

Progress Report Sugarcane Ratchaburi

26.6,2010



- **Introduction:**

- Test site location Ratchaburi, 120 km west of Bangkok.
- Plantation size 240 Rai, connected to Sugarcane farmers group.
- Planting to harvest cycle 12 month.
- Test site is in 3rd growth cycle (2 previous harvest already).
- First HG spray application mid April 2010 on 2 Rai, Control group - next field about same size.

- **Observation:**

- Cane development after first spray proved completely insect free and pure white quality of cane.
- Brix value in early stage showed through out 1 point higher than control group.
- Control group suffered from brownish contamination in inner and outer circle of Cane.
- Juice of Control group shows brownish coloring compared with pure white juice in **HERBAGREEN®** plants
- Control group suffers from worm infestation inside of cane, and white insects housing between leafs and stem.
- Control group leafs are eaten and damaged by leaf eating insects, control group non.
- Development of Stems and amount of stems are more and intense at pl **HERBAGREEN®** ot. After 4 Month between 19 and 21 stems are growing healthy out of Soil per Plant. At the Control Plot only 12-16 Stems are developed per plant.
- Brix Value gap from 4 month old **HERBAGREEN®** Plants has grown significantly to Control Plants. (Control 11-12 Brix, HG Plants 15-17 Brix)
- Leaf width, length and coloring are also significantly better of **HERBAGREEN®** plants than Control plants.
- Comments of plantation owner: plants look better and healthier than control group, he is positively surprised about speed of growth and he expect a 2 month shortened growth period. As the test site is in its 3rd growth circle, the plant has a vitality as in a first growth plantation. After the first plantation usually the out put reduces with every further crop cycle.

Test will be further monitor until harvest due date at the end of 2010.

Mixing *HERBAGREEN*® and usage of Equipment



Slim body Traktor suitable to drive between rows



Pre-mixed *HERBAGREEN*® poured into water tanks



Final solution ready to be sprayed



First manual spraying at **night time** (better absorption)

1 month old plants ready to be sprayed



plants with Sugar leaf straw to protect grass growth



HERBAGREEN® filed view



Water irrigation pipe (out of order)



Sugar row distance 1,7 meter (suitable for slim tracktor)

Pest infestation in early growth stage



Leafs eaten up by Insects



Mite / Insect waste



Worm damage in young Cane



Worm damage in 4 Month old Control Plant

2nd and 3rd Spraying at Test Site



Technology trial (hand held)



Left side field: Control group / right side **HERBAGREEN®**



Slim tractor ready for action, 4 spray nozzles at bottom of tank



Clearly better growth at **HERBAGREEN®** side

Comparison Control Group with **HERBAGREEN®**



Control group has round bowed leaves with out strength and dynamic **HERBAGREEN®** with bigger Leafs and straight up electrified appearance

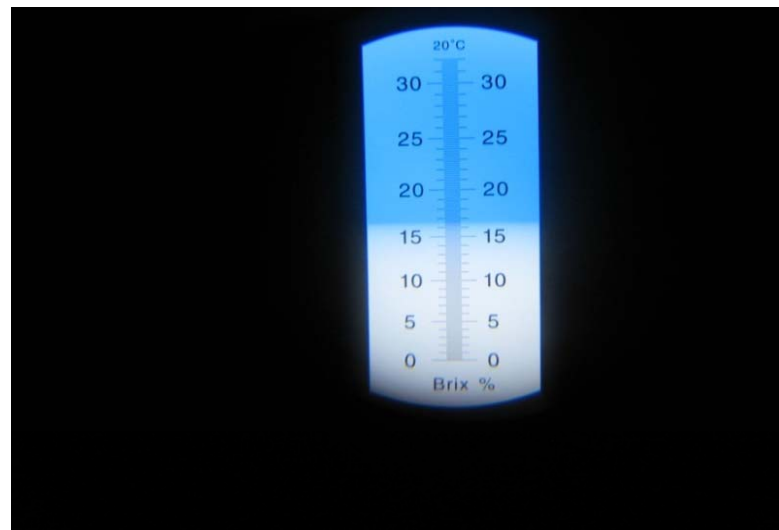


Contaminated control cane compared to pure white **HERBAGREEN®** cane **HERBAGREEN®** leaf with wider, longer and darker Result

Brix improvement after 4 Month and 3 sprayments



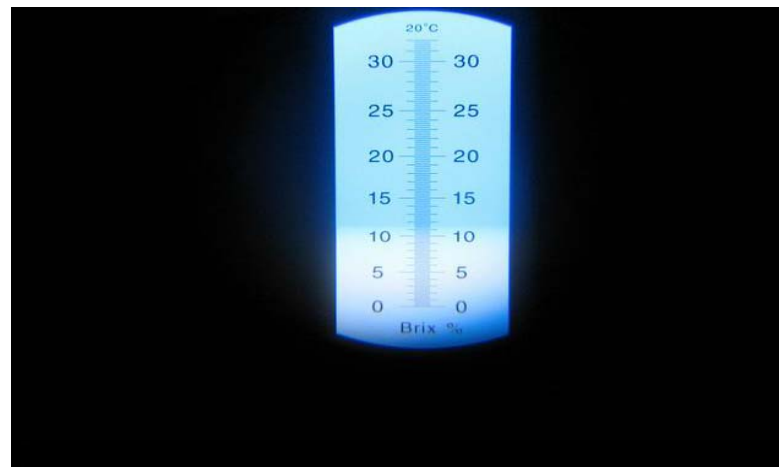
Brix testing inside of Sugarcane field



Brix Result of **HERBAGREEN®** Plant 15-17

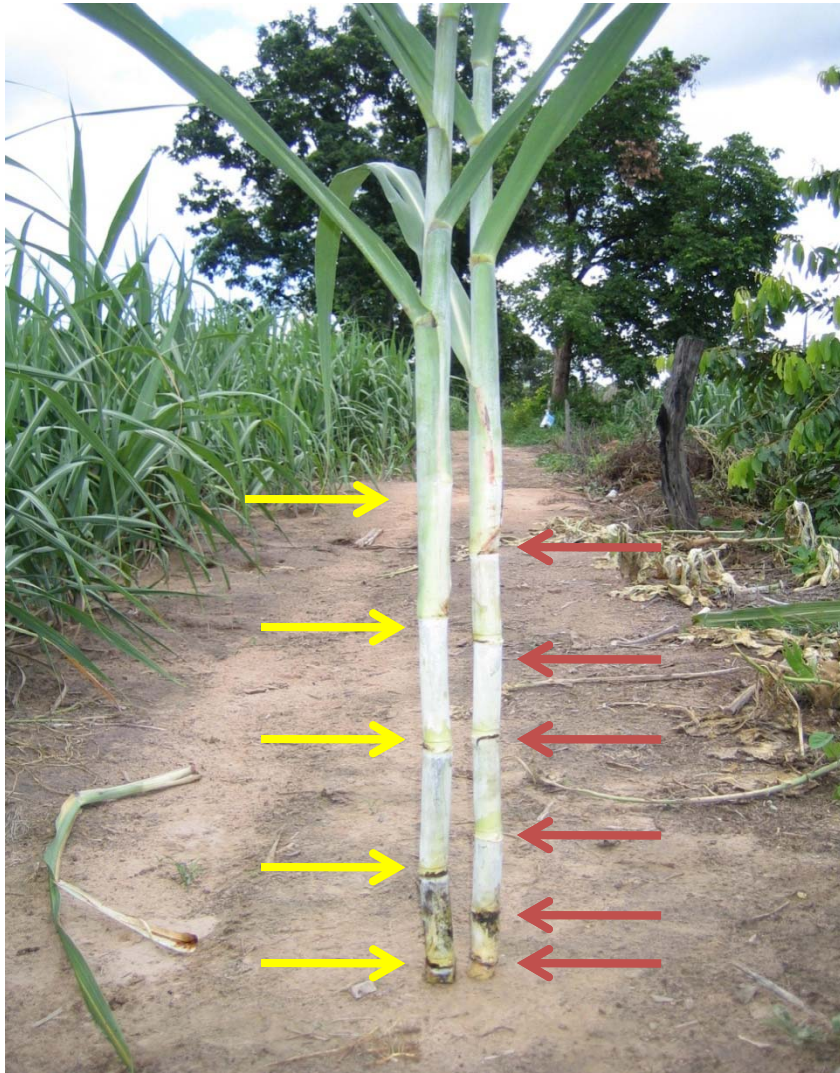


Dynamic / electrified **HERBAGREEN®** Sugarcane

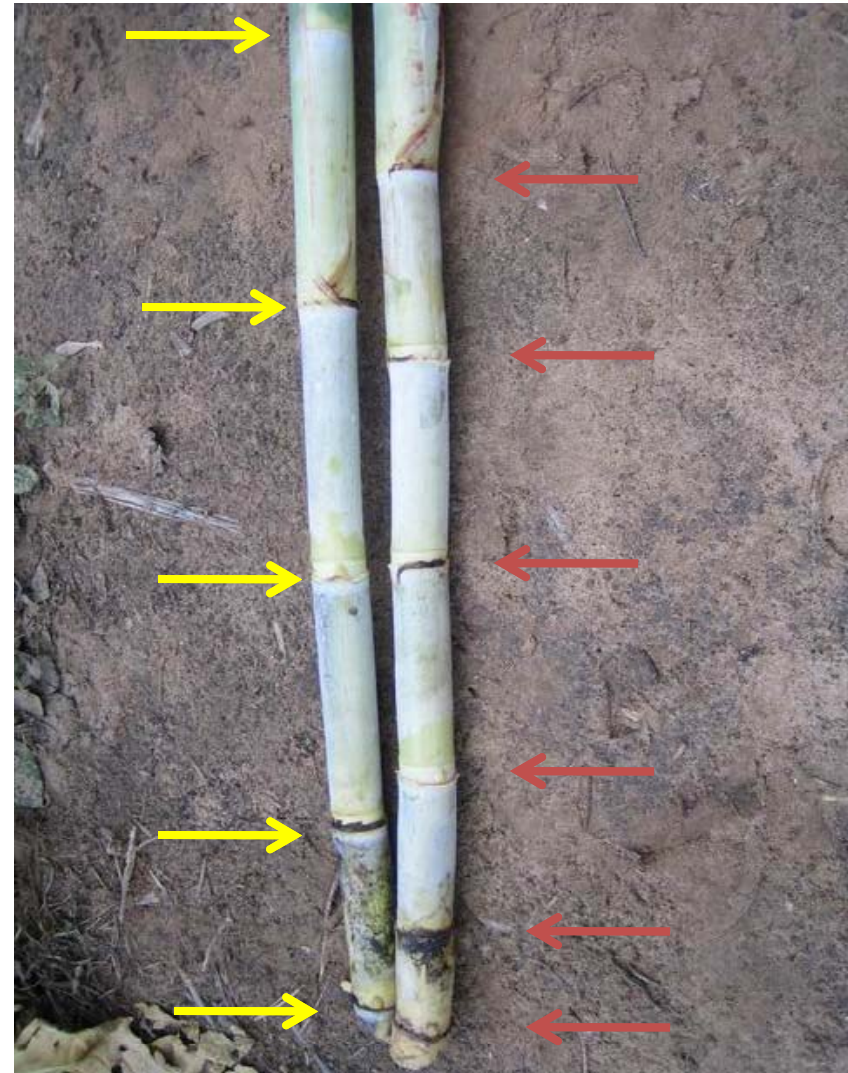


Brix Result of Control Plant 11-12

Growth Dynamic HG compared with Control Group



HG LEFT / CONTROL PLANT RIGHT



HG LEFT / CONTROL PLANT RIGHT

visit at test site 20th Sept 2010



Left – Herbagreen field, even and well developed plants

Right - control plot, less dense and more uneven developed



Dense HG cane situation, rich and health plants /leafs



Less dense control group, poorer coloring and health

Harvest day

12. Jan. 2011



Dense **HERBAGREEN®** sugar cane field, plants grown into very good height, farmer feels canes are heavy in weight



Worker in process of cutting manually canes



View at ending of field

Cutting of canes



Cutting



Bundling



Loading



25 ton load ready for delivery to sugar mill

Brix testing



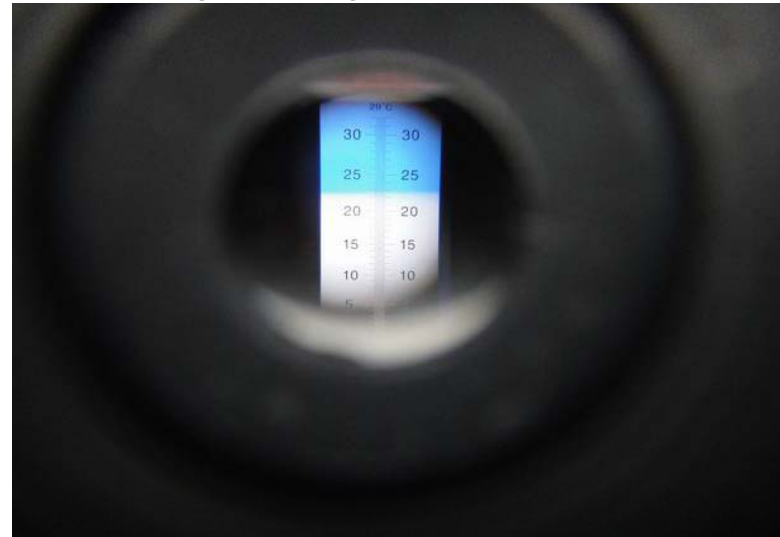
Cutting sample from **bottom, middle and top** of cane



Placing of cut sugar cane in hand-press



Pressing of cane-juice on to Brix-meter



Reading result of sugar content

The Result:

January 2010



Area: **HERBAGREEN®** test site 3,2 Rai

History: previous harvest of 1.5 truck equal to 37,5 ton or 11,7 ton/Rai.

Present: **HERBAGREEN®** harvest 2 truck loads or 50 ton or 15,6 ton/Rai.

Result: total increase by **HERBAGREEN®** - 12,5 ton or 33,3% !

Comments by farmer:

- **HERBAGREEN®** plant very tall and heavy canes, but still many green leafs
- Own Brix test on day of harvest: 22,5 at bottom of plant 18,5 in middle part and 12 at top of plant.
- Average should be around 17,7 Brix value

Comment of Mill:

- Mill visited farm in December and checked Brix of 18!
- Brix result from Mill on day of delivery - only: 10.63 ?!
- Standard Brix for this type of cane at this time of year is 8-9 only
- Sugar mill comment: too early harvest by about 2-3 month, therefore Brix value is lower and/or plant not fully grown
- Sugar mill information on Standard per Rai out put: 1st crop: 13 ton, 2nd crop: 9 ton, 3rd crop: 8 ton.
- **HERBAGREEN®** result: harvest 3rd crop: 2 truck load - 50 ton for 3,2 Rai; equal to 15.6 ton/Rai
- Previous result: 1,5 truck load or 37,5 ton or 11,7 ton/Rai
- **HERBAGREEN®** increased 3.9 ton/Rai or an increase of 33,3% from previous harvests