



## AN ANALYSIS OF RAGI PRODUCTION IN TUMAKURU DISTRICT

**Ms.Radha.H.H\***    **Dr.Padmini.S.V\*\***

*\*Research Scholar, Department of Studies and Research in Economics, Tumkur University, Tumakuru.*

*\*\*Assistant Professor, Department of Economics, University College of Arts, Tumkur University, Tumkur.*

### **Abstract**

*Indian Agriculture producing many crops from cereals to millets, vegetables to different kinds of fruits, finger millet (Ragi) is the one among; Ragi is growing across the India in different weather conditions. Ragi is the one of the major crop in the southern states, Karnataka, Tamil Nadu, Andhra Pradesh are cultivating and producing, in consumption also Ragi is using in many parts of the Southern India. In Karnataka Ragi is cultivating and consuming mainly in the Old Mysore region. In Karnataka, Tumakuru District cultivating and producing Ragi abundantly in all Ten Taluks, Tiptur stands in the first place in Ragi Production, Pavagada Taluk comes in the last rank. Majority of the Ragi cultivation in the Tumakuru are under the dry land cultivation in a specific period, means in the monsoon time, otherwise some farmers are cultivating Ragi in Irrigation system. Ragi cultivation in Pavagada, Madhugiri, Koratagere and Sira Taluk in borewell irrigation. Ragi is cultivating in organic method and Ragi cultivation required very less inputs compared to commercial crops, but Ragi could not bring expected income to the farmers of the Tumakuru District.*

**Key Words:** *Finger Millet, Area, Production and Productivity, Animal Fodder, Co-Operatives, Agri Farming Resources.*

### **Introduction**

Agriculture has playing vital role in Economic development of all the developing countries. Their main activity of an economy is agriculture and backbone of the economy, even today agriculture contributing immense to the National Gross Development Product, but in the recent days its contribution to Indian Economy is declining, manufacturing and service sector acting major contributor to the economy, Agriculture has been considered as primary sector of the Indian Economy. Indian Agriculture Producing variety of Products from cereals to millets, vegetables to fruits and different kinds of food products, Indian Agriculture Production is a diversified, it means many weather conditions are producing their own kind of Agriculture Products, Agriculture yield also varied from region to region. Indian Agriculture also employing 60 percent of Indians, their daily bread, Income, culture, customs and livelihood supported by agriculture, Indian Agriculture supplying to many raw products to many of small and medium Industries in India. Indian Agriculture producing many types of millets, finger millet is one among that, Finger Millet(EleusineCoracona) is an agriculture crop is a low cost cereal form, staple food and wonder crop for arid and semi- arid areas of many African and Asian countries including India. It is also known as Ragi in South India. Ragi is a staple and significant crop producing and consuming in South India. According to FAO estimates, India produces more than 30 percent of total global millet. India accounts for nearly one third of the world millet production out of 9.9 million tonnes of millets produced, 25 percent is contributed byfinger millet. India produced 19.29 lakh tonnes of ragi from an area of 11.75 lakh hectares with an average productivity of 1641 kg per hectare. In India, Ragi is mostly grown and consumed in Rajasthan, Karnataka, Andhra Pradesh, Tamil Nadu, Orissa, Maharashtra, Uttara khand and Goa, Maharashtra, Tamil Nadu and Uttarkhand produced the bulk of Ragi in the country. In total area of ragi crop is 2.5 million hectares and 2.2 million tonnes of production in the country.It has been calling in different names in local languages in different regions of the India. In India Finger Millet is commonly called as Ragi in Kannada and Telugu, Mandua /Mangal in Hindi, Kodra in Himachal Pradesh, Mandia in Oriya, Taidalu in Telangana region, Kezhvaragu in Tamil, PanjiPullu in Malayalam, Nagli/Nachni in Marati, Madukula/Mandhal in Panjabi, Bouto in Gujarathi and Marwa in Bengali etc., Ragi is mentioned in India ancient scripts even inthe Ramayana and Mahabharathepics, the ancient Sanskrit writers who referred to it as 'Rajika'. But Botanical name of Ragi is Eleusinecoracona, cultigens of the wild species Eleusineindica (L.) Gaertn, some sources reveals that Ragi was existence in pre Aryans period in the Indian sub-continent and food of the Indian early civilizations.Ragi is versatile in the form in which it is consumed. Almost ragi crop produced by the farmers they consume 80 percent for their own consumption. In fact, the ragi grain is



malted and mixed with milk, boiled water or yogurt. Also ragi flour is made into flatbreads, including thick, leavened dosa and thinner and even unleavened rotis. It can be ground and cooked into cakes, balls, puddings. The straw from finger millet is used as animal fodder. Homemade ragi malt is one of the most popular infant's food after six months and above. Because of its highly nutritional content.

### Review of Literature

**Sachin Bharadwaj, Rahul Singh (2015) "From farmers to agri-preneurs: A case study of Tumakur district"** This study shows that, with the increasing of population their percapita share of land and water resources has reduced substantially. A result rural people has faced the problem of unemployment. Agriculture being a major source of livelihood, the productivity in agriculture is significantly low in country. While the productivity can be attributed to illiteracy, lack of awareness, poor dissemination of technology, inadequate investment in agricultural inputs and poor communication of information services, lack of profitability in mainly due to inadequate and efficient infrastructure required for forward and backward integration, poor post-harvest and processing facilities and poor connective with market, resulting in exploitation by large number of middle men. To overcome this problem, farmer's co-operative has been promoted to supply various agricultural inputs and organise the marketing of farm produce. Most of the co-operatives could carry out the work economically and efficiently due to lack commitment from the elected leader and unfair trade practices. So the farmers and their agri farming resources for cultivating more crops as agri-preneurs.

**M. Sankaran(2017) "Status of Ragi crop: Changing trends and growth of its area, production and productivity in India"** In coarse cereal crop Ragi(Finger Millet ) is one of the major crop and its production is not only in terms of food security, but also creating better nutrient for people. It has several varieties such as yellow, white, tan, red, brown only the red coloured are cultivated extensively throughout the world. The main objective of this paper is to analysis the trends and growth of area, production and productivity of Ragi crop in India. This study indicated that compound growth rate of area under Ragi has decreased -1.10 percent, production has increased 0.36 percent and productivity has increased 1.47 percent during 1950 to 2015 in India. Compound growth rate of area under Ragi cultivation has increased 4.35percent, production has increased 4.12 percent and productivity has increased 1.93 percent during the selected states of India.

**VeerabhadrapaBellundagi, K. B. Umesh and S. C. Ravi (2016) "Growth Dynamics and forecasting of fingermillet(Ragi) production in Karnataka"** The study suggests the aims at examining the growth and instability of area, production of finger millet crop in the state and India. The study based on time series data on areaproduction and productivity of period I (1984-85 to1997-98) and period II(1999-00 to 2014-15). The growth rates in the area, production and productivity were calculated using compound growth rates. The trend lines showed an increase in both production and productivity in major Ragi growing districts of Karnataka in both the periods, even though the showed area under the crop is decreasing. The analysis indicates that there was negative of growth in area and positive growth in productivity in all the major ragi growing districts of Karnataka. For forecasting Ragi production, different linear and non-linear growth models were explored. The forecasting results showed that, even though there was a decleration in area, the production of Ragi was increasing due to increase in productivity in the future time.

**Vinay Kumar (2017), "Evaluation of finger millet (Eleusinecoracana (L.) germplasm for high temperature tolerance"**, Productivity of finger millet reached a plateau in recent years due to frequent moisture stress coupled with increased microclimate temperature. To improve the productivity, identification of donors responsive to high temperature is an essential component for breeding programme. In this direction to exploit the existing genetic variability, primarily a laboratory technique namely Temperature, Induction Response(TIR) has been adopted to screen 42 germplasm accessions. Wherein, two day old seedlings were exposed to induction temperature of 32 degrees to 53 degrees' c for five hours and lethal temperature of 53-degree C for three hours.

These contrast accessions were evaluated under field conditions for their stability in terms of physiological traits and productivity. Tolerant accessions showed higher chlorophyll content, membrane integrity, Photiosynthetic parameters and yield attributes compared to sensitive genotypes. Based on the TIR and field



study accessions, GE-3885, GE-4955(heat tolerant) and; GE-4898 and KJNS-52(heat sensitive) have been identified as donors for crop improvement programme.

### Objectives

The following are the specific objectives of the present study.

1. To analyse the Ragi cultivation in the Tumakuru District.
2. To evaluate the Ragi cultivation benefits in the Tumakuru District.
3. To Analyse the Problem encountered in Ragi Cultivation in Tumakuru District.

### Methodology

The present study on an analysis of Ragi cultivation in Tumakuru district is mainly based on secondary data. The data are collected from the Joint Director, Department of Agriculture, Tumakuru District, District at glance from the Tumakuru District Collector Web site, Tumakuru and referred various journals and books.

### Ragi Crop Cultivation Area and Production in Karnataka

Largest cultivation and biggest producer of Ragi found in Karnataka. Ragi is growing in Karnataka in rainfed and in many types of irrigation. The percentage share of Ragi production in total production Ragi is highest. Karnataka tops in the Indian in Ragi production with a contribution of 67 percent to total Indian Ragi Cultivation and Production, followed by Tamil Nadu 12 percent and Maharashtra 7 percent contribute. Tamil Nadu is having highest productivity of 2715 kgs per hectare, followed by Karnataka (1871 kg per hectare) which is higher than the country's average productivity 1641 kg per hectare. Ragi can be grown any season of the year and crop is capable of standing with in harsh dearth. Ragi is a rich source of protein and mineral compared to any other millet. More eighty percent of the crop is grown as a Khariff crop. Karnataka has been suffering from deficient rainfall, resulting in acute drinking water shortage and large scale crop losses. Ragi can be grown in Rainfed area and in irrigation system and can survive and yield upto to 305 deficiency in rainfall. Any way Ragi is the main cultivation crop and used for consumption in Karnataka, without Ragi Products in the South Indian food, it will not be a complete food, that a kind of food attachment to south Indians and in old mysore region of the Karnataka.

**Table-1, Ragi Cultivation Area and Production in Karnataka**

Year	Cultivation Area of Ragi (in Lakhs of hectare)	Ragi Production (in Lakhs of Tonnes)
2011-12	6.80	11.52
2012-13	6.43	8.58
2013-14	6.86	12.03
2014-15	7.08	12.98
2015-16	7.05	11.88

Source: Joint Director, Agriculture Department, Tumkur District.

This Table shows that area and production of ragi crop in Karnataka in different years. In 2011-12 year 6.80 lakhs of hectare area produced 11.52 lakhs of tonnes ragi. In 2012-13 year area of ragi crop is decreasing, whereas production also decreasing that is 8.58 lakhs of tonnes ragi produced. Laataer 2013-14 and 2014-15 year area of ragi of ragi crop was increasing 6.86 to 7.08 lakhs of hectares and also increases in 12.03 to 12.98 lakhs of tonnes. In 2015-16 year area of ragi crop was 7.05 lakhs of hectare and 11.88 lakhs of tonnes ragi produced. It shows that fluctuation in ragi crop area and production in Karnataka.

Ragi is mainly grown in Tumakuru, Ramanagara, Kolar, Mandya, Bengaluru Rural, Hassan, Chikkaballapura, Mysore, Chitradurga, Davanagereetc, districts in Karantaka state. There is instability in ragi crop area, production and productivity in different districts. Agriculture is primary rain fed marked by low productivity to the lack of water resource. Tumakur district is one of the main Ragi crop growing districts. Ragi is a rich source of Fibre, helps in lower Cholestoral level. Definitely it is a healthy food. It have been used as the both irrigated and unirrigated crop. So ragi is a staple food, which is cultivated in the dryland also. Tumakuru is the second largest



district in the state. It has ten taluks. As per Annual season and crop report(ASCR) 2016-17 District statistical office, Tumakuru report total 539836 hectares land utilisation for agriculture.

### Ragi Cultivation in the Tumakuru District

Tumakuru district is the second largest district of the Karnataka. It is hot, moist, semi arid eco-sub region. The total geographical area is 1064.75 sqkm. Totally 539.83 sq km land use for agriculture production. The total 156.301 hectare area irrigated by different sources. Other than irrigated area depends on rainfall. Basically Tumkur is the dryland area for agriculture. Ragi is the staple, drought crop which is suitable to produce in dryland crop cultivated in both tropical and sub tropical regions. Tumakuru is one largest ragi producing district in Karnataka. Ragi crop requires day temperature 30 degree C to 34 degree C and 22 degree C to 25 degree C nightly temperatures for optimal growth along with good temperatures for optimal growth along with good sunshine. It thrives best in the areas where annual rainfall is about 100 cm. The annual rain fall average is only 39 inches in Tumakuru district.

**Table-2, Ragi Cultivation and Production in Tumakuru District**

Year	Area (in hectares)	Production (in Tonnes)	Yield (Kg/Ha)
2012-13	1592244	246797.2	1550.00
2013-14	175024	266036	1520.00
2014-15	170691	264571	1550.00
2015-16	162274	251525	1550.00
2016-17	143580	223984.8	1560.00
2017-18	123514	3348862	2140.00

Source: Joint Director, Agriculture Department, Tumakuru District.

The above table explains the last 6 years ragi production area, production and yield per hectare. In 2012-13 to 2014-15 area of ragi crop is increasing, later 2015-16 to 2017-18 the area of ragi crop is decreasing. In 2012-13 to 2017-18 ragi production fluctuations is there. But 2017-18 less area is used for ragi cultivation, than 3348862 tonnes produced in Tumakuru district. It shows that if area used for ragi crop is less, than production of ragi is increasing. Yield of ragi per hectare average 1550. But in 2017-18 yield also increasing 2140 per hectare. High yielding improved varieties of finger millet using in Karnataka as well as in Tumakuru district. CO-9, Co-13, CO(Ra)-14 and TRY-1, Payur-1, Payur-2, VL mandua-101, VL mandua-124, VL mandua-149, VL mandua 204, VL mandua-146, VL mandua-314, VL-mandua -315, H-22, K-1, Hullu bele, karegidda, Jasarilimbi, Madayyanagiri-1, Madayyanagiri-2, Doddajadesanga and Jenumudda.

### Ragi Cultivation in the Different Taluks of Tumakuru District

Ragi Cultivation is the one of the major Cultivation in the District, in all Taluks of the District Ragi is cultivating in the Rabi and Khariff season, in the District Ragi is producing for the consumption and marketing in the District. Ragi is producing in large scale in the district, in some season yield had been bumper, so Government of Karnataka was opened Ragi purchase Centres in the District to Purchase directly from the Ragi grown farmers. The below table shows the Ragi Cultivation in the different Taluks of the Tumakuru District.

**Table – 3, Ragi Cultivation Area in Different Taluks of Tumakuru district in the year 2016-17**

Sl. No.	Districts	Area of Ragi Crop (in Hectares)
1	Chikkanayakanahalli	19255
2	Gubbi	19631
3	Koratagere	6784
4	Kunigal	25301
5	Madhugiri	4694
6	Pavagada	320



7	Sira	9044
8	Tiptur	16975
9	Tumakuru	16234
10	Turuvekere	13394
	<b>Dist. Total</b>	<b>1,31,632</b>

Source: As per Annual Season Crop Report(ASCR)2016-17, DSO, Tumkur.

In the above table shows that different taluks of Tumakuru district are cultivating ragi crop. All the ten taluks are having ragi crop cultivation in irrigation land and dryland both. In the above table Tiptur Taluk showing highest ragi cultivation in the Tumakuru district with 16975 hectares of land, in Tiptur Taluk, farmers are growing Ragi cultivation in the dry land, adequate and seasonal rainfall boosting Ragi Cultivation in the Tiptur Taluk, the lowest Ragi Cultivation Taluk in the District is Pavagada Taluk with 320 hectares of land, Pavagada having lowest rainfall and arid region in the District. Tumakuru Taluk, GubbiChikkanayakanahalli and Turuvekere Taluks are follows in the series next to Tiptur Taluk.

### Conclusion

Ragi is a main crop of Tumakuru district. In some of taluk like Pavagada, Madhugiri in Tumakuru district are growing less amount of Ragi and cultivation area is also less these Taluks are not having irrigation facilities and rainfall is very low recorded, groundnut is the main crop in this Taluks. Ragi is a crop which can withstand severe drought conditions and can even be grown throughout of the year, Ragi Cultivation in the District are mainly in the dryland cultivation rather than cultivation under irrigation, weather condition and suitable environment and climatic conditions in the District also some amount contributing to cultivate Ragi in large scale in the District, but the main issues facing by the District farmers are marketing, prices for Ragi slashes frequently and Ragi bringing less income compared to other commercial crops farmers of the District. Government will need to support Ragi cultivating farmers by providing inputs fertilizers; pesticides, tractor and Ragi separation machine at reasonable rates and market, otherwise government should provide higher Minimum Support Price or Purchase in the crop season to Ragi.

### References

1. Antony ceaser, T.Maharajan, T. P. Ajeesh Krishna, M.Ramakrishnan, G.Victor Roach, Lakkaula Satish and SavarimuthuIgnacimuthu(2018) Finger millet(*Eleusinecoracana(L.) Gaertn*): improvement; current status and future interventions of whole Genome sequence. Doi.10.3389/fpls.2018.01054
2. B. Malathi, Chari Appaji, G. Rajender Reddy, K. Datatri and N. Sudhakar(2016) Growth pattern of millets in India. *Indian Journal Agriacultural Research*,50(4);382-386
3. M. Sankaran(2017) Status of Ragi crop: Changing trends and growth of its area, production and productivity in India, volume-5,Issue 7,EPRA International Jpurnal of Economic and Business Review
4. VeerabhadrapaBellundagi, K. B. Umesh and S.C. Ravi Growth dynamics and forecasting of finger millet(Ragi) production in Karnataka
5. Christian Goverman, K.B.Umesh, Sylvain Quiadeville, B. Ganeshkumar, S. Sakamma and Simon Moakes(2018) The Economic Realty of underutilised crops for climate Resilence , food security and Nutrition; Assessing finger millet productivity in India. *Agriculture*,8,131;doi 10.3390/8090131
6. Amubhashukla, AdarachLalit, Vinay Sharma, SharadVaaaats and Afrozalam(April 2015) Pearl and Finger millet; The hope of food security. *Appllied Research Journal* Vol.1, Issue 2, pp. 59-66.