

English





Viener® Zn for a good start and a good yield

Zinc is a life essential trace element for all plants and is above all important during the first stages of the development (juvenile growth) because of its influence on the auxin production, a natural growth hormone. For the seeds, zinc deficiency can have a direct effect on germination and on the growth during the first days, seeds might not germinate at all or the young plants could die soon after germination.

Most soils contain considerable amounts of Zn, except heavily weathered soils, acid tropical soils, and very sandy soils. But even if soils are rich enough and contain sufficient amounts of Zn to supply the plant, in many situations, deficiencies still occur because of limited availability! High pH, high P-concentration will limit availability considerable. Also the typical weather conditions in spring, such as cold and rainy weather, will reduce availability even more during this period. This is exactly the moment the plant needs a steady Zn-supply in order to avoid any interruption in the juvenile growth.

In later stages this problem can easily be overcome by foliar applications of Chelal® Zn, but at germination and the following days, no leaves are yet available to apply zinc this way, and thus needs to be supplied a lot closer to the seeds. Viener® Zn is a solution for this, it applies the element directly on the seed and will release it little by little to the small plant.

In this document we present the results of various trials, executed in divers situations demonstrating the effect of applications of Viener® Zn in corn, rice, cotton and wheat.



RESULTSVisual effects

Rice



Without Viener[®] Zn



With 250 ml



With 500 ml Viener Zn poer ha Viener Zn per ha



Without Viener[®] Zn

With Viener[®] Zn

Corn



Without Viener® Zn



With Viener® Zn



Without Viener® Zn



With Viener® Zn

Cotton



Without Viener Zn



With Viener 2n

Cotton:

dosage equivalent to 250 ml Viener® Zn per ha.

RESULTSRice trial - Brazil - 2014



General information

Farm: Faz Missioneira - Campo Novo do Parecis - Matto Grosso - Brazil.

Owner: Sr Leonardo José Eidt.

Crop: Upland rice under a central pivot.

Fertilization before sowing: 3 T/ha bird manure.

Fertilization at planting: 300 kg/ha of a 5-25-15 fertilizer.

Side dressing: 100 kg/ha KCl + 100 kg/ha of ammonium sulphate.

Different treatments

Total cultivated area: 120 ha.

Treated area: 5 ha.
T0: without Viener® Zn.

T1: with Viener® Zn: 250 ml Viener® Zn/ha.

Results: Yield

T0: without Viener® Zn: 4038 kg/ha

T1: with Viener® Zn: 5370 kg/ha + 1332 kg/ha











With Viener Zn









RESULTSRice trial - Italy - 2007



General information

Farm: Necchi Roberto - Turago Bordone (PV) - Italy.

Variety: Roma.

Amount of seeds used: 195 kg/ha.

Date of sowing: April 7th, 2007 - Harvest: September 20th, 2007.

Fertilization and treatments:

• Fertilization before sowing: Compost 35 T/ha.

• Fertilization done at the moment of tillering: Urea 75 kg/ha.

• Herbicide: Stam + Tripion CB.

· Herbicide: Stam.

• Fungicide: Beam + Amistar.

· Fungicide: Beam.

· Herbicide: Aura (abundant presence of cockspur grass (Echinochloa crus-galli).

Different treatments

T0: Control without seed treatment.

T1: Seed treatment: 500 gr Viener® Zn per 50 kg seeds.

Results: Yield

T0: Control: 6150 kg/ha.

T1: with Viener® Zn: 7680 kg/ha. + 1530 kg/ha

Observations

7/5/07: No visual difference observed in the development of the leaves and the root system.

29/5/07:The treated plants are higher, and at the same time the roots are significantly better developed.

2/7/07: T1: longer and more developed roots. The plant is more developed, more vigorous and higher. 5 shoots per seed.

T0: shorter roots, and therefore less deep and less developed root system. The plant is little developed in height and less vigorous. 3 shoots per seed.

10/8/07: Plants higher, more vigorous and a lot healthier. The roots are assumed to be similar.

12/9/07: Treated plants are healthier, more robust and more vigorous compared to the not treated plants.

RESULTSRice trial - Italy - 2007



General information

Farm: Necchi Roberto - Turago Bordone (PV) - Italy.

Variety: Roma.

Amount of seeds used: 195 kg/ha.

Date of sowing: April 23th, 2007 - Harvest: September 20th, 2007.

Fertilization and treatments:

- Fertilization before sowing: Compost 35 T/ha.
- · Herbicide: Stam + Tripion CB.
- · Herbicide: Stam.
- Fungicide: Beam + Rovral.
- Fungicide + Herbicide: Beam + Basta.

To control vegetation, no irrigation was done during 1 month.

Different treatments

T0: Control without seed treatment.

T1: Seed treatment: 500 gr Viener® Zn per 50 kg seeds.

Results: Yield

T0: Control: 6150 kg/ha
T1: with Viener® Zn: 7500 kg/ha.

+ 1350 kg/ha.

Observations

7/5/07: On the leaves we cannot see any difference compared to the control, but the roots are a lot better developed.

29/5/07: Treated plants are slightly higher (not significantly), but the roots are a lot more developed and longer.

2/7/07: T0: 4 shoots per seed; shorter roots, poorly developed with poor vigour; Height of the plants: no significant difference.

T1: 6 shoots per seed; a lot longer roots, which are more vigorous; Height of the plants: no significant difference, but a lot more vigorous. Negative remark: on the treated area, there was a greater presence of cockspur grass (Echinochloa crus-galli) (can be controlled easily with herbicides).

10/8/07: Substantial difference in height of the plants (+/- 10 cm). Plants a lot more healthy and vigorous, better root system. Good development of the cob, without presence of fungal infections.

12/9/07: Robust, healthy, vigorous plants with bigger cobs compared to T0. Remark: The presence of the cockspur grass was probably not related to the treatment.

RESULTSCorn trial - Brazil - 2004

General information

In collaboration with: Celeiro farm - Mr Davi Stefanelo.

Place: Sidrolândia (MS) - Brazil. Variety: Hybrid AS 3430.

Total area of the trial: 32 ha - Treated area: 20 ha.

Date of sowing: 23/11/2004.

Fertilization: 460 kg of 8-20-20 + 0,3 Zn.

Different treatments

T0: Control.

T1: with Viener® Zn: 250 ml/ha.

Results: Yield

N° of plants in the row of 30 m: TO 113 T1 115

 N° of panicle in the row of 30 m:

T1 137

Diameter of the panicles (cm): TO 19,37

T1 19.7

Length of the panicles (cm): TO 20,9

T1 23,6

Yield (kg/ha): TO **7851,7**

T1 8532,3 + 680,8 kg/ha



With Viener[®] Zn

Without Viener® Zn

RESULTSCorn trial - Brazil



General information

In collaboration with: Nossa Senhora da conceição.

Mr: Antonio Eduardo Dias Garcia.

Place: São Joaquim da Barra (SP) - Brazil.

Variety: DKB 330.

Different treatments

T0: Control

T1: with Viener® Zn: 250 ml/ha.

Results: Yield

T0: Control: 3942 kg/ha.

T1: with Viener® Zn: 5066,4 kg/ha. + 1124,4 kg/ha.

RESULTATEN

Corn trial - Italy - 2000

General information

In collaboration with: Caip Bo/Mo - Technical office.

Place: Ozzano Emilia (Bo).

Variety: Vertice (600), Not irrigated.

Date of sowing: 20/3/2000

Harvest: 2/9/2000. **Humidity:** 14 %.

Size of the plots: 787,5 m².

Different treatments

TO: Control - without fertilization.

T1: fertilization before sowing: Urea 46%: 240 kg units N/ha. T2: fertilization before sowing: Urea 46%: 240 kg units N/ha

+ Seed treatment with Viener® Zn

Results: Yield

T0: control without fertilization: 8259 kg/ha **T1:** fertilization with N: 9148 kg/ha

T2: fertilization with N + Viener® Zn: 9275 kg/ha

+ 127 kg/ha

RESULTSCorn trial - Italy - 2010



General information

In collaboration with: University Degli Studi - Torino - departimento di Agronomia.

Prof Amedeo Reyneri - Dr Massimo Blandino.

Place: Carmagnola - Italy.

Variety: Pioneer PR34N43 (FAO 500).

Dimensions of the plots: 8 lines of 10 m - 3 repetitions.

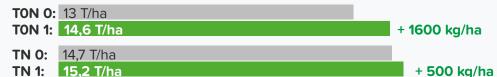
Date of sowing: 2/4 - Harvest: 16/9.

Mineral fertilization: at moment of weed control 24 may.

Different treatments

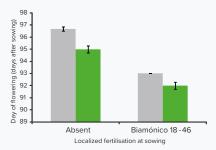
	Seed treatment	Bi ammonium phosphate (localized at sowing)	Urea (6 leaves)
TON 0:	Celest	0	250 kg N/ha
TON 1:	Celest + Viener® Zn	0	250 kg N/ha
TN 0:	Celest	200 (= 36 kg N)	250 kg N/ha
TN 1:	Celest + Viener® Zn	200 (= 36 kg N)	250 kg N/ha

Results: Yield

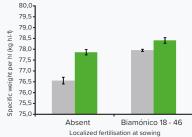


Observations

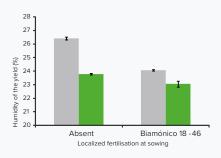
Effect of the seed treatment with Viener®
Zn on the date of flowering (indicated in days after sowing).



Effect of the seed treatment with Viener® Zn on specific weight per hl



Effect of the seed treatment with Viener®
Zn on the humidity of the seeds at
harvest



Control
Viener Zn

RESULTSWheat trial - Italy - 2015



General information

In collaboration with: Nova Sem.

The idea was testing the product on industrial scale.

Variety: Graindor.

Amount of seeds treated: 27000 kg with 120 L Viener Zn

= dosage of 0,44 L Viener Zn per 100 seeds.

Seeds per ha: 240 kg.

Different treatments

T0: Control without seed treatment.

T1: Seed treatment: 0,44 L Viener® Zn per 100 kg seeds.

Results: Yield

T0: 8000 kg/ha at 14 % humidity.

T1: 8400 kg/ha at 12 % humidity = 8560 kg/ha at 14 % humidity + 560 kg/ha.

Observations

Production year 2014/15: photo taken on 21/1/2015.

Wheat (var Graindor): comparison between plants treated and not treated Viener® Zn.



Without Viener® Zn



With Viener® Zn

RESULTSSoybean trial - Brazil - 2011



General information

In collaboration with: Fundação Centro de Experimentação e Pesquisa Fecotrigo, Fundacep, Cruz Alta (RS), Brazil. Technician: Mr Jackson Ernani Fiorin.

Climate: average anual temperature of 18°C, anual precipitation is 1700 mm, with dry periods during the summer.

This area is cultivated only 16 years.

Soil: Latossolo rosso (pH: 5,5; Clay: 50%; OM: 2,9%; P-Mehlich-I:5,6 mg/dm³; K-Mehlich-I: 81 mg/dm³; AI: 0 cmol/dm³; Ca: 5 cmol/dm³; Mg: 1,9 cmol/dm³; S: 6 mg/dm³; Zn: 2,3 mg/dm³; Cu: 6,4 mg/dm³; Mn: 11 mg/dm³; B: 0,3 mg/dm³)

General conditions of the trial:

- Treated area: 30 m² 4 repetisions.
- Previous crop: Wheat weed control before sowing with: Glyphosato.
- Date of sowing: 26/11/2010 Vairity: Fundacep 61RR density: 0,45 m between the lines.
- Fertilization: 300 kg/ha of 2-20-20.
- Treatment of the seeds with inseticide and fungicide: Standack Top (piraclostrobina + tiofanato metílico + fipronil).
- · Herbicide: Glyphosate.
- Insecticide: Match CE (Iufenurom) + Engeo Pleno (tiametoxam + lambdacialotrina).
- Fungicide: Opera (pyraclostrobin + epoxiconazole); Priori extra (azoxistrobina + ciproconazol).

Different treatments

TO: control.

T1: seed treatment: 250 ml Viener® Zn for the seed of 1 ha.

+ foliar applications (Landamine® BMo 2 L/ha 40 days after sowing)

Results: Yield

T0: Control: 3001,9 kg/ha

T1: with Viener® Zn and Landamine® BMo: 3147,2 kg/ha + 145,3 kg/ha



Use of the product

Viener® Zn is used directly on the seeds. It is important to assure an even distribution of Viener® Zn.

Miscibility: Viener® Zn is miscible with most pesticides and herbicides used in seed treatment. In no case shall BMS Micro-Nutrients be liable for adverse effects on seed germination resulting from mixture with other products. In all cases, it is advisable to conduct a preliminary germination test. In case of doubt, consult our technical service.



Preparation of the solution: Use Viener® Zn directly on the seeds. Apply uniformly. Viener® Zn can be diluted with water. Seeds have to be dried after application. Avoid excessive dilution in order not to wet the seeds too much and to prevent unwanted seed germination.





