

# EXPERIMENTS WITH ECONOMIC TAPPING SYSTEMS (1)

BY

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## Part VI

### Results of Tapping for the fourth Year, June 1936 to May 1937, of the Experiment on Seventh Mile Estate

The results of the fourth year of tapping are presented in Tables XXIV to XXIX and Fig. 13. No change has been made in the tapping systems compared or in the method of recording, and these tables are in continuation of the corresponding tables and figures given in the previous accounts of the progress of this experiment. \*

The whole experimental area was manured in October/December 1936 with four pounds of sulphate of ammonia per tree. This was the second application of manure, a similar application having been made in September 1934.

From the analysis of variance (Table XXVII) the Standard Error of the difference between two means has been calculated and found to be 25.8 lb. This is a small increase over that of the previous year and differences of less than 52 pounds, or 10 per cent, cannot be regarded as significant.

A full discussion of the results of the first four years of this experiment, including those here presented in detail, is given in a separate paper in this issue of the *Journal*. It will thus be necessary to refer here only very briefly to the results of the fourth year of tapping.

PLOTS 1, 2 AND 3. A.D., A.B.C. WITH THREE, FIVE AND SEVEN MONTHS  
REST RESPECTIVELY.

Compared with the control the yields again show a small decrease, though the actual yield in lb. per acre has increased slightly. The yields of the three systems remain in the same order, the system with three months' rest still giving a slightly higher yield than the others, while that with the seven months' rest gives the lowest yield. The differences are not significant.

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\* The previous papers in this series appear in this *Journal*: **5** (1934) 320-341; **6** (1935) 105-110; **8** (1937) 24-38.

PLOTS 4, 5 AND 6. SUNDERLAND SYSTEM WITH RESTING PERIODS OF THREE, FIVE AND SEVEN MONTHS RESPECTIVELY.

Compared with the control the yields from these plots again show a small increase. They still however lag behind those of the A.B.C. plots.

PLOT 7. DOUBLE-FOUR A.B.C.D.

So far no response to the resting periods can be recorded, the drop in yield to 25 per cent below that of the control being equal to the reduction in the number of tappings.

This system has been in use only since October 1935 and it will not be possible to form any estimate of its value until the results of the fifth year of the experiment are available.

FIG. 13

## TAPPING EXPERIMENT ON 7<sup>th</sup> MILE ESTATE

PROGRESS OF TOTAL YIELD AS PERCENTAGE OF CONTROL  
4<sup>th</sup> YEAR

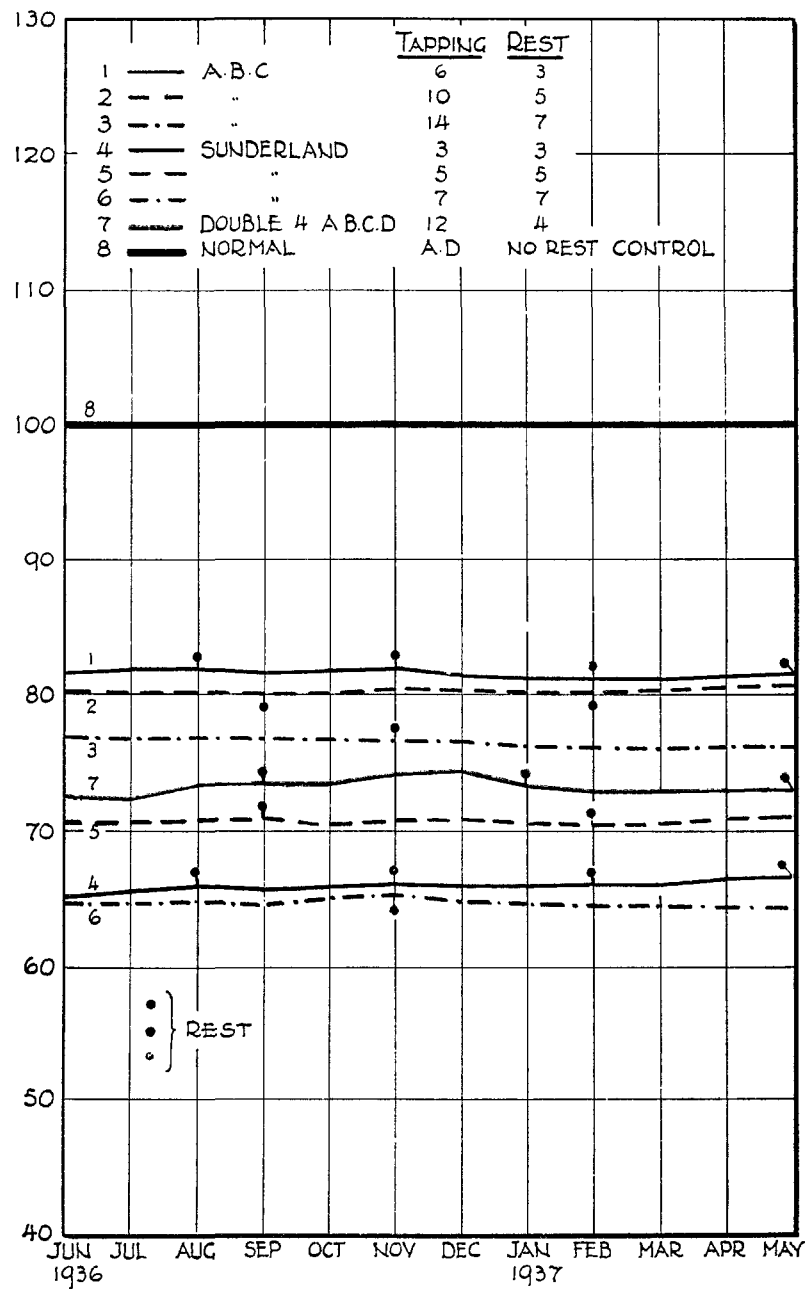


TABLE XXIV

*Yields June 1936—May 1937**Total Yield per Plot (lb. dry rubber) excluding Scrap*

Blocks		Plots and Tapping Systems							
		1	2	3	4	5	6	7	8
		A.B.C. 6—3	A.B.C. 10—5	A.B.C. 14—7	Sunderland 3—3	Sunderland 5—5	Sunderland 7—7	Double-four A.B.C.D. 12—4	Control
I	...	2,778.0	2,991.2	2,657.5	1,962.2	2,297.8	2,149.9	4,256.4	2,359.2
II	...	3,047.1	2,858.4	2,601.0	2,051.8	2,000.6	2,069.0	4,384.3	2,232.2
III	...	3,060.9	2,957.2	3,040.3	1,835.2	2,428.8	1,721.5	4,062.4	2,318.4
IV	...	2,948.8	3,329.4	2,889.0	2,119.5	2,380.0	1,868.2	4,394.1	2,916.5
V	...	3,259.6	3,074.0	2,968.6	2,499.3	1,957.9	1,891.3	4,442.1	2,183.4
VI	...	2,536.9	2,420.9	2,039.5	1,657.6	1,885.6	1,631.0	3,562.5	2,330.2
Total	...	17,631.3	17,631.1	16,195.9	12,125.6	12,950.7	11,330.9	25,101.8	14,340.0

Grand Total : 127,307.3 lb.

TABLE XXV  
Yield in lb. per Acre, for Fourth Year of Tapping, of First-Grade Rubber, Scrap and Total Dry Rubber  
June 1936—May 1937

	Block Nos.	Plots and Tapping Systems							
		1 A. B. C. 6—3	2 A. B. C. 10—5	3 A. B. C. 14—7	4 Sunderland 3—3	5 Sunderland 5—5	6 Sunderland 7—7	7 Double-four A.B.C.D. 12—4	8 Alternate-daily (Control)
First-Grade Rubber	I ...	518.6	558.4	496.1	457.8	536.2	501.6	496.6	660.6
	II ...	568.8	533.6	485.5	478.8	466.8	482.8	511.5	625.0
	III ...	571.4	552.0	567.5	428.2	566.7	401.7	473.9	649.2
	IV ...	550.4	621.5	539.3	494.6	555.3	435.9	512.6	816.6
	V ...	608.5	573.8	554.1	583.2	456.8	441.3	518.2	611.4
	VI ...	473.6	451.9	380.7	386.8	440.0	380.6	415.6	652.5
	Mean ...	548.6	548.5	503.9	471.6	503.6	440.7	488.1	669.2
	Per Cent. ...	82.0	82.0	75.3	70.5	75.3	65.9	72.9	100.0
Scrap	Mean ...	51.6	47.7	44.5	59.1	63.1	58.9	65.9	64.1
	Per Cent. of First-Grade Rubber	9.4	8.7	8.8	12.5	12.5	13.4	13.5	9.6
Total Dry Rubber	Mean ...	600.2	596.2	548.4	530.7	566.7	499.6	554.0	733.3
	Per Cent. ...	81.8	81.3	74.8	72.4	77.3	68.1	75.5	100.0

General Mean 521.8 lb. First-Grade Rubber per acre.

TABLE XXVI

Mean Yield in pounds per acre per month of First-Grade Rubber  
(Fourth Year of Experiment)

		1 A. B. C. 6—3			2 A. B. C. 10—5			3 A. B. C. 14—7			4 Sunderland 3—3			5 Sunderland 5—5			6 Sunderland 7—7			7 Double-Four A.B.C.D. 12:4			8 Alternate-Daily (Control)		
		Yield			Yield			Yield			Yield			Yield			Yield			Yield			Yield		
		Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.	Lb.	per cent.	Total per cent.
June	1936	41.7	81.1	81.7	43.3	84.2	80.2	45.9	89.3	76.8	27.4	53.0	65.1	48.1	93.6	70.7	45.5	88.5	64.7	35.5	69.1	72.5	51.4	100.0	100.0
July	"	47.2	84.0	81.8	44.5	79.0	80.2	42.5	75.6	76.7	45.0	80.1	65.5	41.5	73.8	70.8	37.4	66.5	64.7	39.8	70.8	72.3	56.2	100.0	100.0
August	"	46.6	90.5	81.9	41.5	80.6	80.2	40.7	79.0	76.8	40.9	79.4	65.9	39.8	77.3	70.9	37.5	72.8	64.9	43.6	84.7	73.4	51.5	100.0	100.0
September	"	38.0	71.3	81.7	39.0	73.2	80.0	38.7	72.6	76.7	31.4	58.9	65.7	39.2	73.5	71.0	36.4	68.3	65.0	38.7	72.6	73.4	51.5	100.0	100.0
October	"	48.6	86.2	81.8	46.2	81.9	80.1	43.4	77.0	76.6	41.0	72.7	65.9	30.0	53.2	70.5	39.7	70.5	65.2	40.9	72.5	73.3	56.4	100.0	100.0
November	"	43.4	84.4	81.9	47.4	92.2	80.4	38.6	75.1	76.6	40.9	79.8	66.2	44.7	83.1	70.8	36.6	71.2	65.3	43.2	48.0	74.1	51.4	100.0	100.0
December	"	50.0	74.2	81.6	53.1	78.8	80.3	49.4	73.3	76.5	39.2	58.2	66.0	51.7	76.7	71.0	34.4	51.0	64.9	52.3	77.6	74.4	67.4	100.0	100.0
January	1937	49.0	70.7	81.3	50.6	73.0	80.1	46.3	66.8	76.2	47.2	68.1	66.0	41.5	59.9	70.7	41.3	59.6	64.7	42.5	61.3	73.3	69.3	100.0	100.0
February	"	45.2	78.9	81.2	45.1	78.7	80.1	40.8	71.2	76.1	42.6	74.3	66.2	37.3	65.1	70.5	31.2	54.5	64.5	36.8	64.2	72.8	57.3	100.0	100.0
March	"	42.1	79.7	81.2	45.2	58.6	80.2	38.0	72.0	76.0	30.3	57.4	66.0	38.3	72.5	70.6	35.2	66.7	64.5	38.5	72.9	72.8	52.8	100.0	100.0
April	"	48.2	97.0	81.5	46.8	94.2	80.5	38.8	78.1	76.1	46.2	93.0	66.6	45.8	92.2	71.0	31.5	63.4	64.5	38.4	77.3	73.0	49.7	100.0	100.0
May	"	48.3	91.5	81.7	45.8	86.7	80.6	40.7	77.1	76.1	39.4	74.6	66.8	47.7	90.3	71.4	33.8	64.0	64.5	38.0	72.0	72.9	52.8	100.0	100.0

NOTE. The thick horizontal lines show the points at which tapped and rested sections were changed over.

TABLE XXVII

*Analysis of Variance. First Grade Rubber (fourth year)*

	Degrees of Freedom	Sums of squares	Mean square
Treatments ...	7	204,360.9	29,194.4
Blocks ...	5	63,672.3	
Error ...	35	70,003.3	2,000.9

TABLE XXVIII

*Yield per Tapper and Comparative Cost of Tapping (fourth year)*

Tapping System	Yield per Tapper per Tapping			Comparative Cost per lb.		Comparative Yield per Acre	
	First-Grade Rubber lb.	Scrap Rubber lb.	Total Dry Rubber lb.	First-Grade Rubber per cent	Total Dry Rubber per cent	First-Grade Rubber per cent	Total Dry Rubber per cent
1	17.0	1.6	18.6	81.2	81.3	82.0	81.8
2	17.0	1.5	18.5	81.2	81.8	82.0	81.3
3	15.6	1.4	17.0	88.5	88.6	75.3	74.8
4	17.6	2.2	19.8	78.4	76.7	70.5	72.4
5	18.6	2.3	20.9	74.2	72.9	75.3	77.3
6	16.4	2.2	18.6	84.1	81.8	65.9	68.1
7	16.2	2.2	18.4	85.2	82.7	72.9	75.5
8	13.8	1.3	15.1	100.0	100.0	100.0	100.0

TABLE XXIX

*Mean Dry Rubber Content (fourth year)*

Month			Tapping Systems							
			1	2	3	4	5	6	7	8
June	1936	...	41.8	41.2	39.6	47.7	41.7	41.0	42.6	39.9
July	"	...	40.9	39.2	38.9	41.3	39.1	38.9	41.8	39.3
August	"	...	<u>40.0</u>	40.0	40.3	<u>41.2</u>	41.2	40.4	42.4	41.1
September	"	...	43.1	<u>40.2</u>	39.7	48.1	<u>39.3</u>	39.4	<u>41.2</u>	42.1
October	"	...	40.5	41.3	38.1	42.0	44.6	38.5	43.2	38.5
November	"	...	<u>38.4</u>	39.1	<u>37.8</u>	<u>39.9</u>	41.5	<u>38.4</u>	41.5	38.8
December	"	...	42.3	38.8	42.9	47.2	39.2	48.7	40.4	40.1
January	1937	...	41.4	39.1	40.5	40.8	38.3	43.0	<u>40.6</u>	39.3
February	"	...	<u>40.4</u>	<u>39.7</u>	38.6	<u>39.8</u>	<u>38.9</u>	40.3	43.4	39.8
March	"	...	42.0	42.2	38.8	47.4	47.4	40.0	41.8	40.0
April	"	...	39.3	39.3	37.3	40.5	40.0	38.3	39.5	38.6
May	"	...	<u>38.7</u>	39.2	37.5	<u>39.5</u>	38.3	38.8	<u>40.6</u>	39.3

Note. The thick horizontal lines show the points at which tapped and rested sections were changed over.

Kuala Lumpur

22nd December, 1937