

# NITROGEN CONTRIBUTION TO OIL PALM BY *Mucuna bracteata* GROUND COVER



*Mucuna bracteata* as a legume cover crop in oil palm plantation



## INTRODUCTION

Introduced into Malaysia in 1991 due to its shade tolerant ability and vigorous growth. No available data on nitrogen fixing ability of this legume species and its nutrient contribution to oil palm grown with it.

## BENEFITS

- Good source of nutrients for the oil palms, especially N because they can fix appreciable quantities of N from the air.
- Improves a broad spectrum of soil properties such as bulk density, porosity and chemical properties such as CEC, exchangeable bases and pH.
- Increases soil organic matter reserves and promotes carbon sequestration.

## POTENTIAL CONSUMER

- Oil palm planters

## PROVEN RESULTS

- Fixes ~80% of its total N content from atmospheric N<sub>2</sub>
- This corresponds to 374 kg N ha<sup>-1</sup>
- Improves the soil fertility – CEC, N, P, K, Ca and Mg
- Improves soil structure and porosity
- Increases soil organic matter content
- Conserve soil moisture
- Reduces soil erosion
- Sustains growth and yield of 30 tons FFB/ha/yr for palms 9-12 years old

### Percentage of N<sub>2</sub> fixed and nutrient contribution by *M. bracteata* at 24 months after planting

N <sub>2</sub> Fixed (%)	~ 80
N <sub>2</sub> Fixed (kg/ha)	374

### Nutrient contribution at 24 months (kg/ha)

Nitrogen	467
Phosphorus	20
Potassium	109
Magnesium	30
Calcium	66



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