

Initial testing in Rubber Tree

Sept 2010



•History:

- Para rubber tree initially grew only in the Amazon Rainforest.
- As early as 3600 years ago the rubber was already used for many things.
- 1873 there has been the first attempts to grow rubber outside Brazil.
- 1875 first success in germinating Seeds. The British Empire sent them to Ceylon and Singapore. Java and Malaysia followed. South and South East Asia as well tropical West Africa is today's cultivation Zone.

•Herbagreen in Rubber Tree:

- Objective is to bring Herbagreen as a benefit to rubber cultivation.
- One of the important points in rubber cultivation is Carbon Dioxide that is responsible for Latex production! By the HG mode of action, CO₂ is almost doubled in the phase of splitting CaCO₃ into CaO and CO₂.
- HG also supply Magnesium which is important as secondary nutrient responsibility to increase rubber and therefore productivity.

Test in Nursery



Test members: Herbagreen team, Institute, farmer

- Small plant should grow fast
- Plant growing from Seed, grow to 1 – 2,5 cm circumference within 6-7 month (from August to January)
- Grafting Tree : select good Stem, cut good branch and attach to Stem; in this stage plant need Calcium to succeed within 30 days.
- Reason of transplant is to secure good quality and productive Rubber Tree.
- After this stage plant need Brix and Starch to produce Water Rubber ; 75% is used for water Rubber production and 25% is used for growth of Tree)
- Fertilizer can be used after the age of 2-3 month.
- PH level of soil is 4 -5,5; low calcium in soil preferred



Growing seedling - to reach 1 - 2,5 cm circumference



Trimmed seedlings, ready to be grafted

Herbagreen in young plant (1st spraying)



Seen in above picture, Rubber Tree grow in stages



Soft young leaves in light green color



Old leaves are at still stand, sprayed HG uptake only slow



Herbagreen in young leafs - absorbed within minutes !

Rubber Trees



- For growth and development N-P-K is required but also Carbon dioxide and Magnesium.(Rubber production)
- Stomata open 6 a.m. trough out the day till 6 p.m. in evening! (Herbagreen therefore need to be sprayed at daytime)
- After 6 p.m. till 3 a.m., Stomata are closed. Rubber taping taking place from 3 a.m until Sun Rise.
- In January and February, Tree is changing its leafs. In this time rubber taping is on hold.
- Rubber milk output differ depending on Rubber Tree type.
- Rubber output differ from 30-60 gr. per Tree/per 1 time cut
- 1 day cut , 1 day off...
- Price for taped Rubber depend on DRC (dry rubber content)
- A-Grade rubber contain 35-45% of DRC, poor quality is at 27%
- A-Grade Rubber price stay at 114Baht/kg (Sept2010)
- Avg. water Rubber output per Rai is 276 kg/year. ; or 31,464 Baht/Rai/year income
- Within Plantation, unproductive Trees (no milk content), count in average 10-12%. The reason for this problem is still unknown and unsolved.
- In this test plantation the un-productive Trees count closed to 20%

Soil and target



Intense Hair-rooting at surface of Soil

- Fertilizer can be used after the age of 2-3 month.
- Magnesium is important for Stem and Body.(for Photosynthesis and Chlorophyll production)
- PH level of soil is 4 -5,5; low calcium in soil preferred.



Rubber seeds

Our target:

- Soft skin of Rubber Tree (higher productivity)
- Test: soil application, stem application and leaf spray technique
- Increased Water Milk activity of Tree / more output
- Increase in DRC, expected by Herbagreen as effect of dry matter increase happens also in all other plants.
- Healthy and fast growth of all young plants
- Earlier mature Tree / earlier ready for rubber taping.