



# Evaluation of High Yielding Ragi Varieties for Western Zone of Tamil Nadu

S. Saravanakumar

ICAR – Krishi Vigyan Kendra, Myrada, Erode District – 638453, TamilNadu

### ARTICLE INFO

#### Article history:

Received 27 July 2017

Revision Received 14 January 2018

Accepted 2 March 2018

#### Key words:

Ragi, on farm trial, Yield

### ABSTRACT

Ragi (*Eleusine coracana*) is the major staple food crop cultivated in the western zone of Tamil Nadu. However the productivity is quite low. An attempt was made to identify suitable high yielding varieties for this region through on farm trials in Erode District during 2013-14. The study revealed that ML-365 recorded higher grain yield of 2584.5 kg/ha and high number of tillers 8.28 which was on par with Co-15 variety compared to other varieties. Higher net return of Rs. 31605.5 /ha and benefit cost ratio of 2.81 was recorded in ML-365 compared to the other varieties. Farmers satisfied with ML-365 due to its high tillering & yielding nature. Considering the above facts, ML-365 would be a better option to the farming community for enhancing the productivity of ragi in western zone of TamilNadu.

## 1. Introduction

Ragi or finger millet (*Eleusine coracana* L.) is one of the common millets in several regions of India. It is also commonly known as Koracan in Srilanka and by different names in Africa and has traditionally been an important millet staple food in the parts of eastern and central Africa and India (FAO, 1995). Ragi is the major millet crop cultivated in Western Ghats and rain-fed regions of Erode district. Ragi is rich in carbohydrates, calcium, fibre, proteins and vitamins, contains slow releasing carbohydrates and provides continuous energy and is being promoted as food for diabetics (Sebastin *et al.*, 2005). In addition the straw of the ragi plant is act as excellent fodder for livestock. In TamilNadu, ragi is cultivated over 1.32 lakh/ha every year, of which 95 percent of the area comes under rainfed conditions only. The area under finger millet cultivation is drastically reduced from 12000 ha to 5000 ha over a decade of time (Anonymous, 2013). Many of the farmers are growing ragi crops by using local varieties and save their seeds for next season also. Due to the continuous cultivation of the same and local varieties leads to the reduction in yield.

Hence the study was planned to identify the suitable high yielding varieties for the western zone of TamilNadu.

## 2. Materials and Methods

The present study was carried out by ICAR – KrishiVigyan Kendra, MYRADA in the Bargur hill which is located in Western Ghats of Erode District during the year 2014 in the five selected farmer's field. On the receipt of monsoon, the sowing was performed by the farmers as per the scientist guidelines. Three improved varieties like Co-15, GPU-67 and ML-365 varieties selected for on farm trials with the local check of Co-14 ragi were taken for the trial purpose. The special features of the selected varieties are presented in Table 1. Each variety sown in an area of 0.25 acre in each farmer's field and the package of practices followed as per the TamilNadu Agricultural University recommendations. Before implementing the trails all the selected farmers were trained on how to use the technologies for improving the productivity per unit area. The data on plant height, number of tillers per plant, grain yield, cost economics of all the varieties were recorded.

\*Corresponding author: [agrisarwan@gmail.com](mailto:agrisarwan@gmail.com)

**Table 1.** Varieties selected for on farm trial and its special features

Varieties	Special features
Co-15	<ul style="list-style-type: none"> <li>• Long duration, bold grain, non-shattering, non-lodging, blast resistant with preferable grain quality with nutritious fodder characteristics</li> <li>• Grain yield of 2950 kg/ha under rainfed condition</li> <li>• Developed and released by TamilNadu Agricultural University in 2013</li> </ul>
GPU – 67	<ul style="list-style-type: none"> <li>• Semi dwarf plants (85 - 90 cm) with decumbent plant type, semi compact ears with tip incurved fingers (7-8) of 6.9 - 7.0 cm length, 1000 seed weight 3.1 - 3.3 g</li> <li>• Grain yield of 4000 - 4500 kg/ha</li> <li>• Developed and released by University of Agricultural Sciences, Bangalore in 2009</li> </ul>
ML-365	<ul style="list-style-type: none"> <li>• Medium height, semi compact ears with tip incurved fingers Distinguishing morphological characters, Days to maturity: 110 – 115, Reaction to biotic and abiotic stress: Resistant to neck blast and tolerant to drought</li> <li>• Profuse tillering, high yielding Average grain yield (q/ha) : 50 – 55</li> <li>• Developed and released by University of Agricultural Sciences, Bangalore in 2008</li> </ul>
Co-14 (Local check)	<ul style="list-style-type: none"> <li>• 8 – 9 top curved fingers per panicle, 5 - 9 productive tillers, Synchronized maturity, Non-lodging growth habit, Easythresh ability, Rich in protein (12.43%) and calcium (0.66%)</li> <li>• Grain yield of 2892 kg/ha under rainfed condition</li> <li>• Developed and released by TamilNadu Agricultural University in 2004</li> </ul>

### 3. Results and Discussion

On farm trials revealed that ragi variety ML-365 recorded the higher average grain yield (2584.5 kg/ha) and average high number of tillers (8.28) was on par with Co-15 variety. Data presented in table 2. Test weight of ragi recorded higher in Co-15 (3.17 gram) was on par with ML-365 compared to other varieties.

**Table 2.** Growth and yield attributes of ragi varieties

Parameters	Co-15	GPU-67	ML-365	Co-14 (Local check)
Plant height (cm)	110.0	94.0	105.6	115.0
Number of tillers / plant	8.0	8.0	8.28	6.05
Test weight (gram)	3.17	2.96	3.16	2.89
Grain yield (kg/ha)	2450.0	2275.0	2584.5	1750.0

The higher plant height of 115 cm recorded in local check followed by 110 cm in Co-15 ragi. The variation in plant height due to the characteristics features of the plant and management practices adopted by the farmers. The findings of the present study are in line with the findings of Hiremath and Nagaraju (2009) and Dhaka *et al.* (2010).

Gross and net return of Rs. 49105.50 /ha and 31605.50/ha, respectively was recorded in ML-365 cultivation followed by the cultivation of Co-15 recorded the gross return of Rs. 43091.40 /ha and Rs. 25741.40 /ha net return. The lowest gross and return observed in local heck of Co-14 ragi. The highest benefit cost ratio of 2.81 recorded in ML-365 followed by 2.48 in Co-15 ragi. The least benefit cost ratio of 1.73 recorded in local check. The results are in line with Venkatesh Gandhi *et al.* (2012).

Based on the findings, it is concluded that ML-365 recorded higher grain yield, high tillering capacity and it is on par with CO-15. But higher return and benefit cost ratio recorded in ML-365 and the farmers were satisfied with ML-365 due to its profused tillering capacity and straw yield too. Therefore ML-365 ragi variety would be identified as a better variety for western zone of TamilNadu.

**Table 3.** Cost Economics for Selected Ragi Varieties

Parameters	Co-15	GPU-67	ML-365	Co-14 (Local check)
Gross cost (Rs./ha)	17350.00	17350.00	17500.00	17150.00
Gross Return (Rs./ha)	43091.40	41407.20	49105.50	29712.20
Net Return (Rs./ha)	25741.40	24057.20	31605.50	12562.20
Benefit cost ratio	2.48	2.39	2.81	1.73

---

## References

- Anonymous 2013. Annual Review Report. ICAR –KVK, MYRADA, Erode District, Tamilnadu. pp 27
- Dhaka BL, Meena BS, and RL Suwalka (2010). Popularization of improved maize production technology through frontline demonstrations in south-eastern Rajasthan. *J Agric Sci* 1(1): 39 - 42
- Food and Agricultural Organisation (FAO) of the United Nations. (1995). Sorghum and millets in human nutrition (FAO Food and Nutrition Series, No. 27). ISBN 92-5- 103381-1
- Hiremath SM, and MV Nagaraju (2009). Evaluation of frontline demonstration trials on onion in Haveri district of Karnataka. *Karnataka J Agric Sci* 22(5): 1092-1093
- Sebastin L, Gowri S, and J Prakash (2005) Quality characteristics of ragi – incorporated Chakli – An Indian Deep fried product. *J Food Process Preservation* 29(5-6): 319-330
- Venkatesh Gandhi R, Shilaja Hittalmani and N Naresh Baabu (2012). Performance of new ragi variety ML-365 by adopting production technology in Southern Karnataka, India. *International J Plant Sci* 7(1): 176-180