

RATIONALE

- Despite positive effects of fertilization as experienced in the SCFDP Rehabilitation through fertilization, still farmers don't fertilize their coconut, due probably to:
 - lack of capital, fluctuating/low price of copra, and
 - the long period of waiting before return to investment is realized
- Hence, a 10-year study was conducted to test different fertilization frequencies/cycles from transplanting to early bearing stage hopefully to reduce fertilizer cost
- This was premised on previous knowledge that fertilizers applied on coconut have residual effects the following years (Magat et al 1992, Magat et al. 1993 and Maravilla 1987)

THE SIMPLE STRATEGY

- The usual annual application of inorganic fertilizers can be modified into: *TWO YEARS CONSECUTIVE FERTILIZER APPLICATION AND SKIPPED THE THIRD YEAR:*

YR1	YR2	YR3	YR4	YR5	Y6 ...
✓	✓	x	✓	✓	x

- ✓ - with fertilizer application
- x - no fertilizer application

FERTILIZER RATES AND KIND USED

Palm age	Ammonium + Potassium	
	Sulfate	Chloride
Field planting	150 g	+ 200 g
6 mos. old	200 g	+ 250 g
1 yr old	500 g	+ 500 g
2 yrs old	750 g	+ 900 g
3 yrs old	1.0 kg	+ 1.5 kg
4 yrs old	1.5 kg	+ 1.7 kg
5 yrs old - up	1.5 kg	+ 2.0 kg



ADVANTAGES

- It compares well with the annual fertilizer application
- Less frequent inorganic fertilizer application saves on cost of fertilizer and labor by 31%
- Increase in yield is achieved after one year of fertilizer application
- It may be a useful guide for farmers as to when to fertilize their coconut

APPLICABILITY

- The technology is most likely applicable in:
 - Loamy to clayey soils
 - Coconut grown in soils with high potassium, phosphorus, magnesium, calcium and micronutrients (boron, zinc, copper, manganese & iron)
 - Wet growing zones (not more than 3 consecutive dry months)
 - Areas which are highly deficient in soil nutrients which become a major factor why the coconut palms have low yields.

Table 1. Accumulated 10-yr cost of fertilizer and labor in fertilizer application (cost that vary) per ha.

Scheme 1-Annual application	P25,629.89
Scheme 2-Fert. skipped every 3 yrs.	17,578.99
% reduction (savings) from Scheme 1 to Scheme 2	31.41

Table 2. Actual comparative yields and cash flow analysis (10 yrs) of scheme 1 and 2 (based from experimental data, PCA-Davao Research Center, 1996-2000)

YEAR	Scheme 1 - Yearly Fertilizer Application				Scheme 2 - Two yrs application- one yr stopped				Percent Reduction in Net Income from Scheme 1 to Scheme 2
	Copra Yield (kg/ha)	Gross Income (P)	Total Cost (P)	Net Inc./Loss (P)	Copra Yield (kg/ha)	Gross Income (P)	Total Cost (P)	Net Inc./Loss (P)	
YR 6	973.0	9,730	7,197	2,533	349.3	3,493	2,458	1,035	59.1
YR 7	3,164.8	31,648	12,458	19,190	2,331.0	23,310	10,456	12,854	33.0
YR 8	2,044.9	20,449	9,770	10,679	1,944.4	19,444	9,529	9,915	7.2
YR 9	207.4	2,074	5,359	(3,285)	250.3	2,503	2,221	282	(abnormal condition)
YR 10	5,076.5	50,765	17,046	33,719	4,704.7	47,047	16,153	30,894	8.4
Sensitivity Cash Flow Analysis									
P10/kilo copra				P10/kilo copra	P8.50/kilo copra				
NPV (18%)=5,432				3,904	404				
BCR=1.23				1.061	1.02				
IRR=28%				1.04	19%				
				20%					

Note: The low yield in year 9 was due to drought, year 6 - was 1st year of production.

SALIENT POINTS ON ECONOMIC BENEFITS

- Cash flow analysis reveal that the two schemes are profitable as NPVs are positive, with BCRs of 1.0 or better and IRR of more than prevailing interest rate. (NPV – net present value; BCR – benefit cost ratio; IRR – internal rate of return)
- Sensitivity analysis indicate that scheme 2 can only be profitable at copra price of at least P8.50/kilo.

Sources of Information:

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OPTIMIZING BENEFITS FROM FERTILIZATION OF BEARING COCONUTS BY SKIPPING ANNUAL FERTILIZER APPLICATION EVERY THREE YEARS



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