

THE USE OF NITROPHOSKA FOLIAR 20.19.19 IN SOME CROPS ON DIFFERENT SOIL TYPES

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Abstract

The product nitrophoska foliar 20-19-19 is a universal foliar fertilizer, which have been tested in five experimental trials to the different agricultural and horticultural crops on the different soil and environmental conditions.

The trials were carried out on unfertilized and NP ground fertilized fields and having the following soil conditions: cambic chernozem (SCDA Podu Iloaiei, Iasi); aluviosol (SCDA Braila); cambic chernozem (SCDSZ Roman, Neamt); cambic chernozem (SCDL Bacau).

MATERIAL AND METHODS

The chemical composition of the fertilizer is shown in table 1.

Table 1

Composition of Nitrophoska foliar product

No.	Chemical compound	Unit.	Concentration on element or oxid
1	Nitrogen total (Nt)	%	19.38
2	Phosporous (P_2O_5)	%	19.92
3	Potassium (K_2O)	%	18.60
4	Calcium (Ca)	%	0.019
5	Magnezium (Mg)	%	0.62
6	Zinc (Zn)	%	0.034
7	Coper (Cu)	%	0.035
8	Iron (Fe)	%	0.101
9	Manganese (Mn)	%	0.100
10	Lead (Pb)	%	0.0001
11	Cadmium (Cd)	%	0.00005
12	Nichel (Ni)	%	0.00012
13	Cromium (Cr)	%	0.0001

The research methods were based on the foliar application in 2-5 treatments at the concentration of 0.2% in 500 l/ha solution, on agricultural and vegetables crops and 1000 liters/ha for vine.

The trials were conducted on the different soil conditions without ground fertilization and on NP ground fertilized variants.

All the maintaining crops measures were executed at the optimum level, specific for the crops in each trial location.

Efficacy analysis was considered in all the variants, comparing to the witness variant- without ground and foliar fertilization.

RESULTS AND DISCUSSION

In **winter wheat**, cropped on **cambic chernozem**, after two foliar applications was obtained an yield increase to 710 kg/ha representing 71.0 kg of grains/kg of the product applied (table 2).

Table 2

Nitrophoska product efficiency, applied on the winter wheat, Eliana variety cultivated in cambic chernozem during irrigation (SCDA Podu Iloaiei, Iasi)

Var. no.	Treatment	No. of treatm.	Conc. (%)	Yield (kg/ha)	Yield increase		
					kg/ha	%	kg/kg applied
1.	Witness	-	-	3110	-	100.0	-
2.	Nitrophoska 20.19.19	2	1.0	3820	710	122.8	71.0

- Ground fertilization N – 80, P₂O₅ - 60

In **sunflower** cropped on the aluviosol under irrigation conditions, a yield increase of 255 kg/ha were obtained after two application which corresponded to 25,5 kg of grains/kg product applied (table 3).

Table 3

Nitrophoska product efficiency, applied on the sunflower, Favorit variety cultivated in aluviosol (SCDA-Braila)

Var. no.	Treatment	Nr. treatm.	Conc. (%)	Yield (kg/ha)	Yield increase		
					kg/ha	%	kg/kg applied
1.	Witness	-		2031	-	100.0	-
2.	Nitrophoska 20.19.19	2		2826	255	112.5	25.5

- without ground fertilization

When applied on **sugar beet**, Bârsa variety, cropped on cambic chernozem, after three treatments, a yield increase was obtained of 6500 kg /ha corresponding to 433 kg yield/kg of product applied (table 4).

Table 4

Nitrophoska product efficiency, applied on sugar beet, Barsa variety cultivated in cambic chernozem (SCDS Roman, Neamt)

Var. No.	Treatment	No of. treatments	Conc. (%)	Yield (kg/ha)	Yield increase		
					kg/ha	%	kg/kg applied
1.	Witness	-	-	28200	-	100.0	-
2.	Nitrophoska 20.19.19	3	1.0	34700	6500	123.0	433

- without ground fertilization

A yield increase of 9500 kg /ha, corresponding to 633 kg /kg of the product applied were obtained after three treatments **on tomatoes**, cropped on cambic chernozem (table 5).

Table 5

Nitrophoska product efficiency, applied on tomatoes, Unirea variety cultivated in cambic chernozem (SCDL Bacau)

Var. No.	Treatment	No of. treatments	Conc. (%)	Yield (kg/ha)	Yield increase		
					kg/ha	%	kg/kg applied
1.	Witness	-	-	30 000	-	100.0	-
2.	Nitrophoska	3	1.0	39 500	950	131.9	633.0

- without ground fertilization

A yield increase of 1400 kg /ha, corresponding to 46,6 kg /kg of the product applied were obtained after three treatments **on grapevine**, cropped on luvosol (table 6).

Table 6

Nitrophoska product efficiency, applied on the grapevine, Feteasca regală variety cultivated in luvosol (USAMV Cluj)

Var. No.	Treatment	No of. treatments	Conc. (%)	Yield (kg/ha)	Yield increase		
					kg/ha	%	kg/kg applied
1.	Nefertilizat	-	-	7000	-	100.0	-
2.	Kelpak	4	1.0	8400	1400	120.0	46.6

- without ground fertilization

CONCLUSIONS

1. When applied to all crops and on all experiments, Nitrophoska Folir 20-19-19 improved plants development and drived to obtaining significant yield increase.
2. The various crops where it was applied show the quality of the product as universal fertilizer, being efficient for large crops range.
3. The nitrate content analysis carried shows a significantly reduced level on all crops where Nitrophoska Foliar was applied.

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