

Salient characteristics : Dwarf statured, top bearer, rich in phytochemical compounds with high antioxidant activity. Well suited to tropical climatic conditions of Islands.

Recommended ecology : Rain fed, near to neutral soils, tropical humid climate, preferably Andaman & Nicobar Islands and also similar ecosystem available elsewhere. It is suitable as intercrop in coconut and arecanut plantation

Agronomical practices suggested : FYM: 25 kg/plant/year
Vermicompost : 5.0 kg/plant
Spacing : 3.0 m x 3.0 m

Average fruit yield : 14 - 17 t/ha/year

CIARI SANJIVINI



Crop duration (days) : Fruiting starts at 10 - 12 months and early maturity (100 - 105 days to harvest from fruit setting to full maturity stage)

Salient characteristics : Dwarf statured, top bearer, rich in phytochemical compounds with high antioxidant activity

Recommended ecology : Rainfed conditions of Andaman & Nicobar Islands and similar ecosystem available elsewhere. Suitable as intercrop in arecanut and coconut plantations

Agronomical practices suggested : FYM: 25 kg/plant/year
Vermicompost : 5.0 kg/plant
Spacing : 3.0 m x 3.0 m

Average fruit yield : 16.0 - 20.0 t/ha/year

ADVANTAGES/OPPORTUNITIES OF NONI CULTIVATION IN ANDAMAN AND NICOBAR ISLANDS

- * Well adopted to the weather conditions of Islands
- * Availability of locally developed superior varieties
- * The lands which could not be used for other crops can also be used for Noni cultivation
- * Opportunity to promote as organic Noni

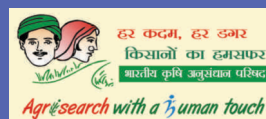
- * Round the year production with lesser inputs and marginal management condition
- * Higher profitability over any other crop under Island conditions
- * Opportunity to promote industries such as pharmaceuticals, nutraceutical and cosmetics using Noni
- * Noni Tourism opportunity: Tourism industry could be tapped to promote Island Noni and its products
- * Bright chances of area expansion of noni under vast coconut and arecanut plantations of Islands and as road side avenue plantations
- * The Noni plantations are climate resilient and hence could be used to protect fragile-Island ecosystem

Research and development efforts have been attempted by ICAR-CIARI, Port Blair for increasing the sustainable livelihood of Andaman farmers. Creating livelihood through noni cultivation is one among them. This



valuable plant species has far reaching proportions especially for improving livelihood of poor rural communities. Noni would be a potential multipurpose crop that can support the fragile environment of Island ecosystem and sustainable livelihood of Island farmers.

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For detailed information please contact

DIRECTOR

**ICAR- Central Island Agricultural Research Institute
Port Blair, Andaman and Nicobar Islands – 744 105, India
Web: <http://icar-ciari.res.in>**

PROSPECTS OF NONI (*Morinda citrifolia* L.) CULTIVATION IN ANDAMAN AND NICOBAR ISLANDS



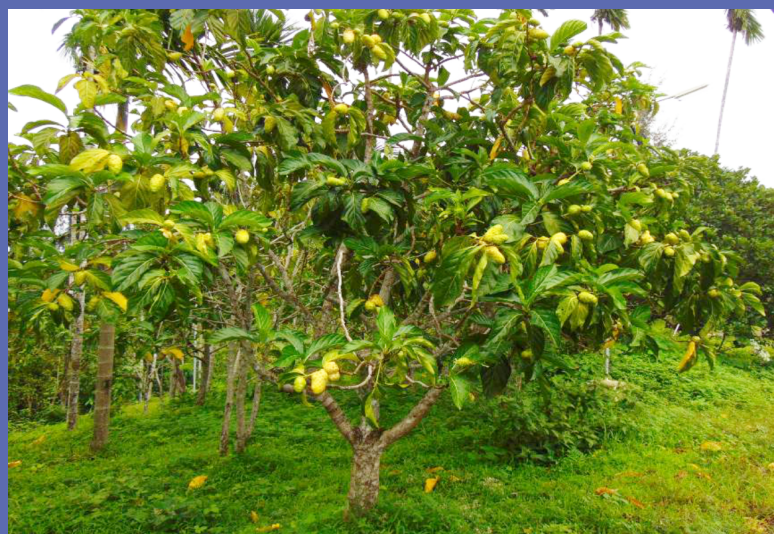
**I. Jaisankar
and
B. Augustine Jerard**



**Division of Horticulture and Forestry
ICAR- Central Island Agricultural Research Institute
Port Blair – 744 105
Andaman and Nicobar Islands, India**

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Noni (*Morinda citrifolia L.*) a tropical fruit belongs to the family Rubiaceae, commonly known as Indian Mulberry. It is a small tree that grows to a normal height around 10 to 30 feet in about 5 to 8 years. The fruits are irregular in shape, 7.5 to 15 cm long, ovoid green at unripe stage, turning yellowish-white colour, soft and creamy at maturity. Noni trees tolerate a wide range of drainage conditions including seasonal water logging, but it grows well under good drainage. It can be grown in wide range of soil acidity levels. It withstands temperature ranges of 20-35°C and mean annual rainfall of 250-4000 mm. Noni is easy to propagate through seeds, stem or root cuttings and air layering. The preferred and widely followed method of propagation is by seeds followed by stem cuttings. Noni produces flowers and fruits round the year under optimum conditions.



Noni seedlings can be transplanted in about 12 months after germination at a spacing of 3 x 3 m under open condition or under coconut / arecanut plantations as mixed crop. After transplanting, the first year of seedling development may be slow due to transplant shock and after the establishment of a root system, the seedling growth may be much more rapid as the canopy gains size and photosynthetic mass. Fruits are the main commercial and economic part from the noni plant although the roots, bark, stem are also used for various medicinal and industrial preparations. Noni consumption has been reported to help in reducing high blood pressure and cure heart disease and stroke, because of presence of Scopoletin which has scientifically proven to dilate blood vessels resulting in lowering blood pressure. Besides, it has been reported to stimulate the production of Nitric oxide in the body, a chemical which allows the blood vessel to dilate more easily and be more elastic. It has been reported to enhance the functioning of pancreas and the immune system. Noni tea

reportedly used in the treatment of Malaria, general febrifuge and as analgesic. The decoction prepared from Noni's stem bark is said to be used for curing jaundice conditions. The seed oil is reportedly used in the preparation of insecticides. The fruits are reportedly used in preparation of appetizers and brain stimulants.

In Bay Islands, the noni plant is traditionally used and the knowledge about its use is embedded among the lives of aborigines. Extensive research, has revealed that noni trees tolerate high soil salinity, playing an important role in coastal stability, land reclamation and the protection of farms from salt water spray. The agricultural lands inundated with sea water could be restored by planting of noni. The economic analysis of noni cultivation has revealed a B:C ratio of 11.9:1 without considering the opportunity cost factor. According to the rough estimates, the maintenance cost may be about Rs.25/- per plant per year from second year of planting. Noni plants start flowering in 8-10 months after planting. Commercial harvest and yield can be obtained from 20 to 24 months after planting. The trees yield about 10 kg/plant after 24 months of planting. A well grown tree may produce on an average of 30-40 kg fruits/tree in 6-7 harvests in a year. It has been reported that the well grown trees sustain their productivity upto 40-50 years of age. The demand for noni plant and the products are increasing day by day among the people as well as farmers in the Bay Islands.

Considering the need to have high fruit yielding tree types under different growing conditions, ICAR- CIARI has developed four noni varieties viz., CIARI Samridhi, CIARI Sanjivini, CIARI Sampada and CIARI Rakshak through selection and recommended for commercial cultivation.

The salient features of the improved varieties are as follows,

CIARI RAKSHAK



- Crop duration (days) : Fruiting starts at 10 - 12 months and early duration (100 - 110 days from fruit setting to fruit ripening)
- Salient characteristics : Dwarf, well adapted to sea water affected lands and high levels of phytochemicals and antioxidant activity

- Recommended ecology : Sea water affected lands in humid tropical climatic conditions of Andaman & Nicobar Islands and similar ecosystem available elsewhere. It is suitable as intercrop in plantation under saline condition
- Agronomical practices suggested : FYM: 25 kg/plant/year
Vermicompost : 5.0 kg/plant
Spacing : 3.0 m x 3.0 m
- Average fruit yield : 7.0 – 9.0 t/ha/year

CIARI SAMPADA



- Crop duration (days) : Fruiting starts at 12 - 14 months and medium duration (110 - 120 days from bud formation to fruit ripening)
- Salient characteristics : Vigorous, medium sized fruits, top bearer, rich in phytochemical compounds with high antioxidant activity as demanded by industry. Well suited to tropical climatic conditions of Islands.
- Recommended ecology : Humid tropical climatic conditions of Andaman & Nicobar Islands and similar ecosystem available elsewhere. It is suitable as intercrop in coconut and arecanut plantation.
- Agronomical practices suggested : FYM: 25 kg/plant/year
Vermicompost : 5.0 kg/plant
Spacing : 4.0 m x 4.0 m
- Average fruit yield : 15.0 - 17.0 t/ha/year

CIARI SANJIVINI



- Crop duration (days) : Fruiting starts at 12 - 14 months and is early (Bud formation to harvest: 100 - 105 days)