Translation from Czech

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Results of pilot tests of Vermaktiv stimulus application of the maize crops for grane.

Place of tests

Agricultural cooperative Podlipan, cVitice
Dobré Pole 54, 281 06 Kostelec nad Černými lesy

Description of the locality:

Agricultural cooperatives Podlipan territory, Vitice Dobré Pole 54 is located about 25-50 km southeast of Prague. Altitude of this area varies from 210 to 428 m is mainly located in the district of Cologne.Average rainfall ranges from 600-650 mm. Heading north from Kostelec precipitation gradually decreasing. Average annual temperature varies from 8-9 ° C in the Český Brod to 7-8 ° C in the southern part of the whole. At an altitude of about 500 m in the west area declined to 6-7 ° C. Most ofthe land is located in a slightly warm area in the district slightly humid with mild winters, Length of growing season ranges from 150 to 160 days, the average growing season temperature between 13-14 ° C. Direction of the prevailing winds are mostly from the West, it is a semihumid climate, which has a value of Lang's rain factor 80 – 90.

Method:
At a designated support of the application was carried out field investigation, soil samples for soil analysis (Table No. 1) and evaluated sites with similar soil types, agro-chemical characteristics and the same pre - crop (winter wheat). Sites were selected for the application of control and habitat. Subsequently, on selected plots sown corn varieties Amoroso and a total of 82 ha, 60 ha remained untreated and 22 ha were treated post-emergence herbicide application along with the prescribed dose Milagro supporting means in a given dilution of 1:250, vegetation control was treated only by herbicide.

Table No. 1 Analyses of soil at the experimental and checkpoints posts (Mehlich 3)

Description of sample	Soil reaction	Soil reaction	Dry matter	*The content of available nutrients mg / kg of dry soil*				Cox	Humus	Nt	The need for liming
	pH/KCl	pH/H_2O	%	P	K	Ca	Mg	% dry matter	% dry matter	% dry matter	CaO q/ha
Control sample	5,23	5,75	96,55	82,6	271,9	2405	187,3	1,22	2,10	0,144	12,60
test	5,66	6,10	96,95	83,4	203,8	2466	100,7	1,22	2,10	0,143	4,20

Results:
In field investigations during ripening buds was observed in the test stand higher adventitious bud formation than the control stand, as well as formation of adventitious bracts (frame 1, 2, 3).

The control – Non-treated one.

A corn treated by VERMAKTIV Stimul after the same period.

Slide 2 Crop treated by herbicide and supporting means - formation of adventitious buds

Slide 3 Making adventitious bracts using herbicide and a means of supporting

Subsequently, samples were taken of maize plants, established the basic agrochemical parameters and evaluated as well as the concentration of risk elements in the experimental and control variant. The measured values in the cobs and stems of control and treated variants are shown in Table 2 . Field survey show that the treated vegetation found a higher increase of green mass, height of vegetation, and saturated color (compared to a control variant). The treated variant was also detected by 3-4 days earlier onset of the fertile phase and formation of fertile organs. In the development phase of maize (9) -10 plants were taken for determination of dry matter content. Treated plants had experienced an increased dry matter to control an average of 32%.When harvesting was observed in the treated variants a 28% higher yield and 10% higher of dry matter than the version control (see Annex 1 control protocol Podlipan ZD).

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Table 2 Table of the analyzes carried out on the experimental and control variant maize after application of support device

: Date of sampling: Part of the crop:	*05.08.2011*
Location	*Vitice*
Type of experiment	*Poloprovoz*
Crop (variety):	*maize*
: Part of the crop:	*Corn cob scape*

Customer	M. Demo
Organization:	Zemědělské družstvo Podlipan
Adress:	Vitice, Dobré Pole 54, 281 06 Kostelec nad Černými lesy
tel.:	

Lab.Number	Designation		*Content of basic nutritions in dry matter inv %*					*Celkový obsah v mg/kg*				
of sample	Seriál number	Varienty	P	K	Ca	Mg	Na	Al	B	Fe	Mn	S
45207	Test	Cob	0,339	0,630	0,019	0,119	0,008	46,1	2,54	48,3	11,2	1202
45208	Test	Scape	0,255	1,308	0,424	0,156	0,009	54,8	10,31	102,5	143,2	837
45209	control	Cob	0,342	0,561	0,026	0,100	0,008	45,3	2,80	35,8	11,6	1152
45210	control	Scape	0,246	1,766	0,925	0,104	0,011	59,3	11,64	113,9	200,6	1242

Lab.number	Designation		The total content of risk and trace elements in mg / kg *sušiny*									
of sample	Seriál number	Varienty	As	Be	Cd	Co	Cr	Cu	Mo	Ni	Pb	V	Zn
45207	Test	palice	0,150	0,004	0,054	0,008	0,121	5,071	0,050	0,273	0,312	2,815	20,81
45208	Test	stvol	0,353	0,007	0,181	0,060	0,134	7,762	0,079	0,176	0,387	3,902	41,20
45209	Control	palice	0,003	0,004	0,038	0,036	0,126	2,816	0,003	0,172	0,341	2,457	28,85
45210	Control	stvol	0,130	0,007	0,145	0,059	0,145	6,528	0,166	0,184	0,605	2,429	41,65

Rating:
The result of the pilot test demonstrated a significant effect of the supporting means on qualitative and quantitative parameters of maize grown. With an average comyeld of 10 t ha at 14% moisture and an icrease of 28% increase in the yeld of about 2.8 t ha. While reducing the moisture content of 10% to 12.6%, ie even a yeld increase of 3.11 t/ ha. At an average price of 1500 and 5500CZK / t corn means the increase expressed in crowns financial contribution of 12 600 to 15 400 CZK a yeld of 2.8 t / ha respectively higher by 13 995 to 17 105 CZK for a hingher yield about 3.11 t / ha.
Conclusion:
Rated pilot plant support means VERMAKTIV – stimulus did not affect the accumulation of risk and trace elements in the plant.
Identified pilot test result are only one -yar period, therefore, could be a statistical analysis of measured data and validated the reproducibility of the results.
Yet it is noticeable improvement after the applikacion of qualitative and quantitative parameters of biomass and harvested grain. At a price of 1 890 CZK / I dose of 2 l / ha, ie CZK 3 780 / ha yield increase of 2.8 t dry matter and 10% supportable and economically feasible measures.
Application can be combined with herbicides, thus significantly reduce the cost of treatment.
To verify the reproducibility of the application should be carried out over a longer period of time at different sites, to eliminate the effect of year and habitat conditions.
In Chomutov 14. 08. 2012
Ing. Roman Honzík
Annex 1 Growing application protocol agent VERMAKTIV stimulus

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