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# *Demonstration of PKM 1 Moringa Leaf Production in Salem District of Tamil Nadu*

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Published on: July 31, 2023

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## **ABSTRACT**

**In Tamil Nadu, the Salem district established in the year 1790 and it has got 20 blocks with maximum temperature of 32°C and 19.6°C minimum, with humidity ranging from 39 to 85%. In Salem, during South West monsoon, a rainfall of 545 mm and during North East monsoon 564.2 mm was recorded. Area under vegetable crops is more than 15250 ha and area under different green leafy vegetables is around 750 ha in Salem District. Area under Moringa cultivation in Salem district is around 50 ha in which one tenth of the area is under leaf production of moringa. The farmers growing moringa in Salem district especially in Veerapandi block are only small and marginal farmers and are getting only lower net profit (in spite of better yield) because of the involvement of middleman in the supply chain of moringa as vegetable to the consumers. To overcome this problem, Krishi Vigyan Kendra, Salem, intervened with demonstrations on semi intensive production techniques like high density planting systems with a spacing of 1.2 x 1.2m for leaf production in moringa PKM 1 variety and conducted many trainings on production techniques of moringa for leaves. The semi intensive system of moringa leaf production is more appropriate for small farmers of Veerapandi block of Salem district and it yields more (about 15t/acre) with lesser maintenance cost when compared to the cultivation of**

**moringa for the purpose of pods. Lesser maintenance cost is due to the need of lesser number of irrigation, less labour for intercultural operations, less cost on manures and fertilizers (application of more of nitrogenous fertilizers only as its cultivation is only for leaf and not for the purpose of pod) and lesser cost on transport from the field to the market. The only disadvantage in moringa leaf production is shedding of leaves (shedding of leaflets from the compound leaf of moringa which has no market value) which will go as waste, if it has not been marketed on time.**

**Hence, demonstrations and trainings conducted by the Krishi Vigyan Kendra imparted moringa growers' knowledge on cultivation techniques of moringa for leaf which enhances the farmer's income and net profit.**

### **INTRODUCTION**

In Tamil Nadu, the Salem district established in the year 1790 and it has got 20 blocks with maximum temperature of 32°C and 19.6°C minimum, with humidity ranging from 39 to 85%. In Salem, during South West monsoon, a rainfall of 545 mm and during North East monsoon 564.2 mm was recorded. The climate factors are suitable to grow green leafy vegetables, especially moringa for leaf purpose.

In India, moringa is grown for its tender pods, leaves and flowers to some extent. Moringa is considered as a back yard tree for the daily use and is commercially cultivated in fields under larger area. It is not only a fast growing leafy vegetable crop, but also a drought tolerant crop and suitable for cultivating in a varied ecosystems and farming systems. Due to its varied utility, free flowering nature and ease of cultivation, the area and demand are on the increase. It is cultivated only in Southern states and around 40,000 to 52,000 farmers are engaged in moringa cultivation commercially. The moringa growing area under irrigated condition is only 70% and remaining 30% is partially rainfed. In Tamil Nadu, moringa is mostly cultivated by marginal (52%) and small farmers (36%) and more than 20 lakh homesteads are having moringa tree in back yard only (Rajangam *et al.*, 2001)

### **REVIEW**

The moringa tree is an important plant and its nutritional and medicinal properties have immense potential against malnutrition, starvation and to use it as a preventive measure for many diseases and maladies. It is a miracle plant, and a divine gift for nourishing and healing of mankind. To get higher yield, trees should be fertilized with 100 g each of urea and super phosphate and 50 g of MOP (muriate of potash) at third month and 100 g urea should be top dressed at sixth month of planting (Ramachandran *et al.*, 1980). Vijayakumar (2000) stated that in moringa increased yield (26.7kg per plant) can be obtained by the application of growth regulators particularly, mepiquat chloride at 50ppm.

Devi (2003) suggested that planting at a wider spacing of 2.5x2.5 m with pinching after 80 days of sowing proved to be best for better growth, yield and quality of annual moringa variety PKM 2. Ramya (2005) conducted a study to determine the optimal spacing of the moringa plants for

leaf production and stated that the spacing of 45 x 45 cm with organic manures was optimum for getting highest leaf yield per plant (438g) and Benefit Cost Ratio (3.32).

### **METHODS AND MATERIALS**

Salem Krishi Vigyan Kendra was established in the year 1994 for disseminating location specific technologies of agriculture and allied fields at district level through Assessment and Refinement of Technologies and Demonstrations and suitable on campus and off campus trainings to the farmers, farm women, rural youth and extension officials and it acted as a Knowledge and Resource Centre in the field of agriculture and its allied activities.

### **MANDATE ACTIVITIES OF KVK ARE**

- Organizing On-Farm Testing (OFT) to identify the location specificity of newly released agricultural and other technologies under various farming systems of Salem District
- Conducting Front Line Demonstrations (FLD) to showcase the production potential of various technologies of crops and other enterprises as well at the farmers' holdings.
- Conducting need based training to farmers to update the knowledge and skills in modern agricultural technologies and training of extension personnel to update their capacities in the frontier areas of technology development.
- Awareness creation about improved varieties, hybrids of different crops and different technologies released from different institutes as well as from innovative farmers of other areas to larger masses through appropriate extension programmes
- Producing good quality seeds, planting materials, livestock, poultry and fingerling varieties / breeds and supplying of products to the farming community at the needy time
- Acting as a knowledge and resource centre for agricultural technology by supporting initiatives of public, private and voluntary sectors for improving the agricultural economy of the district as a whole.

In Salem District, area under vegetable crops is more than 15250 ha and area under different green leafy vegetables is around 750 ha in Salem District. Area under Moringa cultivation in Salem district is around 50 ha in which one tenth of the area is under leaf production of moringa. The farmers growing moringa in Salem district especially in Veerapandi block and Kadayampatti block are only small and marginal farmers and are getting only lower net profit (in spite of better yield) because of the involvement of middleman in the supply chain of moringa as vegetable to the consumers.

To overcome this problem, KVK, Salem, intervened with demonstrations on semi intensive production techniques like high density planting systems with a spacing of 1.2 x 1.2m for leaf production in moringa PKM 1 variety and conducted many trainings on production techniques of moringa for leaves.

### **RESULTS AND DISCUSSION**

The semi intensive system of moringa leaf production is more appropriate for small farmers of Veerapandi and Kadayampatti blocks of Salem district and it yields more (about 15t/acre) with lesser maintenance cost when compared to the cultivation of moringa for the purpose of pods.

Lesser maintenance cost is due to the need of lesser number of irrigation, less labour for intercultural operations, less cost on manures and fertilizers (application of more of nitrogenous fertilizers only as its cultivation is only for leaf and not for the purpose of pod) and lesser cost on transport from the field to the market. So the benefit cost ratio for leaf production is 3.50 and for pod production it is 2.75 only. The adoption percentage of moringa leaf production technologies by the farmers is around 70 percent in Salem.

Regarding annual moringa, it is seasonal regarding its fruit bearing nature and the crop sown during August – September and it will be ready for harvest after six months. Fruits are harvested at tender stage after attaining full growth and development but well before developing of fibre. The period of harvesting extends for 2 to 3 months and the yield per tree was around 250 – 400 pods depending on the type, irrigation and nutrient status etc., (N. Kumar and L. Pugalendhi (2010). The only disadvantage in moringa leaf production is shedding of leaves (shedding of leaflets from the compound leaf of moringa which has no market value) which will go as waste, if it has not been marketed on time.

### **CONCLUSION**

Hence, demonstrations and trainings conducted by the KVK imparted moringa growers' knowledge on cultivation techniques of moringa for leaf which enhances the farmer's income and net profit.

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