

Harvesting Tapioca from field, rescued by Herbagreen

Dec-10



- Test side has been effected by the White Mealy Bug after planting
- Herbagreen Protect has been applied with the age of 5 month - only 1 time sprayed to test effect of Herbagreen -
- The Cassava plants recovered well and continued strong growth in Tapioca rooting
- The soil condition contains a lot of red sand and is not the optimum choice
- In the past the farmer has been able to get between 2,5 - 3 tones per Rai
- The test site had also a lot of plant losses from insect damage accelerated by water shortage
- Our target : avoid plant losses and keep pest under Herbagreen control. Potential yield should reach minimum 9,5 tones per Rai (3 times from previous).
- Formula: actual reached average weight per plant 6,8 kg multiplied by 1400 plants per Rai = 9,520 kg.
- Our plan for next cycle will be to spray 4 – 5 times Herbagreen during growth cycle and increase harvest even more than above calculated target.

Samples taken from plot with small plants



Visual identification of small plants

- as the field has been effected by the Whit Mealy Bug, different condition / size of plants are the result. These uneven sizing can be observed in a kind of plots / zones within the field.
- We took each 10 plant samples from this different plots.
- From this smaller plants, the roots developed well after spraying Herbagreen. Either many roots per plant grew and/or also longer roots. This is very typically when using Herbagreen.
- **The average number of roots were 8,2 per plant**
- **The average root weight of small plants is: 4,6 kg**



Up to 18 roots developed per plant



Weight measuring of all sample plants

Samples taken from small and mid size plants in plot



Still low density and mixed sizes through out this plot

- effected by Mealy Bugs, this mixed area delivered roots with a weight between 2,3 kg up to 8 kg.
- Some plants were very short and poor stems
- The roots count resulted in 4 up to 13 per plant
- Clear visible has been the unusual length of roots
- Plants damaged by Mealy Bug, visually twisted their stems but continued growth after spraying Herbagreen .
- The average number of roots has been 9,2 per plant**
- The average weight of this mixed plants is: 5,39 kg**



Average result in a lot of long roots



Good average weight , impressive rooting

Samples taken from regular size of plants



- This plot within the field has been classified as a normal average plant height / size by the farmer.
- Intense rooting in numbers and weight was the result
- Using this plot as an average standard would result in 11,7 tones Tapioca per Rai (waist deducted).
- In this plot many young plants didn't make it so there was no overcrowding of plants. Farmer realized that wider planting will be of benefit for better results. 1 by 1 meter will be the standard in planting space in future.
- **The average number of roots has been 11,4 per plant**
- **The average weight of this standard plants is: 8,21 kg**



samples taken from large size plants



With more space between individual plants, much larger roots are result



Average 11,5 roots per plant



Heavy duty work to un-earth roots from soil



Average weight , 9,25 kg per plant, max weight 13,5 kg per plant

Damage on plants effected by White Mealy Bug



All 3 stems damaged by Mealy Bug, but recovered



Crippled stems, damaged by Mealy Bug but continued growth by HG



Mealy bug damage at plants from big size plot

Highlights



18 developed roots on 1 plant



Typical long roots by Herbagreen



At the back end of truck the unusual long and large roots are visible



Many arms, large and heavy

Statistic of sampling



Casava Banpai 28 Sep'10

Plot 1 (Small Plants)			Plot 2 (Mix size Plants)			Plot 3 (Big Size Plants)			Plot 4 (Normal SizePlants)		
Plant No	Root Qty.	kg	Plant No	Root Qty.	kg	Plant No	Root Qty.	kg	Plant No	Root Qty	kg
1	8	6	10	11	8	1	11	7.9	1	11	7.6
2	10	6	2	10	6.1	2	13	8.3	2	10	10.3
3	6	3.8	3	10	5.7	3	12	8.5	3	10	10.6
4	10	5.2	4	13	5.8	4	7	4.8	4	9	10.1
5	5	1.2	5	10	6.1	5	10	10	5	12	5.7
6	12	7.8	6	4	2.3	6	12	8.8	6	14	10.5
7	7	4.7	7	10	4.9	7	11	9.6	7	18	7.9
8	11	4.3	8	7	6	8	10	8.5	8	9	5.5
9	8	3.7	9	7	4.5	9	13	13	9	6	5.9
10	5	3.4	10	10	4.5	10	16	13.5	10	15	8
Total	82	46.1	Total	92	53.9	Total	115	92.9	Total	114	82.1
Avg.	8.2	4.61		9.2	5.39		11.5	9.29		11.4	8.21

Total 4 Plot	Plant Qty.	Root Qty.	kg
	40	403	275
Average	1 Plant	10.29	6.8