stimulation system

M-SUNAGREEN®

A massive root system!

SUNAGREEN®

Uniform productive tillers!

M-SUNAGREEN + SUNAGREEN

The system of stimulation of cereals that uses these products gradually targets the most sensitive factors during the growing season that can negatively affect the yield and the quality of the resulting production. Virtually all yield-forming elements (number of plants, number of ears, TGW, number of grains per ear) are affected positively.

A) Effect on the number of ears and wheat yield in 2011

Variants	DITANA - Manager		ČZU - Baryton		ZS Kluky - Mulan	
	number of ears	yield	number of ears	yield	number of ears	yield
treated with: fungicide seed dressing	741 pcs	**11.46 t/ha**	563 pcs	**9.64 t/ha**	486 pcs	**6.79 t/ha**
treated with: **M-SUNAGREEN 1.5 l/t** + fungicide seed dressing in the spring: **SUNAGREEN** + Moddus	802 pcs	**12.25 t/ha**	589 pcs	**9.97 t/ha**	505 pcs	**7.27 t/ha**

Source:
Ditana, Ing. Alena Bezdíčková; Czech University of Life Sciences, Ing. Pavel Cihlář; ZS Kluky, Ing. Tomáš Fiala

B) Effect on yield-forming elements and yield – possibilities of reducing the sowing rate

Winter wheat Manager date of sowing: 05 Oct 2010	TGW		Number of ears	Number of grains per ear		Yield	
	g	%	pcs/m²	pcs	%	t/ha	%
treated with: fungicide seed dressing, 27 Apr Moddus 0.4 sowing rate: **4 mil. seeds**	39.12	**100.0**	741	42.35	**100.0**	11.46	**100.0**
treated with: **M-SUNAGREEN 1.5l/t** + fungicide seed dressing 7 Apr **SUNAGREEN 0.5** ; 27 Apr Moddus 0.4 sowing rate: **4 mil. seeds**	42.65	**109.0**	777	46.47	**109.7**	12.20	**106.5**
treated with: **M-SUNAGREEN 1.5l/t** + fungicide seed dressing 27 Apr **SUNAGREEN 0.5** + Moddus 0.2 sowing rate: **4 mil. seeds**	42.35	**108.2**	802	46.17	**109.0**	12.25	**106.9**
treated with: **M-SUNAGREEN 1.5l/t** + fungicide seed dressing 27 Apr **SUNAGREEN 0.5** + Moddus 0.2 sowing rate: **3.5 mil. seeds**	42.45	**108.5**	779	47.0	**111.0**	12.16	**106.1**

- **the system is uniformly effective at different times of Sunagreen application**
- **the reduced sowing rate easily achieves a maximum yield**
- **lower doses of plant growth regulators in case of joint application**
- **the whole experiment was without lodging (ethephon 0.4 l/ha in all variants)**

Source:
Ditana, Ing. Alena Bezdíčková, 2011

Spring barley the values in brackets indicate the percentage increase compared to the control	Number of plants 22 Apr 2011	Number of tillers 7 Jul 2011	Number of ears	Yield
	pcs/m²	pcs	pcs	%
treated with: **M-Sunagreen 1.5l/t** + Raxil TNT 7 May 2010: **Sunagreen 0.5 l/ha** Sebastian variety; sown on 29 Mar 2010; sowing rate 4 mil. seeds	355.5 (109.2 %)	5.00 (120.48 %)	1002.5 (104.67 %)	**105.86**
treated with: **M-Sunagreen 1.5l/t** + Raxil TNT 9 May 2011: **Sunagreen 0.5 l/ha** Bojos variety; sown on 24 Mar 2011; sowing rate 4 mil. seeds	373.5 (109.3 %)	3.07 (115.85 %)	1046.0 (111.06%)	**105.77**

- **2010 – waterlogged soil in May**
- **2011 – extreme yields and lodging**

Source:
Ditana, Ing. Alena Bezdíčková, 2010-11

The cost per hectare of the described stimulation system amounts to **less than 300 CZK!**

Find out more on www.chemapagro.cz, agro@chemapagro.cz, tel. +420 739 593 830, +420 724 909 393

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stimulation system

M-SUNAGREEN®

A massive root system!

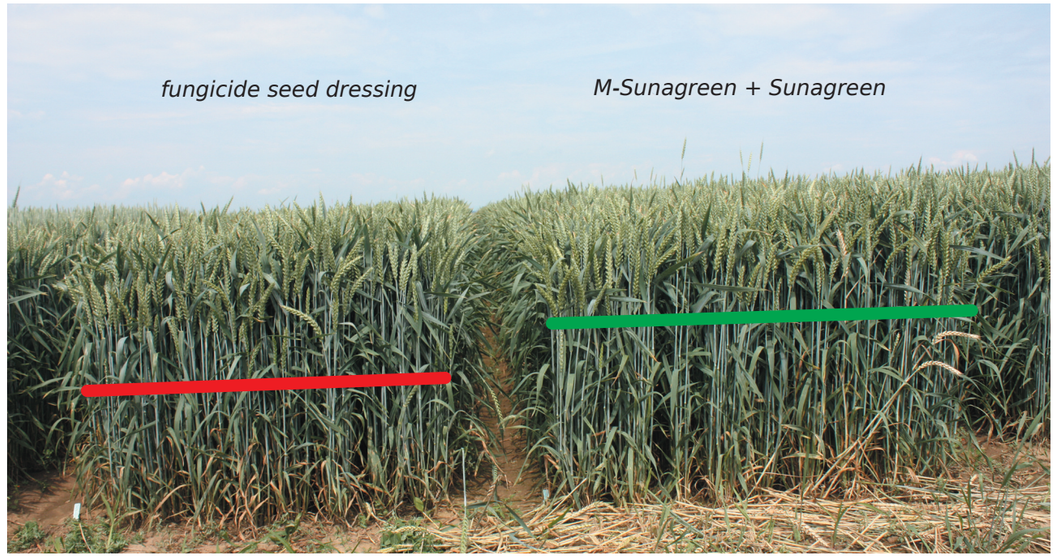
SUNAGREEN®

Uniform productive tillers!

M-SUNAGREEN + SUNAGREEN

Mutually supporting products. Seed dressing with M-Sunagreen will ensure strongly rooted and well-tillered plants, while Sunagreen evens out the tillers and suppresses the development of weedy tillers. The success and economic benefits of the application of the whole system are thus minimally dependent on the season and the crop or variety being treated.

ČESKÝ VÝROBEK



The result is a strong, balanced stand with high and quality production of grain.

Stimulation system M-SUNAGREEN 1.5 l/t of seed + SUNAGREEN 0.5 l/ha at BBCH 25-32:

- **easily integrated into existing production technologies**
- **stabilises the yield and quality of production**
- **increases the yield potential of cereals**
- **reduces the effects of declining soil fertility**
- **minimises the impact of stress factors throughout the season**

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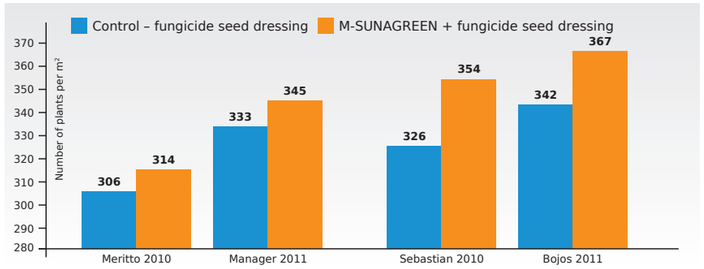
M-SUNAGREEN®

A massive root system!

M-Sunagreen introduces a new, efficient and highly cost-effective way to stimulate the growth of field crops. It is the first product specifically designed for use in seed dressing mixtures and can be combined with all registered seed dressing agents. From the earliest stages of development, it primarily affects the development of the root apparatus.

A) Effect on field emergence – number of plants per m²



- in case of poorer tillage and sowing

- in case of poorer biological quality of seed

Source:
Ditana V. Bystřice, Ing. A. Bezdíčková, 2010–2011, sowing rate 4 mil. seeds in each case

B) Effect on the root system

Source:
R.A.G.T., ŠS Branišovice, 2.11.2011

Source:
ZS Kluky, Ing. Fiala; CZU, Ing. Cihlář; Ditana, Ing. Bezdíčková;2008–2011

Weight of dry roots (10 plants – autumn)	Cubus - CZU, 2008/09		Cubus - Kluky, 2009/10		Baryton - CZU, 2010/11		Manager - Ditana, 2011/12	
	g	%	g	%	g	%	g	%
K: standard seed dressing	12.8	100.00	15.9	100.00	12.2	100.00	26.0	100.00
M-SUNAGREEN + standard seed dressing	17.1	**133.60**	21.5	**135.22**	14.7	**120.05**	32.0	**123.8**

C) Resulting effect

- in addition to nutrients, the root is a source of cytokinins

- these hormones significantly promote tillering

- the result is a strong, well-tillered plant

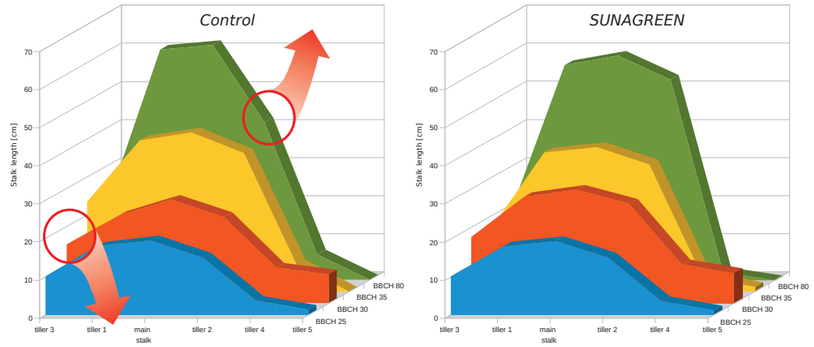
Marketing authorisation No. 3431

SUNAGREEN®

Uniform productive tillers!

Sunagreen has been a standard part of cereal-growing technology for several years now. The main task of this agent is to suppress the development of undesirable weedy tillers and optimise the number of productive stalks and even out their development. The advantages of the product include its relatively gentle and long-lasting action, the wide application window and the possibility of combining the product with all other inputs that are applied during its application period, including plant growth regulators.

A) Optimizing the number of tillers



- limits the development of redundant tillers

- more space, nutrients and energy for productive stalks

- promotion of ear development

Source:
Ditana, Ing. Bezdíčková, 2009, JJ – Sebastian

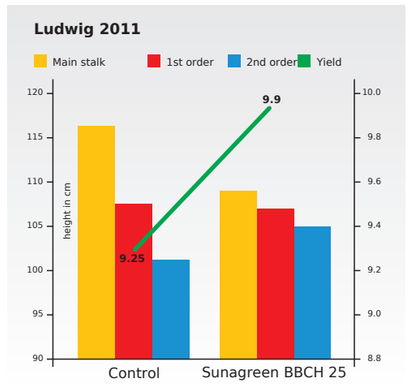
Spring barley	BBCH 25	BBCH 30	BBCH 35	BBCH 83	BBCH 83 ears	yield [t/ha]
Control	5.2	4.8	3.6	3.1	2.4	**6.25**
SUNAGREEN at BBCH 30	**5.4**	**4.8**	**2.8**	**2.5**	**2.5**	**6.54**

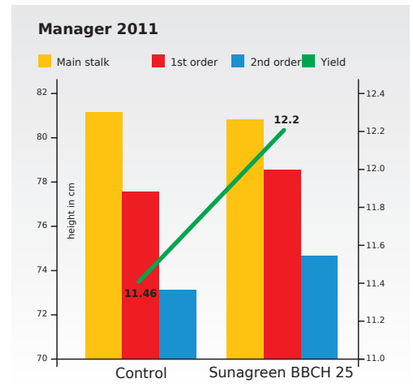
Source: UP Wroclaw, prof. Kozak, 2011

Winter wheat	BBCH 25	BBCH 30	BBCH 35	BBCH 83	BBCH 83 ears	yield [t/ha]
Control	4.8	6.1	8.1	3.1	2.3	**11.46**
SUNAGREEN at BBCH 32	**4.8**	**6.1**	**5.5**	**3.1**	**2.5**	**11.82**

Source: Ditana V. Bystřice, Ing. Bezdíčková, 2011

B) Uniformity of tillers





- increased production in higher order tillers

- simplification of fungicide protection thanks to unified growth

- improving the quality of production (TGW, bulk density, grain over sieve)

Source:
Ditana V. Bystřice, Ing. Bezdíčková 2011