

Performance of Different Latex Harvesting Systems to Increase the Labor Productivity of Rubber Plantations in Thailand.

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Land productivity and labor productivity

How to get the highest yield at each tapping in order to address the following issues:

- Skilled tapper shortage
- Increasing tapping costs
- Declining rubber price

Depending on types of labor contracts (share cropping, family farms...)

How to minimize the time spent on field and to increase the kg/tapper/tapping day ?

Reduction of tapping frequency

Implementation of Upward tapping



Land productivity and labor productivity

Synthesis of results obtained on 3 experiment sites in traditional rubber growing areas of Thailand :

- Thepa research station of PSU (HatYai Songkhla, South Thailand)
- Sittiporn Kridakorn research station of KU (Chumphon, South Thailand)
- URP Corporation (Chanthaburi, Eastern Thailand)

Reduction of tapping frequency

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Land productivity and labor productivity

Synthesis of results obtained on 3 experiment sites in traditional rubber growing areas of Thailand :

- **Thepa station of PSU (HatYai Songkhla, South Thailand)**



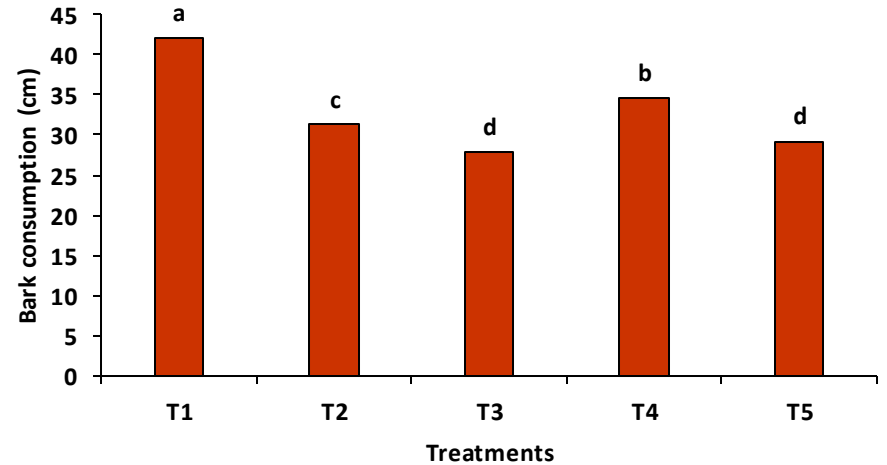
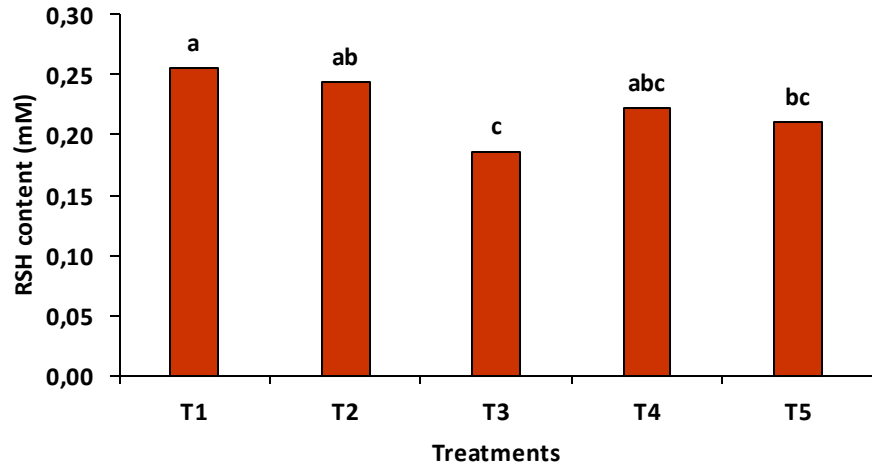
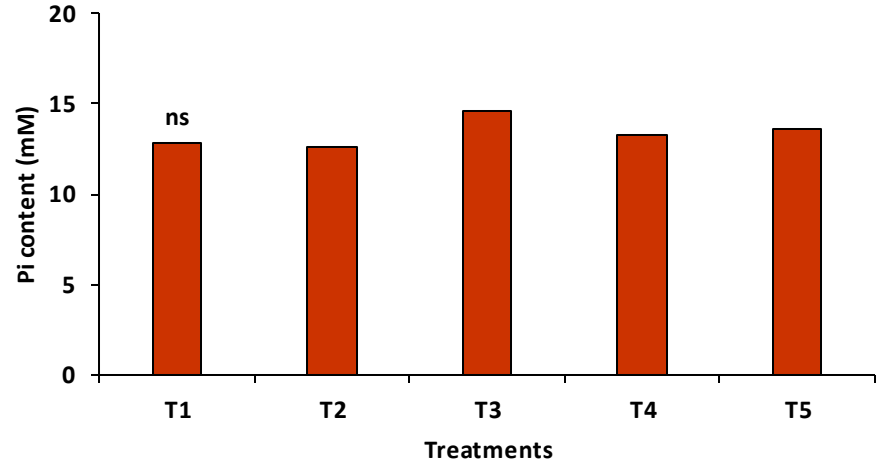
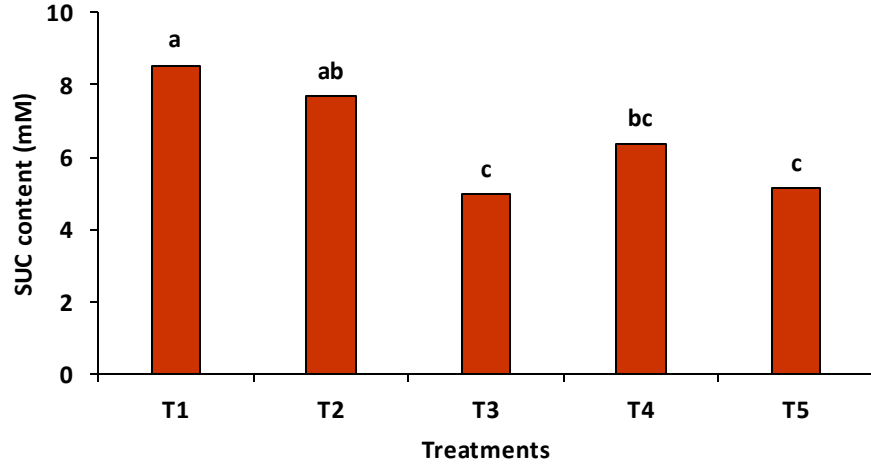
Reduction of tapping frequency

Tapping frequency and hormonal stimulation Clone RRIM600

Treatments	Average yield		Cumulative yield	
	g/t/t	%	kg/t	%
T1: S/3 d1 2d/3	46.57d	100	7.2a	100
T2: S/2 d2	62.88c	135.0	7.1a	99.1
T3: S/2 d3 ET 2.5% Pa1(1) 8/y (m)	78.32a	168.2	7.1a	99.4
T4: S/3 d2 ET 2.5% Pa1(1) 4/y (m)	61.22c	131.5	6.9ab	96.5
T5: S/3 d3 ET 2.5% Pa1(1) 12/y (m)	71.31b	153.1	6.5b	90.5
F-test	**		**	
C.V. (%)	15.05		16.83	

Sainoi et al. 2017

Latex harvesting: tapping frequency and hormonal stimulation



T1: S/3 d1 2d/3
T2: S/2 d2
T3: S/2 d3 ET 2.5% Pa1(1) 8/y (m)
T4: S/3 d2 ET 2.5% Pa1(1) 4/y (m)
T5: S/3 d3 ET 2.5% Pa1(1) 12/y (m)

Land productivity and labor productivity

Synthesis of results obtained on 3 experiment sites in traditional rubber growing areas of Thailand :

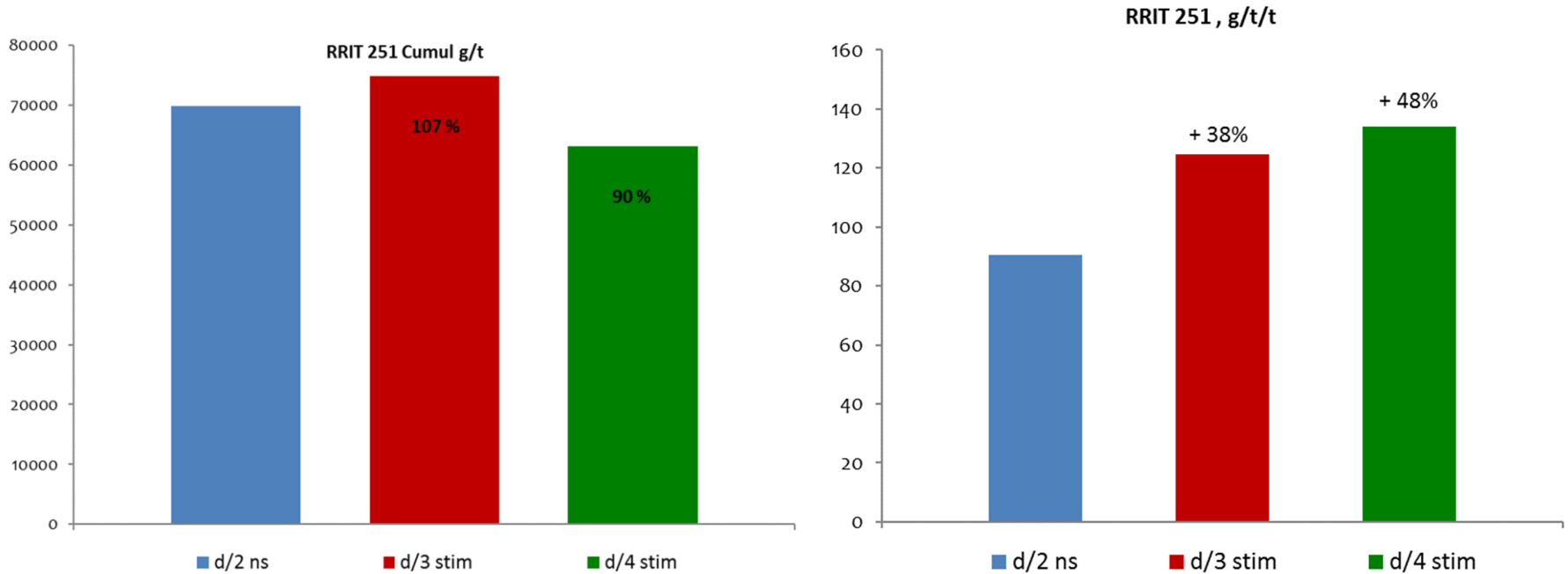
- Sittiporn Kridakorn station of KU (Chumphon, South Thailand)



Reduction of tapping frequency

Latex harvesting: tapping frequency and hormonal stimulation

RRIT 251, production over a period of 8 years of tapping



Treatment	SUC (mM)	RSH (mM)	Pi (mM)
S/2 d2	8.92	0.16	21.76 ^a
S/2 d3 ET 2,5% 6/y	9.54	0.11	20.78 ^{ab}
S/2 d4 ET 2.5% 8/y	7.89	0.11	15.05 ^b

Land productivity and labor productivity

Synthesis of results obtained on 3 experiment sites in traditional rubber growing areas of Thailand :

- **URP Corporation (Chanthaburi, Eastern Thailand)**
 - Real production conditions
 - Share cropping system, comparable to the one implemented in smallholdings

Reduction of tapping frequency

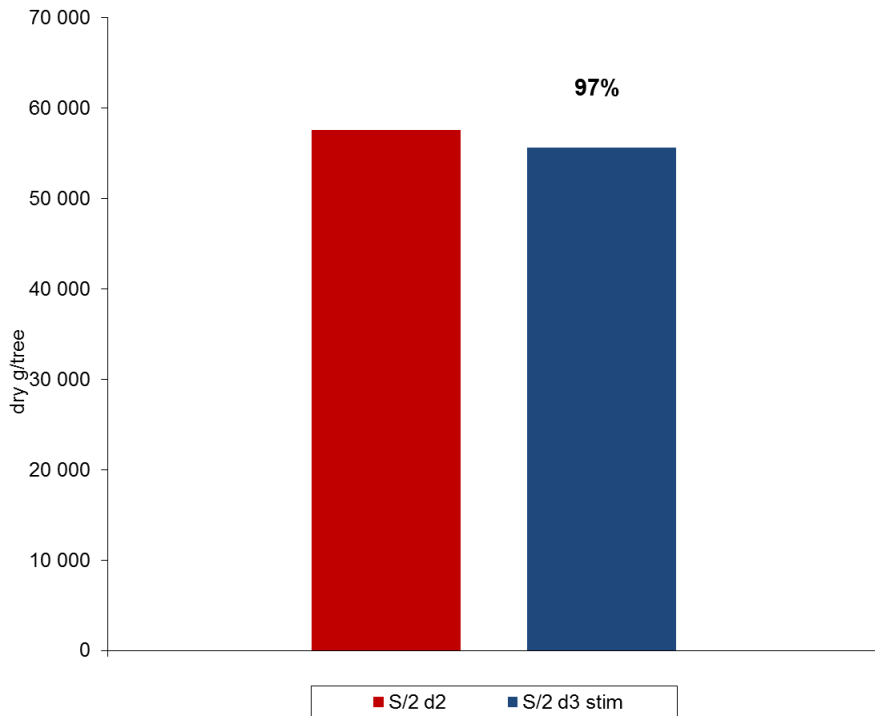
Implementation of Upward tapping



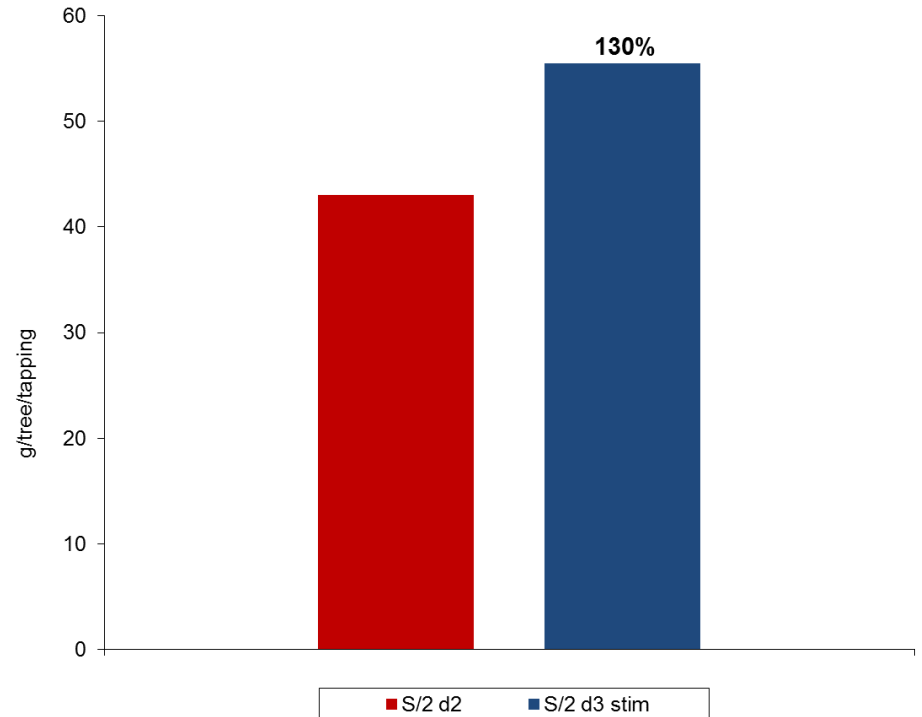
Land productivity and labor productivity

On farm demonstrative plots, clone RRIM600

Cumulated production per tree, downward 10 years



CB TE 03
Average production per tree per tapping, 10 years



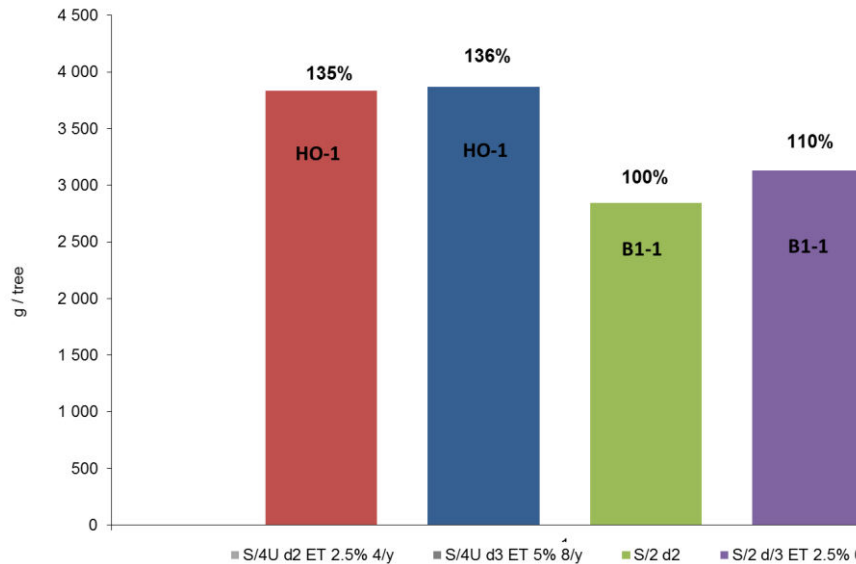
S/2 d3:

- Years 1- 4 : ET2.5% 3/Y
- Years 5-10 : ET2.5% 6/Y

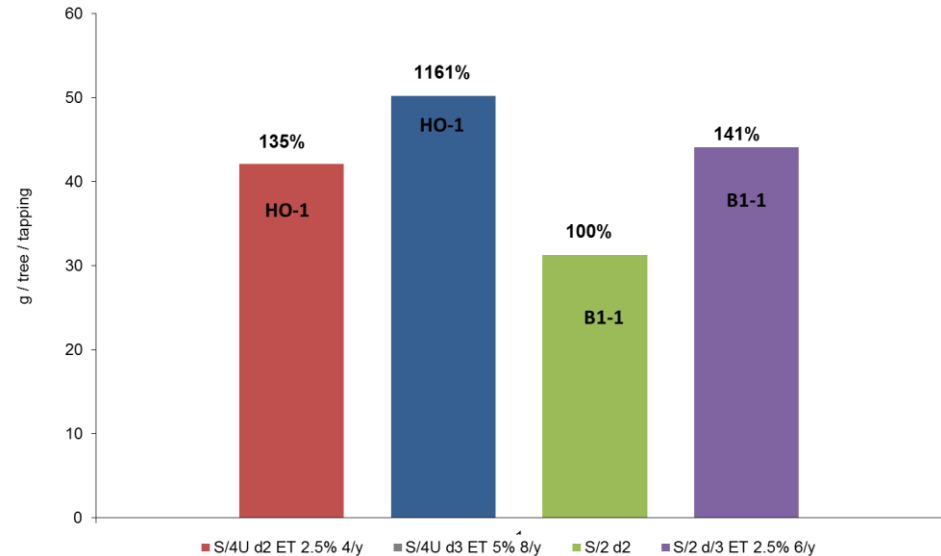
Land productivity and labor productivity

On farm demonstrative plots, clone RRIM600

CB TE 03 upward tapping, year 11
Cumulated production per tree



CB TE 03 upward tapping, year 11
Average production per tree per tapping



Year 11:

Red : S/4U d2 ET2.5% 4/Y (CUT), after S/2 d2 nil stimulation 10 years

Blue : S/4U d3 ET5% 8/Y (CUT), after S/2 d3 ET2.5% 6/Y 10 years

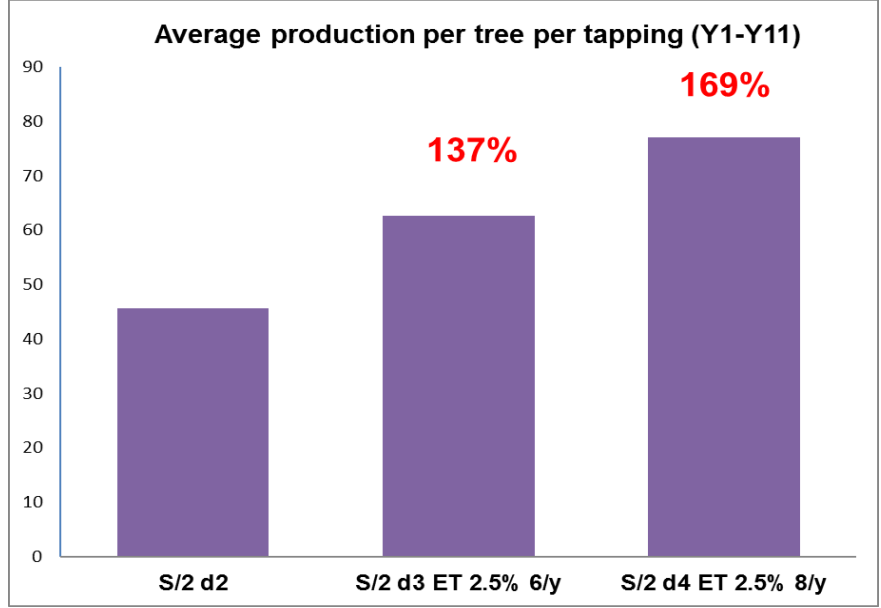
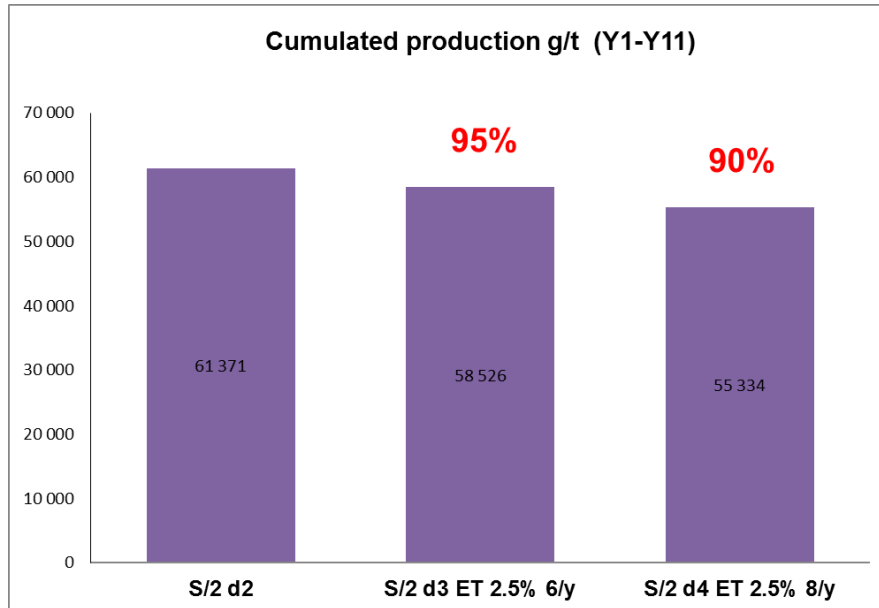
Green : S/2 d2 (Renewed bark, panel B1-1) nil stimulation

Purple : S/2 d3 (Renewed bark, panel B1-1) ET2.5% 6/Y

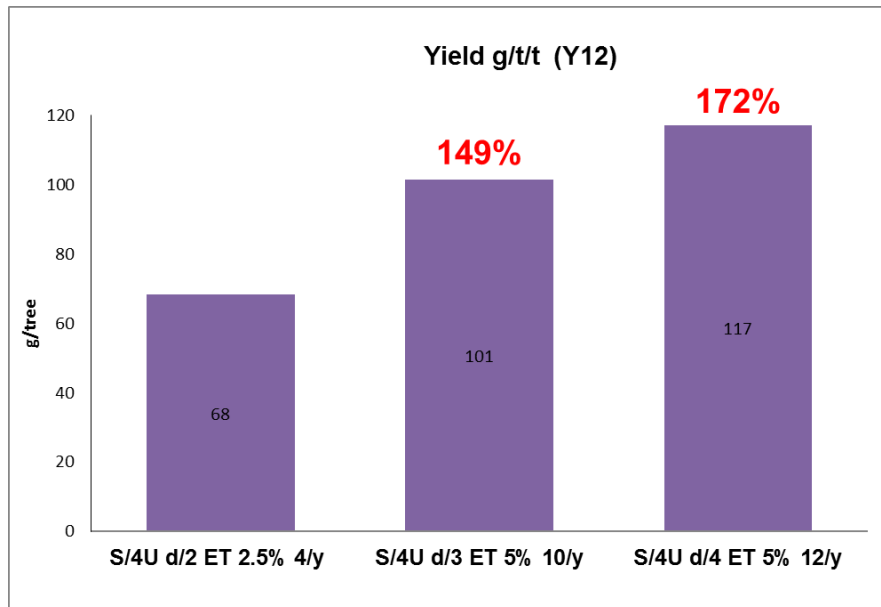
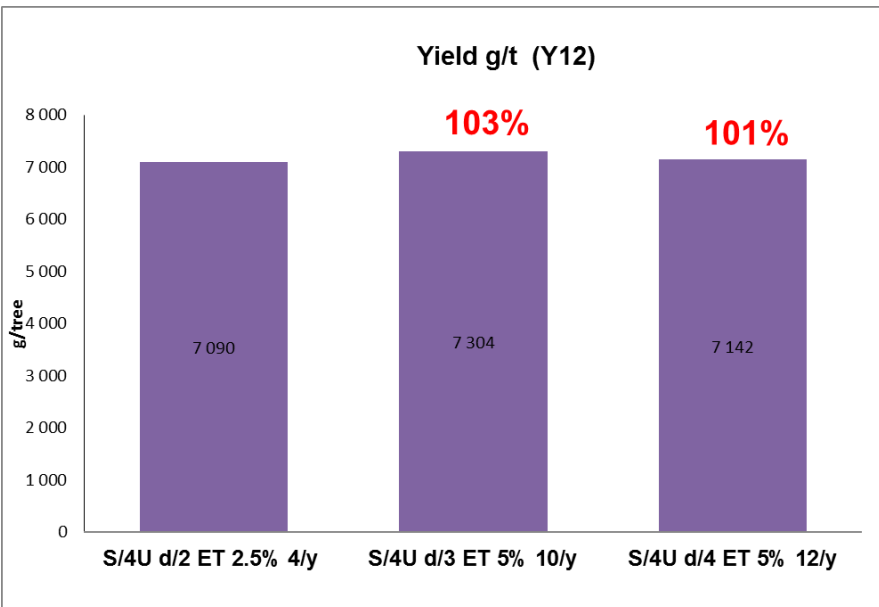
Land productivity and labor productivity

On farm demonstrative plots, clone RRIM600

downward



upward



A lower intensity latex harvesting system (d3 or d4 frequencies), associated with a tailored stimulation (adapted to clone, to tapping frequency or intensity and to tapping direction (downward / upward)), always results in:

- A lower number of tapping days;**
- A significant and sustainable increase in production per tapping (g/t/t and kg/tapper/day);**
- A sustainable production (kg/tree or kg/ha);**
- A lower bark consumption;**
- A sustainable physiological profile.**

It can be implemented successfully, even under smallholdings / share cropping conditions, to address an increasing shortage of skilled tappers, to increase the tapping labor productivity, and to permit to decrease the time spent on field, without significant loss of crop.

Controlled upward tapping (CUT) can also be implemented to extend plantation lifespan and increase cumulative production, whatever the frequency.

THANK YOU FOR YOUR ATTENTION



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