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Success Story on Improved Practices in Finger-millet for Higher Productivity under Rainfed Condition

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Abstract

Finger millet is one of important small millet grown extensively in rainfed conditions of Dharmapuri district. Farmers used to cultivate the crop under marginal and poor soils with no or low input application. Also knowledge on cultivation of high yielding varieties is meagre. As a result farmers experiencing low yield and thereby low income through this crop. Hence, Krishi Vigyan Kendra has demonstrated the high yielding varieties with improved package of practices in Finger millet under rainfed conditions. Results of the demonstration indicated that farmers got higher grain yield and income through adoption of improved practice over the existing farmers practice.

Introduction

Finger millet (*Eleusine coracana* L. Gaertn) is one of the important millets grown extensively in Dharmapuri District. About 60 percent of the area under Finger millet is being cultivated under rainfed condition during *kharif* season. Under rainfed condition, due to the uncertainty in rainfall occurrence of moisture stress at various crop growth stages leads to reduction in yield and in crop loss to some extent. Apart from moisture stress, lack of knowledge on the availability of drought tolerant varieties, prevalence of nutrient deficiency, pest and disease incidence also affect the finger millet productivity.

Interventions Made by the KVK

To overcome the problems faced by the farmers and to create awareness among the farmers, frontline demonstration was taken up to demonstrate the potential of the drought tolerant, short duration variety with the improved package of practices in comparison with farmers practice in 10 farmers' holdings of Dharmapuri district during 2016-17. One of the beneficiary farm women Tmt. Amudhavalli, Kambainallur, Morappur block, Dharmapuri district has adopted the following technological interventions in finger millet cultivation.

Technological Interventions

Improved Practice

- Cultivation of new variety ML 365.
- Time of sowing: First week of August.
- Spacing: 30 cm × 10 cm.
- Seed treatment with biofertilizers *viz.*, *Azospirillum* and *Phospho bacteria* each @ 25 g kg⁻¹.
- Seed treatment with *Pseudomonas fluorescens* @ 10 g kg⁻¹.
- Integrated nutrient management:

- Basal application of FYM @ 12.5 t ha⁻¹.
- Recommended dose of NPK @ 40:20:20 kg ha⁻¹.
- Soil application of TNAU millet micronutrient mixture @ 7.5 kg ha⁻¹.

- IDM practices for blast disease

Farmers Practice

- Cultivation of variety GPU 28.
- Time of sowing: First week of August.
- Seed treatment practice: not followed.
- Nutrient management: Basal application of 20:20:20 complex fertilizer @ 125 kg ha⁻¹.
- IPDM practices: not followed.

The crop was maintained and observation on growth and yield attributes were recorded (Figure 1 & 2). The economic parameters viz., net return and benefit cost ratio were calculated.



Figure 1: Performance of Finger millet variety ML 365

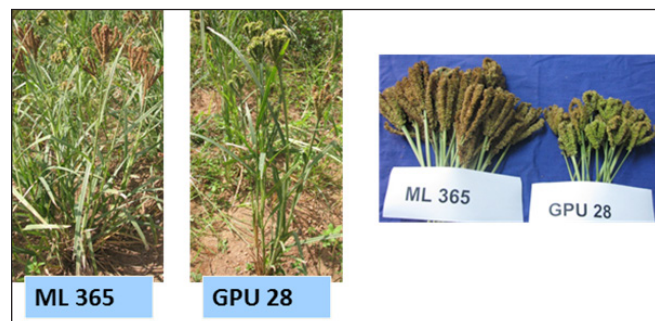


Figure 2: Yield attributes of Finger millet under improved practice and farmers practice

Results and Outcome of the Intervention

Results indicated that cultivation of drought tolerant finger millet variety ML 365 with improved practices recorded higher average grain yield of 23.1 q ha⁻¹ (Figure 3). The farmers practice recorded lower average grain yield of 18.4 q ha⁻¹. Adoption of improved practices increased the yield of finger millet to the tune of 25.5 percent compared to the farmers practice under rainfed condition. Besides, the incidence of blast disease was not reported in the demonstrated variety.

Farmers earned the net income of about Rs. 18,440.00 ha⁻¹ through the cultivation of ML 365 variety with integrated crop

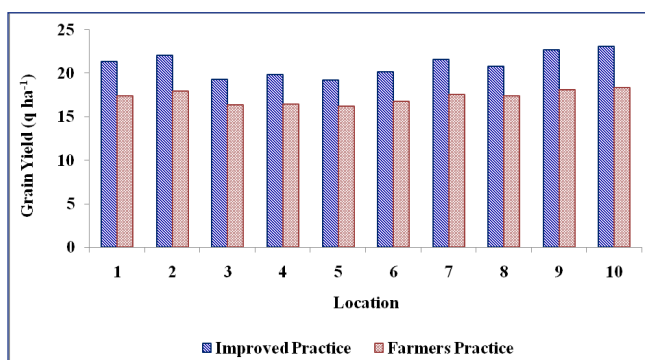


Figure 3: Grain yield of Finger millet (q ha⁻¹) under improved practice and farmers practice

management practices and Rs. 11,760.00 ha⁻¹ with farmers practice. Hence, farmers realized the higher benefit cost ratio (1.72) through the cultivation of ML 365 variety with integrated crop management practices compared to farmers' practice (1.51).

Upscaling of the Improved Technology

- Through the conduct of frontline demonstrations in 10 locations by the Krishi Vigyan Kendra, farmers were impressed with the performance of Finger millet variety ML 365 in terms of short duration, higher number of tillers per plant, length and size of the ear head, tolerance to blast disease and yield under rainfed condition. Hence, the variety has been popularized through the fellow farmers.
- Characteristics and performance of the variety has been communicated to the extension officials in the monthly zonal workshop meetings.
- Features and suitability of the variety with integrated crop management practices has been popularized among the farmers through conduct of meetings and trainings.
- Technology upscaling through seed production and distribution to the farmers by Krishi Vigyan Kendra along with Agricultural Department.
- Finger millet variety with integrated crop management practices has been demonstrated to farmers (100 numbers) under the Tamil Nadu Innovation Initiative (TANII) and State Balanced Growth Fund (SBGF) funded project on Promotion of millets for enhanced productivity and nutritional security.

Conclusion

Under rainfed condition, cultivation of finger millet variety ML 365 with improved practices enhanced the grain yield and income of the farmers thereby improves the livelihood condition of the farming community.