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Significance of *Melia Dubia* Under Agroforestry System

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Introduction

Intensive cultivation of grain crops on irrigated and fertile lands has made a significant contribution to the 'Central Pool' of wheat (43%) and rice (30%). But, their agricultural and industrial development as well as adoption of rice-wheat system for a very long period has deteriorated soil health, lowered the water-table and increased the environmental pollution. Furthermore, this mono-cultural and chemical-intensive agricultural practice will ultimately lead to barren soils and weakened genetic pool. To address climate change thoroughly, there is a need to bring the trees to the forefront and support farmers to intensify and diversify their agroforests. Tree-based intercropping has been shown to increase soil C sequestration and to decrease N_2O emissions. Agroforestry combines agricultural and forestry technologies to create more diverse, productive, profitable, healthy and sustainable land use systems. The global estimated area under agroforestry is 307 m ha (Nair *et al.*, 2009). The current area under agroforestry in India is estimated as 25.32 m ha or 8.2% of the total geographical area of the country. This includes 20 m ha in cultivated lands and 5.32 m ha in other areas (Dhyani, 2014).

Among different tree species, *Melia dubia* has been screened as one of the best alternate pulpwood species. It belongs to the family Meliaceae, commercially known as Malabar Neem and is locally called as Malabar Vepa.It is a large deciduous and fast growing

tree with wide spreading branches, straight and tall bole. *M. dubia* with its multi-various uses like pulpwood, timber, fuel wood and plywood can fit as a suitable species for agro and farm forestry plantation programme.

Advantages of Melia dubia

- Rapid Growth Of Up To 40 Feet In 2 Years.
- Versatile Timber Can Be Used For Multiple Purposes.
- Crown Provides Minimal Shade, Allowing Crops To Be Planted Underneath.
- Melia Dubia Is Hardy And Strong.
- Simple To Prune And Care For While Growing.

Characteristics of Agricultural Crops for Agroforestry

1. Agricultural crops should be short duration and quick growing
2. They should be at least partially tolerant to shade.
3. Most of them should belong to Leguminosae family.
4. They should respond well to high density tree planting.
5. They should bear some adverse conditions, like water stress and/or excess of watering;
6. Crops should return adequate organic matter to soil through their fallen leaves, root system, stumps, etc
7. Crops should appropriately be fitted in intensive or multiple cropping system.

References

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