

**Golden Harvest Between the Palms: Unlocking the Hidden Potential of Intercropping in Oil Palm Plantations**

**K. Navya sree<sup>1\*</sup>, Dr. V. Swarnlatha<sup>2</sup>, P. Umamahesh<sup>3</sup>, A. Nandini<sup>4</sup>**  
Agricultural college-palem, PJTAU, Nagarkurnool District,509215  
Corresponding author- [navyasreekosgi15@gmail.com](mailto:navyasreekosgi15@gmail.com)  
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### Introduction

Oil palm (*Elaeis guinenensis*) is known as the “golden crop of the tropics” because it produces more edible oil per hectare than any other oilseed crop. However, oil palm plantations take 3–4 years to start commercial production. During these early years, a large portion of land between the palm rows remains unused. Intercropping offers an excellent solution to utilize this vacant space productively. By cultivating suitable crops between oil palm rows, farmers can generate additional income, improve soil fertility, and increase overall farm productivity. This approach transforms a single crop plantation into a diversified and sustainable farming system.

#### Importance of Intercropping in Oil Palm

- 1. Additional Source of Income:** Oil palm plantations require a waiting period before yielding fruits. Intercrops provide regular income during the juvenile stage, helping farmers cover maintenance and cultivation costs.
- 2. Efficient Utilization of Land:** Oil palm is generally planted at 9 m × 9 m triangular spacing, leaving significant open space during the early growth stages. Intercropping ensures maximum utilization of available land resources.
- 3. Weed Suppression:** Growing intercrops helps reduce weed growth naturally, minimizing



the need for herbicides and reducing labor costs.

**4. Improvement of Soil Fertility:** Leguminous intercrops such as cowpea and groundnut fix atmospheric nitrogen and enhance soil fertility, benefiting the oil palm plants.

**5. Risk Diversification:** Cultivating multiple crops helps farmers reduce financial risks in case one crop fails due to pests, diseases, or climatic conditions.

**6. Better Use of Resources:** Intercropping ensures efficient utilization of sunlight, soil nutrients, water, and labor, increasing the overall productivity of the farming system.

#### Suitable Period for Intercropping

Intercropping is most effective during the juvenile phase of oil palm growth. Age of Oil Palm Suitability for Intercropping

0–1 year	Highly suitable
1–3 years	Suitable
3–4 years	Limited due to shade
After 4 years	Not recommended

As oil palm grows, its canopy expands and creates shade, which reduces the growth potential of intercrops.

#### Suitable Intercrops for Oil Palm Plantations

**Vegetable Crops:** Vegetables are ideal intercrops because they grow quickly and provide early income.

**Examples:** Tomato, Brinjal, Chilli, Okra, Cabbage, Cauliflower, Cucurbits

**Benefits:** Short duration crops, High market demand, Quick financial returns

#### Pulse Crops

Pulse crops are widely recommended because they improve soil fertility. Examples: Groundnut, Green gram, Black gram, Cowpea, Pigeon pea.

**Benefits:** Nitrogen fixation, Soil structure improvement and Reduced fertilizer requirement

**Fruit Crops:** Some short-duration fruit crops can be successfully grown in young oil palm plantations.

Examples: Banana, Papaya and Pineapple

**Benefits:** High profitability and good market value



**Tuber Crops:** Tuber crops adapt well to tropical climates and partial shade. Examples: Sweet potato, Tapioca and Yam

**Benefits:** Good yield under moderate shade  
Suitable for tropical soils

**Fodder Crops:** Farmers with livestock can cultivate fodder crops. Examples: Hybrid Napier grass, Guinea grass and cowpea  
**Benefits:** Continuous fodder supply and supports integrated farming systems

### **Agronomic Practices for Intercropping**

**Spacing and Layout:** Intercrops are grown in the inter-row spaces without disturbing oil palm roots.

**Fertilizer Management:** Both oil palm and intercrops should receive separate fertilizer applications to avoid nutrient competition.

### **Irrigation Management**

Proper irrigation scheduling ensures that both crops receive adequate water.

**Pest and Disease Management:** Integrated pest management techniques should be used to control pests without affecting either crop.

**Economic Advantages:** Intercropping significantly improves the economic viability of oil palm plantations during the non-bearing stage. Farmers can earn income from vegetables, pulses, fruits, or fodder crops while waiting for oil palm to start producing fresh fruit bunches. This practice helps recover the initial establishment costs and improves farm profitability.

### **Challenges in Intercropping**

Despite its benefits, intercropping may face certain challenges:

- Competition for nutrients and water
- Increased management requirements
- Difficulty in mechanized operations
- Reduced intercrop growth after canopy closure

Proper crop selection and management strategies can overcome these limitations.

