AGROSTEMIN

Dr. Danica Gajić

THE INFLUENCE AND EFFECTS OF APPLICATION OF AGROSTEMIN® ON SUGARCANE

(Saccharum officinarum L.)

– demonstration experiment on plantations of "Colonial"*–

* alcoholic beverages manufacturer

The experiments were conducted on "Colonial" alcoholic beverages manufacturer plantations in the city Aquiraz – CE Brazil, during 2009 and 2010 years.

Type RB 92.579 of sugarcane was used.

The treatment with **AGROSTEMIN®** was conducted without adding fertilizers, with adding 50% or 100% of the standard quantity usually used at the estate: for basic fertilization – 300 kg/ha MAP into the furrows and 300 kg/ha of NPK formula 15-05-20 for sowing.

The experiments were done in five repetitions and final results were dated by January 2010., when the age of plants was 11 months after planting.

EXPERIMENT 1th

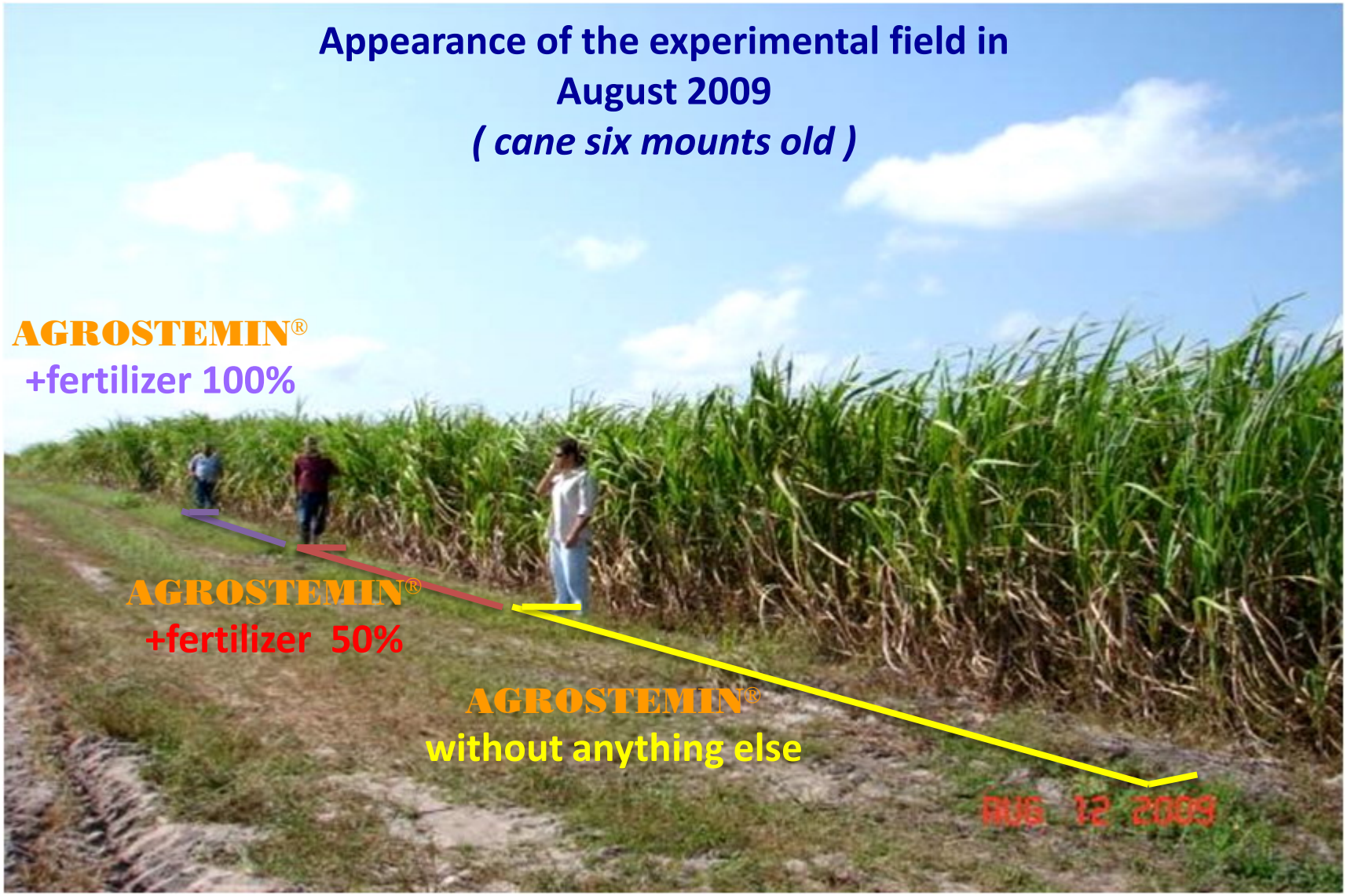
AGROSTEMIN® was applied by immersing seedlings for 15 minutes into the water solution of preparation in the concentration of 3 g (of **AGROSTEMIN®** "gold") to 100 l of water. After that the cuttings were laid into the furrows.

Obtained result indicates that **AGROSTEMIN®** influences significantly the productivity since it has been increased by 6,38% when compared with the plants treated with conventional agents.


AUG 12 2009

Appearance of the experimental field in August 2009

(cane six mounts old)



Appearance of the experimental field in January 2010

(cane eleven months old)

AGROSTEMIN®
+fertilizer 100%

Sampling by mowing

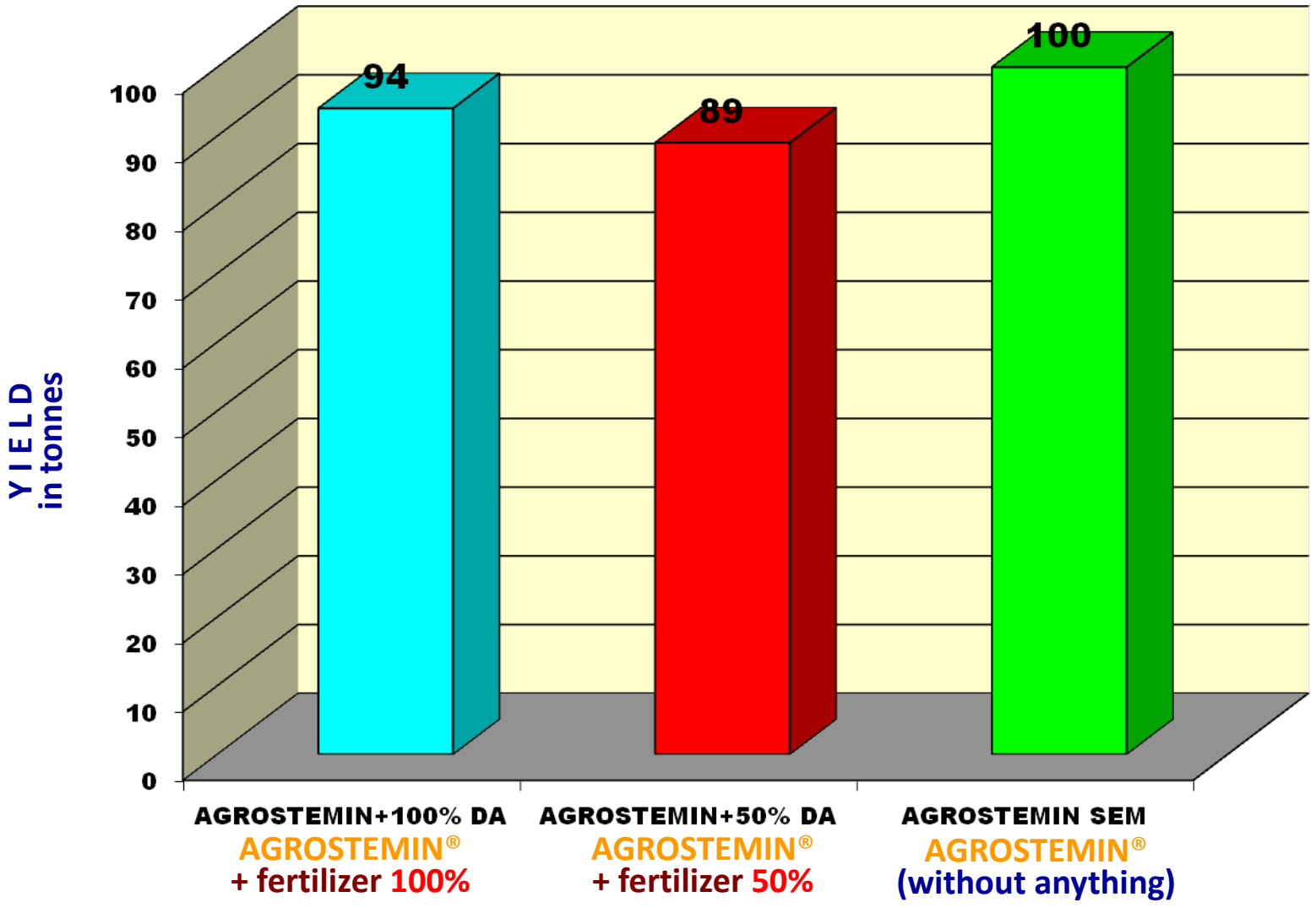
Results
(Test I)

Harvesting was done in January 2010 by mowing and collecting of straw from the entire plot for final weighing of the yield. The yield is expressed as straw mass per hectare in order to make the results interpretation easier.

The experiments were done in five repetitions.

The results obtained are illustrated in the columns of the graph at the following slide.

It can be seen that the yield (100 t/ha) obtained by the combination without fertilizer (only **AGROSTEMIN®**) is 12.36% higher than with the combination of 50% fertilizer + **AGROSTEMIN®** (yield: 89 t/ha) and 6.38% higher than the variant with 100% fertilizer + **AGROSTEMIN®** (yield: 94 t/ha)


YIELD
in tonnes
100
90
80
70
60
50
40
30
20
10
0
94
89
100
AGROSTEMIN+100% DA
AGROSTEMIN®
+ fertilizer 100%
AGROSTEMIN+50% DA
AGROSTEMIN®
+ fertilizer 50%
AGROSTEMIN SEM
AGROSTEMIN®
(without anything)

UNTREATED

TREATED

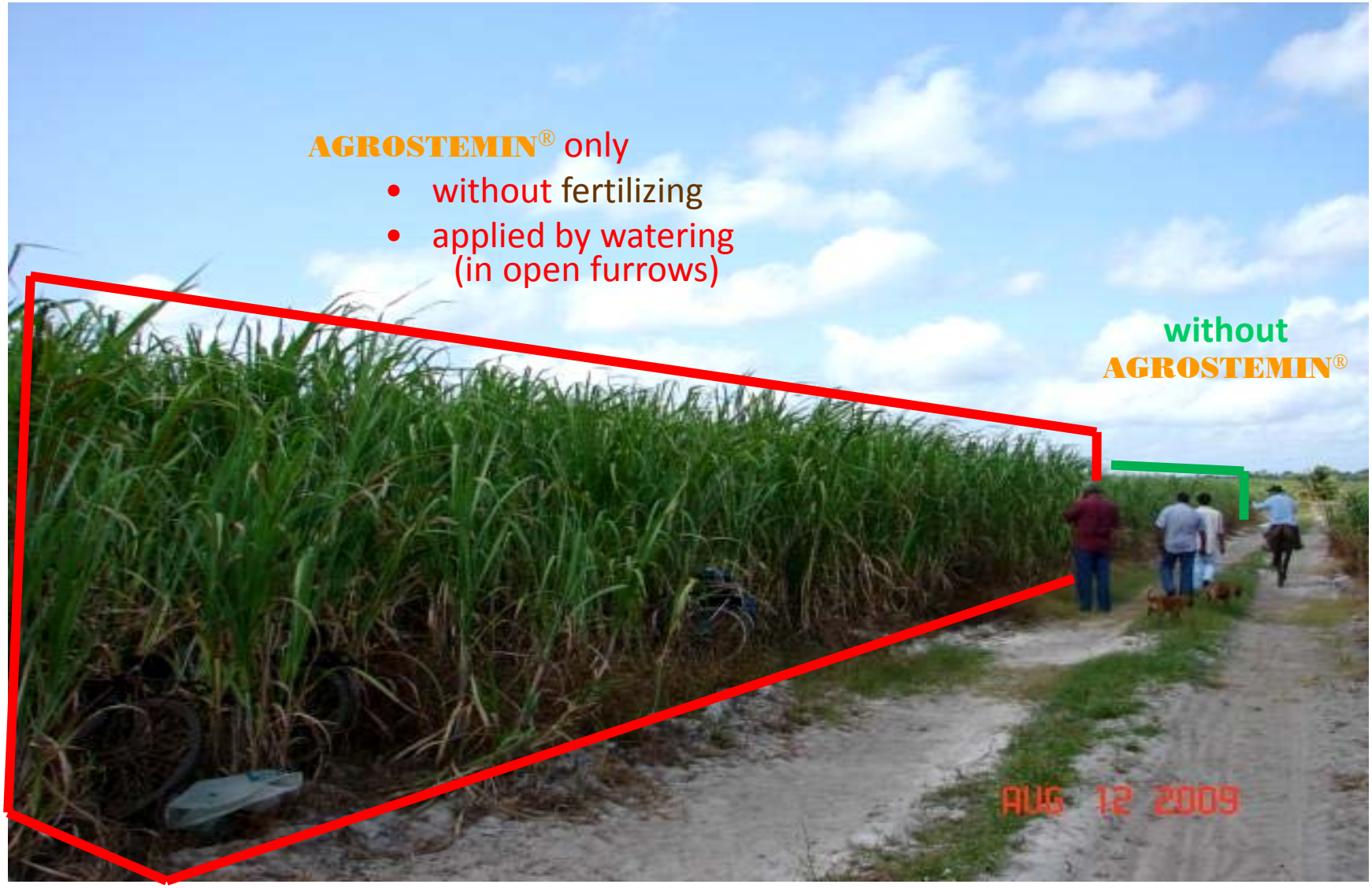

JAN 29 2010

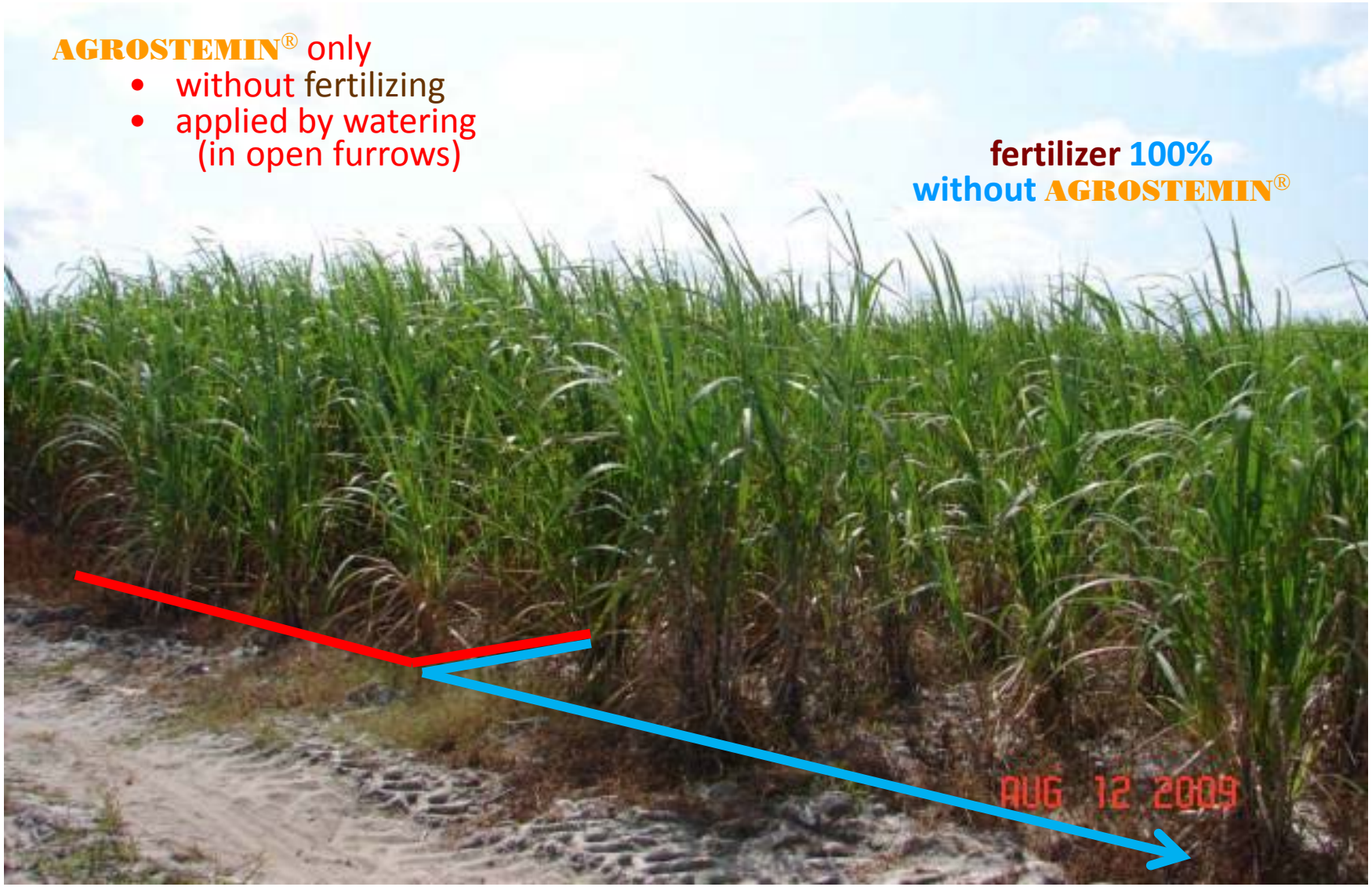
TEST II

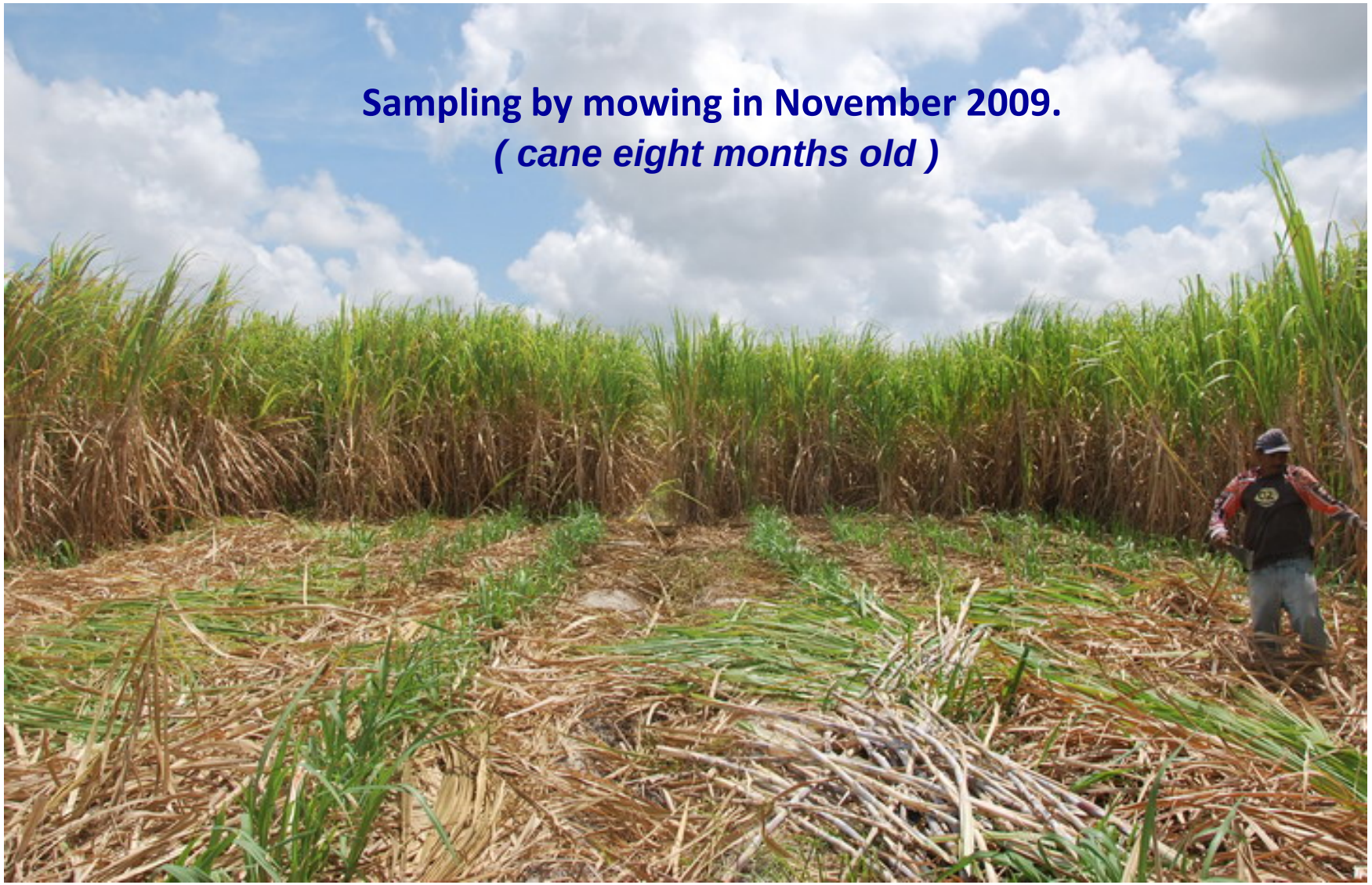
Upon laying into furrows, the seedlings were sprayed with **AGROSTEMIN®** solution in concentration of 3 g per 100 l of water.

After the furrows were sprayed with 800 l of solution (30 g per hectare of **AGROSTEMIN®** in 1000 l of water), they were „closed“ (the laid plants were covered with earth).

The evaluation was made starting from the eighth month upon seeding.


AGROSTEMIN® only
• without fertilizing
• applied by watering (in open furrows)
without AGROSTEMIN®
AUG 12 2009


AGROSTEMIN® only
• without fertilizing
• applied by watering
(in open furrows)
fertilizer 100%
without AGROSTEMIN®
AUG 12 2009


Sampling by mowing in November 2009.
(cane eight months old)

Results
(Test II)

Sampling was done in October, November and December 2009, and in January 2010 the entire plot was mowed down and the straw collected for the final weighing of the yield.

The yield is expressed as straw mass per hectare in order to make the result interpretation easier. The results obtained are illustrated in the columns of the graph at the next slide.

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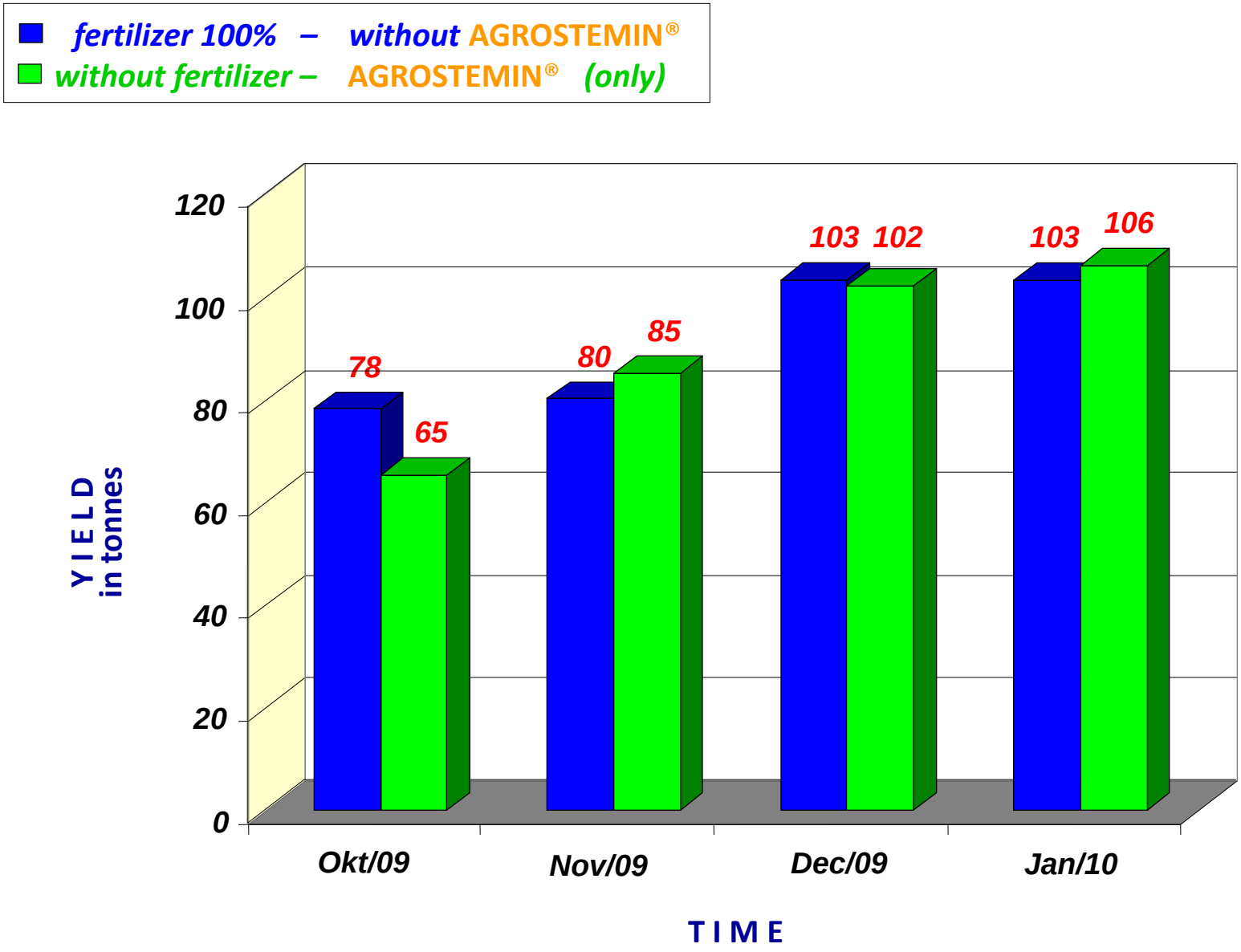
It can be observed that in cases when fertilizers were not applied the same trend is maintained, without any difference during the entire experiment when compared with complete fertilizing.

It can be concluded that the effect of **AGROSTEMIN®** application is rather outstanding taking into account the type of soil (sandy soil, so called „Quartizoza“) which is very poor as a rule.


fertilizer 100% – without AGROSTEMIN®
without fertilizer – AGROSTEMIN® (only)
120
100
80
60
40
20
0
78
65
80
85
103
102
103
106
Okt/09
Nov/09
Dec/09
Jan/10
YIELD in tonnes
TIME

Mowing cane experimental plots in January 2010

(cane eleven months old)

EVALUATION OF ROOT SYSTEM

Complete sods were pricked out, digging as deep as possible in order not to damage the root system.

The following slides illustrate differences in roots for plants sampled in December 2009 and January 2010..

It is obvious that the root system of the plants from the plots where AGROSTEMIN® was applied is much strongly developed.

This effect of **AGROSTEMIN®** is very important for every culture, considering that more developed root system makes a plant more efficient, stronger and enduring.

FERTILIZER
only

AGROSTEMIN®
without anything else

December 2009

December 2009

AGROSTEMIN

January 2010

with 100%
FERTILIZER

AGROSTEMIN®
without anything else

Estimation of sugar yield in January 2010.

ANALYSIS OF TECHNOLOGICAL RIPENESS OF CANE IN JANUARY 2010

Technological ripeness was determined by measuring saccharose content by Brix hydrometer (in Degrees Brix - °Bx) of juice sampled at the two ends of the same stalk.

Technological ripeness is defined by the ratio of saccharose quantity at the end and at the bottom of the stalk expressed in degrees Brix.

It was raining on the measuring day in January 2010 and the quantity of water sediment reached 19 mm, as opposed to two days earlier when it was 8 mm.

The index of the cane technological ripeness, fertilized and untreated by **AGROSTEMIN®** was 0.45, while the index of the cane treated only with **AGROSTEMIN®** was 0.75.

They both had 20 degrees Brix at the bottom, but the fertilized cane had 9 degrees Brix at the top, while the cane treated with AGROSTEMIN® had 15 degrees Brix at the top.

Based on the previously presented results, it can be concluded that:

- ✓ **AGROSTEMIN®** *has rather a positive effect on sugar cane*
- ✓ *Better root development would undoubtedly be important for the yield in later stages (subsequent mowing)*
- ✓ *It provides for savings in logistics (instead of 600 kg/ha only 30 g/ha were used)*
- ✓ *It is realistically profitable*

AGROSTEMIN

Dr. Danica Grujić

www.agrostemin.com