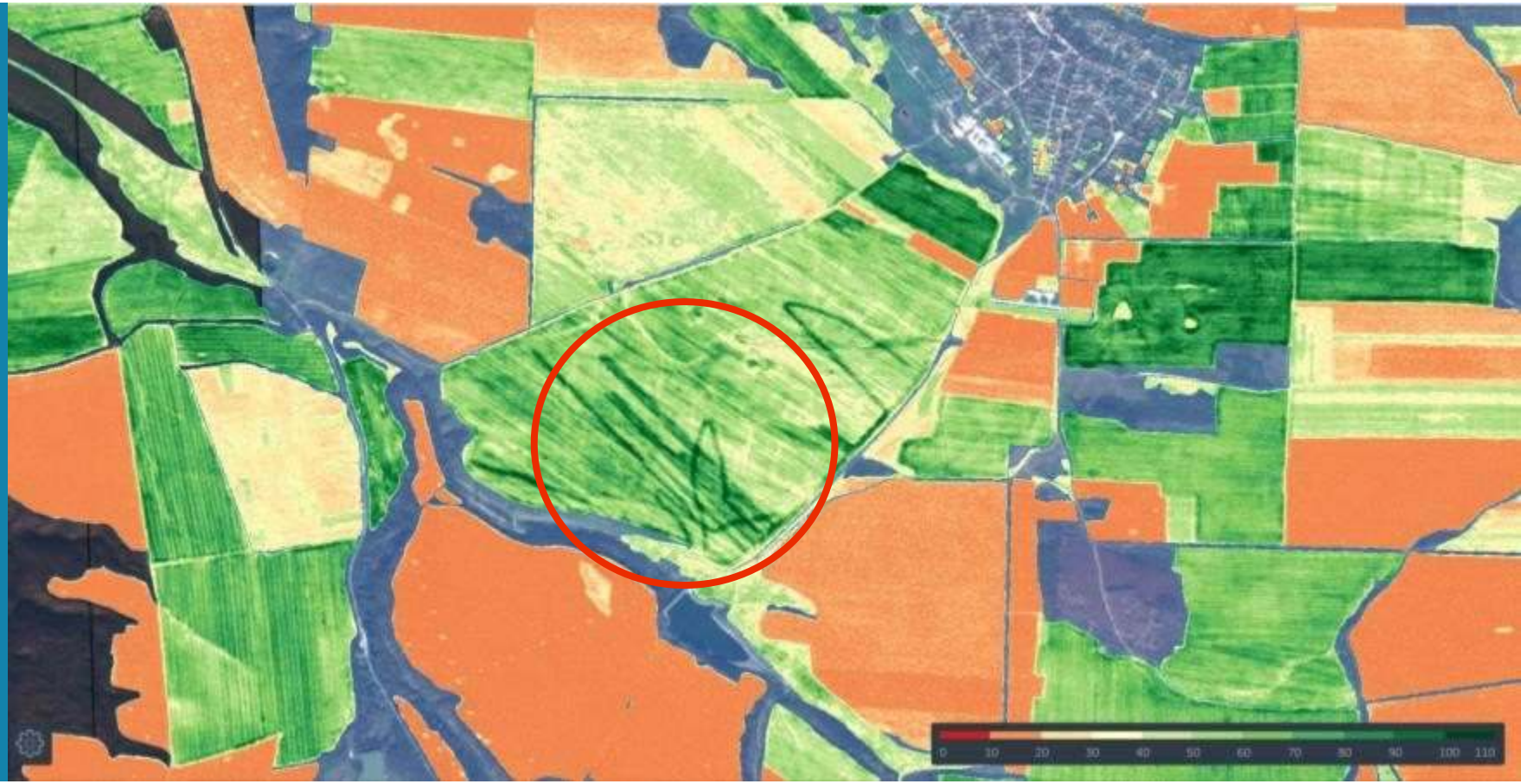
CASE STUDIES

Pest attack on winter crops



CASE STUDIES

Field operations problem



CASE STUDIES

Different winter wheat variety



TRAININGS

Group and individual trainings

Digital Technologies

Modern Facility

Proven training methods

Field Practice

Experienced lectors

WHERE DO WE TRAIN OUR TEAM AND CUSTOMERS' EMPLOYEES?

Precision farming training center located in Izgrev Village, Bulgaria














KEY POINTS



There is enormous amount of digital data available in Agriculture

Data from various sources should be integrated and presented in farmers' friendly format

Continuous improvement and reliable support

Regular and focused trainings


THANK YOU!