



Report on the results of the experiment with plant protection products

Applicant	Identification number – trial report number
ekolive s. r. o. Americká trieda 3 040 13 Košice	4/2024

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1. Experimental conditions

1.1. Basic information

Aim of the trial: To verify the biological effectiveness in maize

Variants	Type	Used products
1	control	-
2	testing	Ekofertile 10 %
3	testing	Ekofertile 5 % Microfertile 5 %
4	testing	Microfertile 10 %



5	testing	Ekofertile 5 % Microfertile 5 %
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Crop: Maize (*Zea mays*) ZEAMX

General methodologies used: EPPO PP1/152(4), PP1/181(5), PP1/135(4), PP1/239(3)

Application dates: 7.6.2024; 25.6.2024

1.2. Conditions of the experiment

1.2.1. Experimental site (field)

Experimental site	Borovce, Predné pole	Production area:	maize
Phone:			A6
Region:	Piešťany	Slope inclination:	0
Country (state):	SR	Exposure:	-

2. Crop

Crop:	Maize	Variety:	DKC 4391
The share of cereals in the sowing process:			
Pre-crop:	Winter wheat		
Sowing date:	9.5.2024	Sowing depth:	7 cm
Sowing:	75 000 cl. seeds		
Number of seeds/plants per meter of row length:		State of the seed bed:	good
Beginning of emergence (of control)	18.5.2024	Date of full emergence (of control):	20.5.2024
Line spacing:	0,75 m	Distance of plants in a row	
Plant density:			



3. Performed agrotechnical interventions:

Date	Development phase of crops	Type of intervention	Note
5.12.2023	-	plowing	
8.4.2024	-	Heavy gates	
22.4.2024	-	Spreader	
22.4.2024	-	Compactor	
10.5.2024	-	Sowing	

1.2.4. Fertilization mode:

Before sowing or by planting a crop	NPK 15-15-15	N	30,0 kg.ha ⁻¹
	200 kg.ha ⁻¹	P ₂ O ₅	30,0 kg.ha ⁻¹
		K ₂ O	30,0 kg.ha ⁻¹
The last organic fertilization:	Not fertilized		
year:	-	Amount:	-
type of fertilizer:	-	Amount of net N supplied:	-
method of application:	Spreader		
Last liming:	-	Quantity:	-
year:	-	Method of application:	-
type of fertilizer:	-		

Fertilization during the experiment: 1; 2; 3rd, 4th variant

Date	Growing phase of the crop	Type of application	Type of fertilizer	Dose fert./ha	Dose /ha	Note
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21.5.2024 1., 2., 3., 4 variant	BBCH 10	Spreader	NPK (15:15:15)	50 kg.ha ⁻¹	N – 7,5 kg.ha ⁻¹ P – 7,5 kg.ha ⁻¹ K – 7,5 kg.ha ⁻¹	-
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1.3. Scope and arrangement of the experiment

1.3.1. Basic data:

Biometric type by arrangement (according to EPPO n.r. 152(4)):

Total number of variants: 5 from that control: 1

Number of repetitions: 4

2. Site

Total box area:	15 m ²	box width:	2,25 m
		field length:	6,7 m
Treated area:	10 m ²	width of treated area:	1,5 m
		length of treated area:	6,7 m
Rated area:	10 m ²	width of the eval. surface area:	1,5 m
		length of the assessed area:	6,7 m
Collection area:	10 m ²	harvesting area width:	1,5 m
		length of harvesting area:	6,7 m

The harvest date: 17.10.2024

Box isolation:

Width of the left side	75 cm	Width of the right side	75 cm
Front protection width:	150 cm	Rear protection width:	150 cm

3. Biometric scheme of the experiment

D	3	5	1	2	4
C	1	3	5	4	2



B	4	2	3	1	5
A	2	1	4	5	3

2. Application of preparations

2.1. Trial applications - summary overview

Variant	Type	Nutrition N	Used products + water
1	control	100 %	-
2	tested	100 %	Ekofertile 10 %
3	tested	100 %	Ekofertile 5 % Microfertile 5 %
4	tested	100 %	Microfertile 10 %
5	tested	80 %	Ekofertile 5 % Microfertile 5 %

2.2. Crop stage at application

Application	Prevailing		Minimal		Maximal	
	BBCH	%	BBCH	%	BBCH	%
7.6.2024	16	80	16	90	17	10
25.6.2024	100	75	95	15	102	10

Evenness of the growth: balanced

Method of application: spraying

2.3. Application device type: backpack sprayer SOLO 425

type of nozzles:	Lumark 02-F80	number of nozzles:	4	nozzle span (m):	0,33
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height above the vegetation (cm):	30	frame width (m):	1	application pressure (MPa):	0,2
speed of movement (km/h):	2	direction of movement:		quality of treatment:	good

2.4. Meteorological data during application:

Date of application	air temperature (°C)	air humidity (%)	soil moisture	wind speed (m.s ⁻¹)	cloudiness (%)
7.6.2024	22	70	suchá	0,5	50
25.6.2024	22,5	60	suchá	0,4	37

Precipitation during application (from - to/mm): 0 mm; 0 mm

Last precipitation before application 4.6.2024 - 6,5 mm; 22.6.2024 – 5,4 mm

2.5. Other pesticides used during the experiment

Product/water l.ha ⁻¹	Application time	Dose.ha ⁻¹	Harmful organism
Maister Power/ 300 l/ha	7.6.2024	1,5 l	buriny

3. Meteorological and soil data

3.1. Meteorological data

Origin of meteorological data:

Place of measurement: Borovce

Method of measurement: meteorological station

Distance from the test: 500 m

3.1.1. Weather conditions May 2024 - October 2024 in Borovce compared with the long-term average

Month	n (1951 – 1980)		May 2024- October 2024	
	x _{td} (°C)	∑ z mm	x _{td} (°C)	∑ z mm
V.	14,1	54	17,8	60,3
VI.	17,7	80	21,1	110,9
VII.	18,9	76	24,3	40,8



VIII.	18,4	68	23,9	20,0
IX.	14,5	38	17,9	179,8
X.	9,6	42	11,7	42,4
$x_{td} (^{\circ}C) / \sum z \text{ mm}$	15,5	358	19,5	454,2

3.2. Soil

Soil type: black soil degraded on loess (Luvi – Haplic Chernozem) BPEJ 0139002

Fractions:			
clay: 39 %	silt: 58 %	Silty sand: 2 %	sand: 1%
pH: 6,53	Humus proport. (%) : 1,8 - 2	tonsoil/substrate depth (cm):	

Last soil analysis done (month/year): March 2021

Proportion found:			
mg/100 g			
Ca: -	P₂O₅: 31,16	K₂O: 26,02	MgO: 49,74

4. Evaluation

Yield (in t/ha counted for 14 % moisture)

	I.rep.	II. rep.	III. rep.	IV. rep.	Average
1	3,65	3,48	3,58	3,50	3,55
2	4,17	3,83	3,66	3,58	3,81
3	4,23	3,82	3,97	3,93	3,99
4	4,61	4,02	3,90	3,64	4,04
5	4,17	3,70	4,13	3,62	3,91

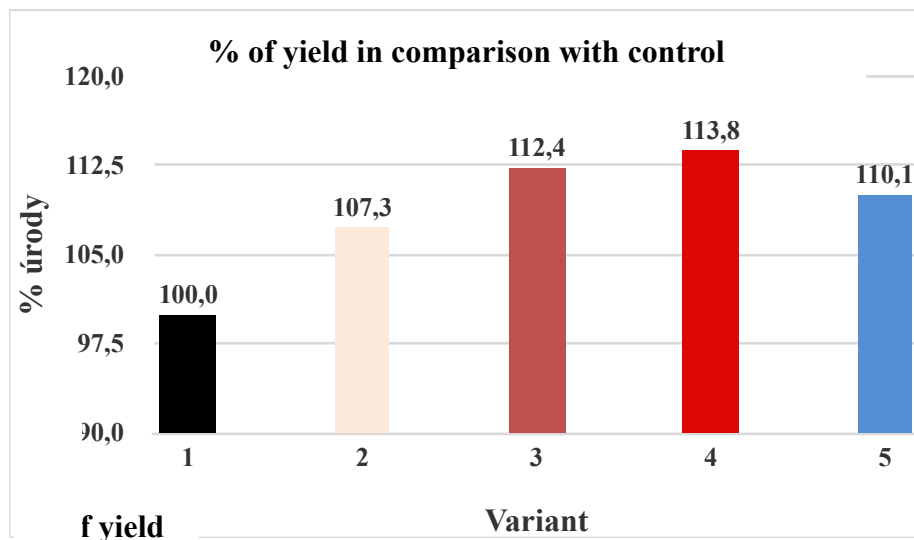
HTZ (in g)



	I.rep.	II. rep.	III. rep.	IV. rep.	Average
1	246,2	243,6	247,1	244,9	245,5
2	248,4	242,1	247,6	250,4	247,1
3	250,7	245,9	249,5	249,6	248,9
4	248,5	247,7	248,0	249,8	248,5
5	246,1	249,0	250,2	248,3	248,4

Volumetric weight (kg/hl)

	I.rep.	II. rep.	III. rep.	IV. rep.	Average
1	74,2	74,3	74,3	74,0	74,2
2	74,4	74,5	74,2	74,0	74,3
3	74,6	74,3	74,6	74,4	74,5
4	74,4	74,6	74,4	74,3	74,4
5	74,3	74,9	74,4	74,1	74,4



The corn was sown on May 9, 2024. The first application of the products was carried out on June 7, 2024 in the development phase of 6-7 true leaves (BBCH 16-17), the second on June 25, 2024, when the plants reached a height of 100 cm. The entire vegetation period was characterized by above-average temperatures (125.8% DP in the Borovce location) and above-normal precipitation (126.8% DN). However, precipitation was unevenly distributed during the vegetation period, especially the month of August was below-normal in terms of precipitation. Only 20 mm of precipitation fell (29.4% DN). Above-normal temperatures and below-normal precipitation contributed to the overall drying of the leaf area in August.

Despite the short growing season, the plants were able to utilize the potential of the applied products and all variants recorded a higher yield compared to the control variant. Variant 5, where a combination of biostimulants Ekofertile 5% and Microfertile 5% was applied in two terms with a reduced dose of nutrition by 20% (NPK 80%, other variants 100%), demonstrated the ability of biostimulants to improve nutrient uptake by plants. The yield reached 3.88 t.ha⁻¹, this represents an increase of 0.33 t.ha⁻¹ compared to the control and a decrease in yield of only 0.08 t.ha⁻¹ compared to variant 3 with the same treatment and 100% nutrition. The highest grain yield (average of 4 repetitions) was recorded on variant 4 - treated with Microfertile 10% - 4.04 t.ha⁻¹.

No signs of phytotoxicity and lodging were observed on the experimental variants.



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