

USE OF NUTRIVANT PLUS PRODUCT WITH SOME AGRICULTURAL CROPS UNDER DIFFERENT PEDO-CLIMATIC CONDITIONS

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Abstract

The product Nutrivant Plus is a universal foliar fertilizer, which was tested in three experimental trials to the different agricultural and horticultural crops on the different soil and climatic conditions.

The trials were carried out on unfertilized and NP ground fertilized fields and had the following soil condition: cambic chernozem (USAMV Iaşi, luvosoil (SCD Tg. Jiu), faeoziom (INCD Pajişti - Braşov).

MATERIAL AND METHODS

Testing methodology consisted of 2-3 foliar applications of the Nutrivant Plus product, a solution of 1.0 concentration, at a rate of 500 l/ha for field crops and vegetables and 1,000 l to each application for vine; in the case of grasslands - only one application of 500 l/ha with the same concentration. Testing included eight crops: maize, sunflower, tomatoes, cucumbers, apple, vine and grassland. The experiments were organized on different soil types, on soil with or without previous fertilization.

The efficiency of experiments was referred to a control without foliar fertilization.

RESULTS AND DISCUSSION

Maize, cultivated on Cambic Chernozems, with three application, obtained a yield increase of 1569 kg kernels/ha and 104.6 kg kernels/l of applied product, respectively (Table 1).

Table 1

Yield increase determined by Nutrivant Plus product applied to maize (HS Oana hybrid), cultivated on Cambic Chernozems (USAMV Iasi)

No.	Treatment	No. of applications	Yield (kernels) (kg/ha)	Yield (kernels) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	3536	-	100.0	-
2.	Nutrivant Plus fertilization	3	5105	1569	144.3	104.6

- without previous fertilization of soil

Sunflower, cultivated on Cambic Chernozems, with three applications, obtained a yield increase of 519 kg seeds/ha and 34.6 kg seeds/l of applied product, respectively (Table 2).

Table 2

Yield increase determined by Nutrivant Plus product applied to sunflower (Select variety), cultivated on Cambic Chernozems (USAMV Iasi)

No.	Treatment	No. of applications	Yield (seeds) (kg/ha)	Yield (seeds) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	1063	-	100.0	-
2.	Nutrivant Plus fertilization	3	1582	519	148.7	34.6

- without previous fertilization of soil

Apple, grown on Cambic Chernozems, with three applications, obtained a yield increase of 6562 kg fruit/ha and 218.7 kg fruit/l of applied product, respectively (Table 3).

Table 3

Yield increase determined by Nutrivant Plus product applied to apple (Golden Delicious variety), cultivated on Cambic Chernozems (USAMV Iasi)

No.	Treatment	No. of applications	Yield (fruit) (kg/ha)	Yield (fruit) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	15783	-	100.0	-
2.	Nutrivant Plus fertilization	3	22345	6562	141.5	218.7

- without previous fertilization of soil

Vine grown on Luvosols, with three applications, obtained a yield increase of 1105 kg grapes/ha and 36.8 kg grapes/l of applied product, respectively (Table 4).

Table 4

Yield increase determined by Nutrivant Plus product applied to vine (Chasselas doré variety), cultivated on Luvosols (SCD Tg. Jiu)

No.	Treatment	No. of applications	Yield (grapes) (kg/ha)	Yield (grapes) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	4980	-	100.0	-
2.	Nutrivant Plus fertilization	3	6085	1105	122.1	36.8

- without previous fertilization of soil

Cucumbers cultivated on Luvosols, with three applications, obtained a yield increase of 4560 kg fruit/ha and 152.0 kg fruit/l of applied product, respectively (Table 5).

Table 5

Yield increase determined by Nutrivant Plus product applied to cucumbers (Cornichon variety), cultivated on Luvosols (SCD Tg. Jiu)

No.	Treatment	No. of applications	Yield (fruit) (kg/ha)	Yield (fruit) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	11690	-	100.0	-
2.	Nutrivant Plus fertilization	3	16250	4560	139,0	152,0

- without previous fertilization of soil

Natural grassland, grown on Phaeozems, with only one application of Nutrivant Plus product obtained a yield increase of 909 kg hay/ha and 181.8 kg hay/l of applied product, respectively (Table 6).

Table 6

Yield increase determined by Nutrivant Plus product applied to natural grassland (*Festuca* sp., *Phleum* sp. and *Trifolium* sp.), grown on Luvosols (SCD Tg. Jiu)

No.	Treatment	No. of applications	Yield (fruit) (kg/ha)	Yield (fruit) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	2483	-	100.0	-
2.	Nutrivant Plus fertilization	3	3392	909	136.6	181.8

- previous fertilization of soil with: N – 50; P₂O₅ – 50; K₂O – 50 kg/ha

Tomatoes cultivated on Luvisols, with three applications, obtained a yield increase of 7500 kg fruit/ha and 500.0 kg fruit/l of applied product, respectively (Table 7).

Table 7

Yield increase determined by Nutrivant Plus product applied to tomatoes (Select variety), cultivated on Luvisols (SCD Tg. Jiu)

No.	Treatment	No. of applications	Yield (fruit) (kg/ha)	Yield (fruit) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	14100	-	100.0	-
2.	Nutrivant Plus fertilization	3	21600	7500	153.2	500.0

- previous fertilization of soil with: N – 50; P₂O₅ – 50; K₂O – 50 kg/ha

Plum, grown on Cambic Chernozems, with three applications, obtained a yield increase of 2681 kg fruit/ha and 89.3 kg fruit/l of applied product, respectively (Table 8).

Table 8

Yield increase determined by Nutrivant Plus product applied to plum (Stanley variety), cultivated on Cambic Chernozems (USAMV Iasi)

No.	Treatment	No. of applications	Yield (fruit) (kg/ha)	Yield (fruit) increase		
				kg/ha	%	kg/l of foliar fertilizer
1.	Control	-	6134	-	100.0	-
2.	Nutrivant Plus fertilization	3	8815	2681	143.7	89.3

- without previous fertilization of soil

CONCLUSIONS

1. Application of Nutrivant Plus product determined for all the tested crops and in all the experiment fields significant yield increases.
2. The various crops included in this experiment emphasized the quality of this product as a universal fertilizer, ensuring efficiency for a large range of crops.

REFERENCES

1. Borlan Z., Cr. Hera, 1984. *Optimizarea agrochimică a sistemului sol-plantă*. Ed. Academiei R.S.R.

2. Borlan Z., 1989. *Fertilizarea foliară de stimulare a culturilor*. Cereale și plante tehnice, nr. XL.
3. Budoî Gh., A. Penescu, 1996. *Agrotehnica*. Ed. Ceres, București.
4. Davidescu D., Velicica Davidescu, 1992. *Agrochimie horticolă*. Ed. Academiei Române.
5. Dorneanu A., 1976. *Dirijarea feritității solurilor*. Ed. Ceres.
6. Florea N., I. Munteanu, 2003. *Sistemul Român de Taxonomie a Solurilor*. Ed. Estfalia.
7. Filipov F., I. Rusu, S. Udrescu, D. Vasile, 2005. *Pedologie*. Ed. AcademicPres, Cluj-Napoca.