User Application Report

Product:
Penergetic-k &-p

User:
3 farms in Brazil

Consultant:
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Renovavel Ltda
Ma Enos

Date:2014

Trials on Fertilizer for Wheat Growth

Trial tests with two varieties of wheat (CD150, Iguacu) in two farms aimed to achieve higher production and to reduce costs in using less standard, respectively chemical fertilizer.

Summary Introduction

- The application of Penergetic are mostly done together with other products that means they go together with the usual procedure of the farmer.
- The Penergetic Partners in Brazil have developed a own calibration of fertilizers, according to the history of the 3 last years, regarding productivity, compactation, adubation, plant rotation, cover crops etc., the fertility of the soils, the plant and the wanted productivity.
- Farmer´s soil analysis was looking at N, P, K, Ca, Mg, S

Facts and Figures

Penergetic treatment

RESULTS	■ **Better vegetative development: Plants had a more intensive green color, larger leaves, more uniformity.** ■ **Higher grain quality.** ■ **Better radicular quality.** ■ **Less disease attack.** ■ **Costs for fertilizing were reduced.**

APPLICATION – Detailed instruction

Farm (1): Ot (FB)
Variety of wheat: CD150
Cycle: 125 days

Treatment	Planting fertilization		Topdressing	
	Formula	kg/ha	Formula	kg/ha
Standard	15 09 20	300	45 00 00	123
Standard + Penergetic	15 09 20	300	45 00 00	123

Treatment	Area (ha)	Data		Productivity (sc, t, @/ha)	
		Plantation	Harvest	Real	Relative
Standard	32,85	18.04.2013	06.09.2013	45,3	100 %
Standard + Penergetic	32,85	18.04.2013	06.09.2013	55,1	121 %

Observations: the farmer gave us these results. His area had had frost and that affected the yield. According to the farmer, the area treated with Penergetic resisted better against the negative effects of the frost.

Farm (2): A. M. (TU)
Variety of wheat: Iguaçu

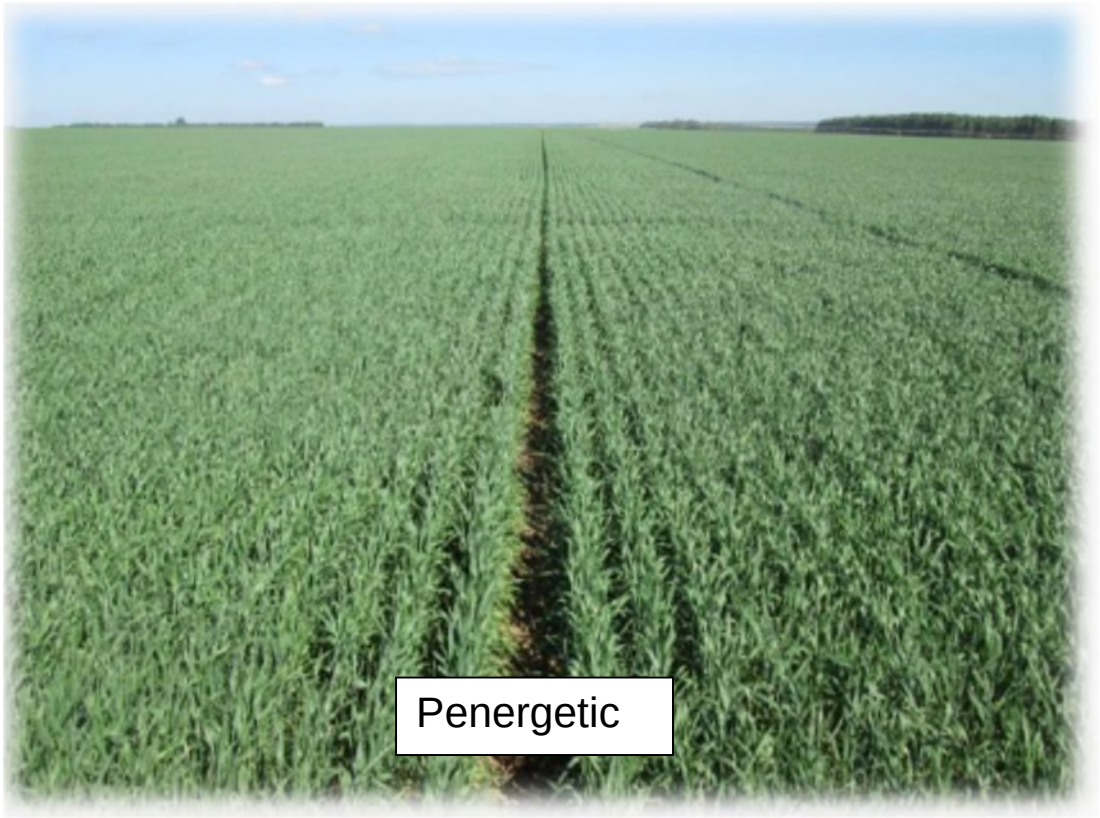
Treatment	Planting fertilization		Topdressing	
	Formula	kg/ha	Formula	kg/ha
Standard	12 24 16	200	Urea spray	200
Penergetic	Urea on the line	50	Urea spray	200

Treatment	Area (ha)	Data		Productivity (sc, t, @/ha)	
		Plantation	Harvest	Real	Relative
Standard	0,4588	19.06.2014	05.11.2014	22,16	100 %
Penergetic	0,6412	19.06.2014	05.11.2014	26,25	118 %

Observations: The plants treated with Penergetic had a more intensive green color and presented larger leaves because of the better vegetative development. Greater uniformity on the Penergetic area. Higher Grain Quality on the Penergetic area, better radicular development, and smaller diseases attack.

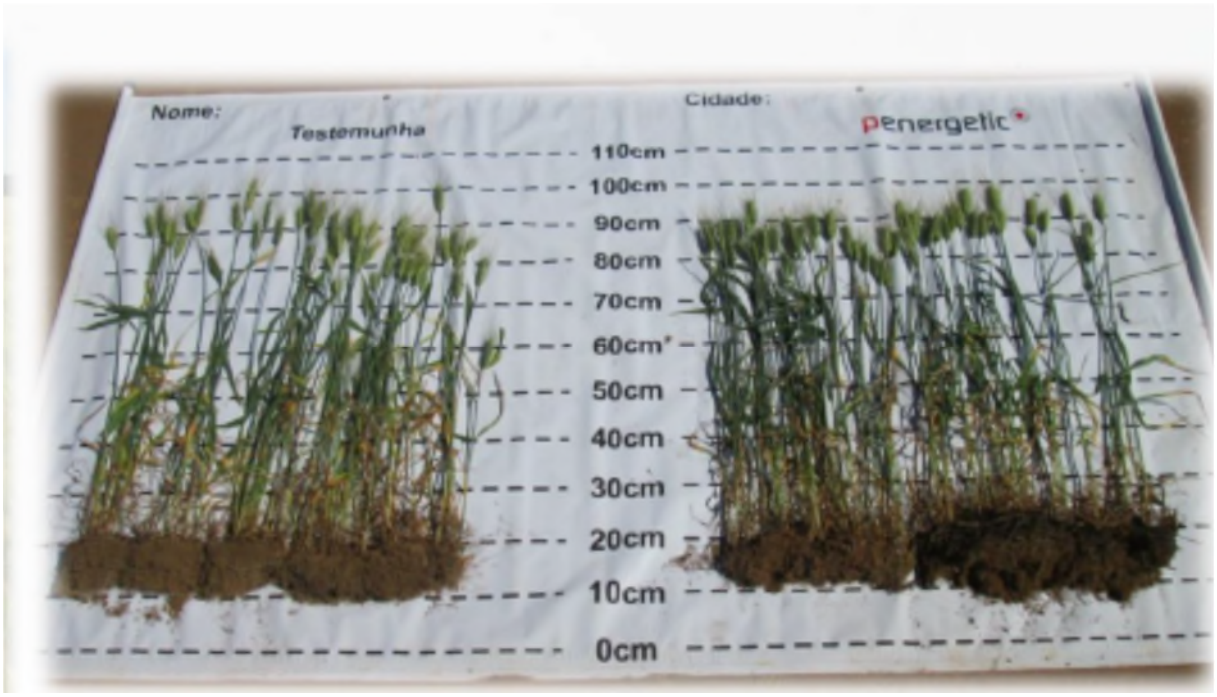
RESULTS – see the difference in comparison

Growth of Fields



RESULTS – see the difference in comparison

Growth of Roots



Control **Penergetic treated**

APPLICATION – Detailed instruction

Farm (3): M.
Variety of wheat: BRS-264
Treatment: T1 = Standard 45ha
T2 = Standard + Penergetic 42 ha

Treatment	Planting fertilization		Topdressing	
	Formula	kg/ha	Formula	kg/ha
Standard	05 24 18	450	Urea	200
Standard + Penergetic			Urea	245

Treatment	Production (sc/ha)	Investment (sc/ha)	Saldo (sc/ha)	Gain (sc/ha)
Standard	99.35	-10.00	89.35	0.00
Standard + Penergetic	96.18	-03.00	93.18	+3.83

Wheat in 10/August/2014 = R$ 47,00/sc (Fonte Agr. Rampelotti).

With less investment in phosphorus fertilizer and potassium, T2 treatment with **Penergetic** has demonstrated a **financial gain of 3.8 sacks or R $ 180.00 / ha**, compared to the standard of the farm. However we also wait for the chemical fertility results that allow us to assess the availability of elements in the system balance (what comes out what goes) as well as a better understanding of **the total phosphorus in the soil** through specific analysis. However, assessing the **chemical, physical and biological** attributes give us a better understanding of the production system limitations.