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# **A Comparative Study of Fertilizer Prices Purchased by Farmers from Rythu Bharosa Kendras (RBKs) and Other Agencies in Andhra Pradesh**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Rythu Bharosa Kendras - a one stop solutions for all agriculture & allied issues, was launched by state government of Andhra Pradesh in 2020. It addresses various issues and provide services to the farmers at the village level. Fertilizers are one among the services offered at Rythu Bharosa Kendras. The current study was carried out during the year 2022 and 2023 to find any significant variation in the average price of the fertilizers purchased by the farmers from Rythu Bharosa Kendras versus other agencies in Tirupati and Chittoor districts of Andhra Pradesh. A

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representative sample of 120 farmers in two districts of Andhra Pradesh i.e., Tirupati and Chittoor were selected for the study. Through a pre-structured interview schedule, prices of fertilizers purchased by the farmers from Rythu Bharosa Kendras vs other agencies were collected. In the study area, other agencies from where farmers purchased fertilizers included private fertilizer wholesalers, retailers, fellow farmers, non-institutional financiers, etc. To study the average price comparison, the set of fertilizers that were commonly purchased at Rythu Bharosa Kendras and other agencies were selected. They were Urea, Diammonium phosphate (DAP), Muriate of Potash (MOP), N20:P20:K0:S13 (N:P:K:S fertilizer grade), N10:P26:K26 (N:P:K fertilizer grade). From the data collected and through descriptive statistical analysis it was clear that for all the common fertilizers the average amount of fertilizer per bag at Rythu Bharosa Kendras was comparatively lower than that of fertilizers purchased at other agencies. The average price variation of fertilizer per bag at Rythu Bharosa Kendras to other agencies for Urea, DAP, MOP, N20:P20:K0:S13 grade, N10:P26:K26 grade were Rs. 27.5, Rs. 40, Rs. 33, Rs. 44 & Rs. 92 with a variation in percentage by 10.3%, 2.96%, 2.84%, 3.26% & 6.31% respectively. By ensuring the prompt availability of required set of fertilizers in line with the cropping pattern of the farmers and by streamlining the supply chain aspects of fertilizers, especially from fertilizers hub to Rythu Bharosa Kendras, will be beneficial & results in cost optimization to the farmers.

**Keywords:** Comparison; perception; other agencies; average price per bag.

## 1. INTRODUCTION

In India, agriculture played a prominent role in economy and employment. In 2022-23 share of Gross Value Added of agriculture and allied sectors in India's total economy was 18.3% and provided an employment opportunity to around two – third of the population in India [1]. Further in agriculture sector, India emerged as net exporter with a value of \$ 50.2 billion in financial year 2022-23 [2]. Andhra Pradesh was one of the most prominent agricultural states and considered as rice bowl of India. Around 66.64 % of state population were from rural areas. In 2022-23 GVA growth rates for Agriculture and Allied sectors was 13.18%. Agriculture sector reported 20.72% growth, while horticulture sector gained 12.58% growth. Similarly, Livestock and fisheries reported a growth rate of 7.32% and 19.41 % respectively [3]. In order to meet the current requirement of food to the growing population, there was a huge need to improve the productivity. Further the issues pertaining to farming have to addressed effectively. Hence their exist an urgent need to identify the magnitude of various constraints in agriculture and allied sectors. Farm inputs includes seeds, fertilizers, plant protection chemicals, credit facilities, crop insurance and farm machinery [4]. Availability of proper information about this farm inputs will enhance the overall efficiency of farming operations and further improve the net profit to the farmers [5,6]. Several interventions were implemented by both the state and central government through various programmes like PM Kisan, YSR Rythu Bharosa and etc [7] to

support the overall farming operations. As a part of these interventions, state government of Andhra Pradesh has launched the centres as one stop solution for all agriculture and allied issues in the name of Rythu Bharosa Kendras in each corner of the state on May 30, 2020 [8]. These centres played a prominent role in each and every aspect of farming. Currently, 10778 RBKs were offering their services to the farmers across the state [9]. Further the state government ambitiously started selling of certified agricultural inputs to the farmers in these centres. The main objective of RBK was to streamline all the stakeholders of agriculture into a single channel to offer farmers the required inputs to improve their productivity, farm income and sustainability [10,11]. Fertilizers are one among the services offered at Rythu Bharosa Kendras. Fertilizers are one of the major farm inputs which contribute to crop growth & productivity. In this context the present study was being conducted to study the price per bag comparison of fertilizers purchased by the farmers at Rythu Bharosa Kendras with other agencies which includes private fertilizer wholesalers, retailers, fellow farmers, non-institutional financiers & etc particularly in Tirupati and Chittoor districts of Andhra Pradesh. To analysis the significance of the extent of price advantage the farmers obtained by purchasing the fertilizers at Rythu Bharosa Kendras with comparison to other agencies. The study conducted for following objective: To study the average price variation of fertilizers purchased by the farmers at Rythu Bharosa Kendras and other agencies.

## 2. METHODOLOGY

The current study was carried out during the year 2022 and 2023 in Tirupati and Chittoor districts of Andhra Pradesh. Out of 35 and 33 mandals of Tirupati and Chittoor districts respectively, three mandals in each district were selected randomly. In Tirupati district, Yerved, Renigunta, Chandragiri mandals were selected since different ranges of crops were cultivated in these three mandals of Tirupati district. In Chittoor district, Chittoor, Bangarupalem and Gudipala mandals were selected for study based on the range of crops cultivated in these mandals. Two Rythu Bharosa Kendras were selected out of each selected mandals in each district based on farmers fertilizer consumption. Rythu Bharosa Kendras selected were Amanduru, Merlapaka, Karakambadi, Gajulamandem, Ramireddipalle, and Buchinaidupalle in Tirupati districts. In Chittoor district, Mutthukur, Thalambedu, Thimojipalli, Setteri, Panaturu and Papasamudram were selected for the study. Ten farmers from each Rythu Bharosa Kendras were selected randomly for the study thus making sample size of one hundred and twenty. Price of fertilizer purchased by the farmers at Rythu Bharosa Kendras and price of fertilizer purchased at other agencies were collected. The common fertilizer which were purchased by the farmers at Rythu Bharosa Kendras & other agencies considered to analyse their price variation. These fertilizers were Urea, Diammonium phosphate (DAP), Muriate of Potash (MOP), N20:P20:K0:S13 grade & N10:P26:K26 grade. The primary data pertaining to this study was collected from farmers through a pre-structured schedule by personal interviews.

Secondary data was collected from various sources like, state government of Andhra Pradesh, web sources of public and private organizations and etc. The data collected was analysed by using descriptive statistics and other appropriate tools to attain the study objectives.

## 3. RESULTS AND DISCUSSION

Average price comparison of fertilizers (per bag) purchased by farmers at Rythu Bharosa Kendras (RBKs) vs other agencies.

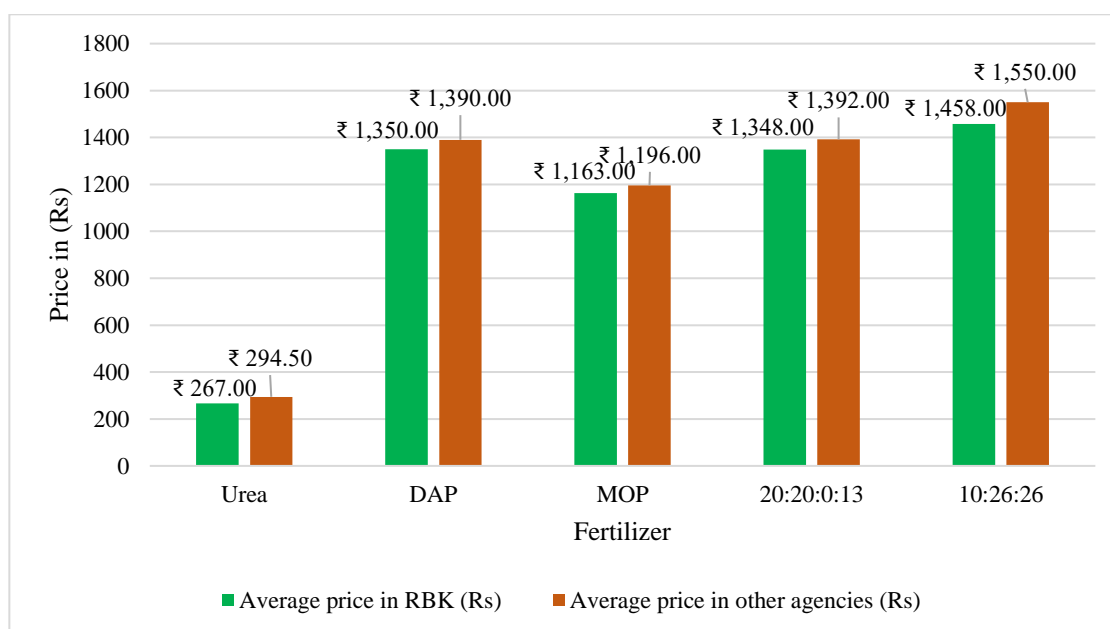
Data regarding the price of fertilizer purchased at Rythu Bharosa Kendras and other agencies was collected from the sample farmers. Among a wide range of fertilizers five were most commonly purchased by the sample farmers at Rythu Bharosa Kendras (RBKs) and other agencies according to farmers' convenience and availability of fertilizers. Those fertilizers were Urea, DAP, MOP, N20:P20:K0:S13 grade, N10:P26:K26 grade. From Tables 1,2 & Fig. 1, it was clearly depicted that average price of urea at RBKs vs other agencies was Rs. 267 and Rs. 294.5 respectively with a price variation of Rs. 27.5 that is 10.3 % . Average price of DAP at RBKs vs other agencies was Rs. 1350 and Rs. 1390 respectively with a price variation of Rs. 40 that is 2.96 % . Average price of MOP at RBKs vs other agencies was Rs. 1163 and Rs.1196 respectively with a price variation of Rs. 33 that is 2.84%. Average price of N20:P20:K0:S13 grade at RBKs vs other agencies was Rs. 1348 and Rs.1392 respectively with a price variation of Rs. 44 that is 3.26 % . Average price of N10:P26:K26 at RBKs vs other agencies was Rs. 1458 and Rs. 1550 respectively with a price

**Table 1. Price comparison of different fertilizers (Rs/bag)**

S. No	Fertilizer name	Average price at RBK (Rs)	Average price at other agencies (Rs)
1	Urea	267	294.5
2	DAP	1350	1390
3	MOP	1163	1196
4	N20:P20:K0:S13	1348	1392
5	N10:P26:K26	1458	1550

**Table 2. Price variation in fertilizer (Rs./bag)**

S. No	Fertilizer name	Price variation (Rs)	Variation in percentage (%)
1	Urea	27.5	10.30
2	DAP	40	2.96
3	MOP	33	2.84
4	N20:P20:K0:S13	44	3.26
5	N10:P26:K26	92	6.31



**Fig. 1. Price comparison of fertilizers purchased by sample farmers at Rythu Bharosa Kendra vs other agencies**

variation of Rs. 92 that is 6.31 %. Hence, it was clear that the average price of set of fertilizer was comparatively lower at RBKs than other agencies for Urea, DAP, MOP, N20:P20:K0:S13 grade, N10:P26:K26 grade.

Reasons for low prices of fertilizers at Rythu Bharosa Kendras in comparison with other agencies

- Fertilizer prices at Rythu Bharosa Kendras remain stable without any fluctuations.
- The entire supply chain process is devoid of any profit-making aspects.
- There's no room for informal trade practices.
- As the authorized agency, the state agricultural department supervises the various fertilizers operations in Rythu Bharosa Kendras. This supervision effectively eradicates any activities driven by unauthorized personnel for profit.

#### 4. CONCLUSION

This article has examined the average price per bag comparison of fertilizers purchased by sample farmers at Rythu Bharosa Kendras (RBKs) versus other agencies. Average price of urea at RBKs vs other agencies was Rs. 267 and RS. 294.5 respectively, average price of DAP at

RBKs vs other agencies was Rs. 1350 and 1390 respectively, average price of MOP at RBKs vs other agencies was Rs. 1163 and 1196 respectively, average price of N20:P20:K0:S13 at RBKs vs other agencies was Rs. 1348 and 1392 respectively and average price of N10:P26:K26 at RBKs vs other agencies was Rs. 1458 and 1550 respectively. Hence, it was clear that the average price of fertilizer was comparatively lower at RBKs than at other agencies with considerable price variation. This results in absolute optimizing the cost of cultivation to an extent. The average price variation of fertilizer per bag at Rythu Bharosa Kendras versus of other agencies for Urea, DAP, MOP, N20:P20:K0:S13 grade, N10:P26:K26 grade were Rs. 27.5, Rs. 40, Rs. 33, Rs. 44 & Rs. 92, respectively, with a variation in percentage by 10.3%, 2.96%, 2.84%, 3.26% & 6.31 % respectively.

#### POLICY IMPLICATION

In the context of improving the operational aspects of Rythu Bharosa Kendras, especially with reference to fertilizers & to improve the fertilizer price optimization for the farmers the following policy implications were recommended. Since Rythu Bharosa Kendras was located in the vicinities of villages, this resulted in complete avoidance or reduction in fertilizer carrying cost right from point of purchase to agricultural fields. As a result, farmers are more willing to purchase

the available set of fertilizers at Rythu Bharosa Kendras. Hence, implementation of location specific fertilizer demand forecasting prior to cropping season and improving supply chain aspects of fertilizers, especially from fertilizer hub to Rythu Bharosa Kendras, need to be implemented for prompt availability of all the required set of fertilizers at Rythu Bharosa Kendras in line with the cropping pattern of the farmers. This will result in more convenience for farmers for their ease of operations and optimize cost of cultivation.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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