

References

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Intermittent Fertilizer Application for Coconut

RATIONALE

Despite positive effects of fertilization on coconut 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 | YR6 |
|-------------------------|-----|-----|-----|-----|-----|
| a | a | x | a | a | x |
| a-with fertilization | | | | | |
| x-without fertilization | | | | | |

FERTILIZER RATES AND KIND

| Table 1. Fertilizer Requirement per Tree | | | |
|--|------------------|---|--------------------|
| Palm Age | Ammonium Sulfate | + | Potassium Chloride |
| Field Planting | 150g | | 200g |
| 6 months | 200g | | 250g |
| 1 yr old | 500g | | 500g |
| 2 yrs old | 750g | | 900g |
| 3 yrs old | 1.0kg | | 1.5kg |
| 4 yrs old | 1.5kg | | 1.7kg |
| 5 yrs old & up | 1.5kg | | 2.0kg |

SOCIO-ECONOMIC ANALYSIS

| Table 2. Cost and Return for 10 years of Scheme 1 and 2 (based from experimental data, PCA-DRC, 1996-2000) | | | | |
|--|---|------------------|----------------|----------------------|
| YEAR | Scheme 1- Yearly Fertilizer Application | | | |
| | Copra Yield (kg/ha) | Gross Income (P) | Total Cost (P) | Net Income/ Loss (P) |
| YR6 | 973.00 | 35,267.74 | 34,819.13 | 448.61 |
| YR7 | 3,164.80 | 82,389.51 | 65,774.73 | 16,614.78 |
| YR8 | 2,044.90 | 81,717.58 | 63,173.08 | 18,544.50 |
| YR9 | 207.40 | 8,685.67 | 16,614.03 | -7,928.36 |
| YR10 | 5,076.50 | 223,636.99 | 141,776.17 | 81,860.83 |

Scheme 2 of fertilization posed cost-effective investment as shown by its Internal Rate of Return, which is 20% more a half of the investment.

| YEAR | Scheme 2- Two Years application- one year stopped | | | |
|------|---|------------------|----------------|----------------------|
| | Copra Yield (kg/ha) | Gross Income (P) | Total Cost (P) | Net Income/ Loss (P) |
| YR6 | 349.30 | 12,660.87 | 8,942.08 | 3,718.79 |
| YR7 | 2,331.00 | 8,867.68 | 16,320.65 | -7,452.97 |
| YR8 | 1,944.40 | 77,701.44 | 60,600.28 | 17,101.15 |
| YR9 | 250.30 | 10,502.52 | 6,407.68 | 4,094.84 |
| YR10 | 4,704.70 | 207,278.36 | 132,270.89 | 75,007.47 |

ADVANTAGES

- It compares well with the annual fertilizer application
- The reduced frequency of inorganic fertilizer application saves 31% on the cost of fertilizer and labor
- Increase in yield is achieved after one year of fertilizer application
- A useful guide for farmers as to when to fertilize their coconut

APPLICABILITY

The technology is most likely applicable in:

- Loamy to clayey soils
- Coconuts grown in soils with high potassium, phosphorus, magnesium, calcium and micro-nutrients (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.