

## TREND OF MARKET PRICE OF DRY FODDER IN NORTH-WESTERN INDIA

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(Received : 18 March 2024: 30 March 2024)

### SUMMARY

India has vast resources of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. The livestock industry in Rajasthan is highly dependent on the availability and affordability of fodder quality. This research aims to analyse and understand the market dynamics of dry fodder in Rajasthan mandis *i.e.*, Bikaner and Chomu from 2018 to 2023. A thorough understanding of pricing trends is crucial for stakeholders in the livestock industry. This study showed that for wheat dry fodder, prices were low during April-May whereas for Rice, Bajra, Sorghum and cluster bean dry fodder, period of October-November is best to purchase at low price and Khejri loong prices was low during June-July. This paper outlines the trend of cereal, millets and conventional dry fodder market prices in Rajasthan mandi for last six years, their comparative study and reason of price fluctuation.

**Key words:** Livestock, dry fodder, fodder market and comparative study

All sectors of the economy have a significant and rightful role in addressing the nation's socioeconomic development issues (Reddy *et al.*, 2013; Duncan *et al.* 2020; Kumawat *et al.*, 2020). Global food security and the world's agros-food sector are directly impacted by the agricultural market, which is not just one of the important facts of the Indian economy and guarantees national food security (Dikshit and Birthal, 2010; Datta, 2013). Dairy is the single largest agricultural commodity contributing 5% of the national economy and employing more than 8 crore farmers directly (Hegde, 2014). India is ranked 1<sup>st</sup> in milk production contributing 23% of global milk production. Milk production has increased by 51.05% over the past 8 years from 146.3 million tonnes during 2014-15 to 221.06 million tonnes during 2021-22 (Singh *et al.*, 2022). Milk production is growing at the annual growth rate of 6.4% over the past 8 years whereas world milk production is growing at 1.2% per annum (Kannan, 2012). The milk production is highly dependent on the availability and affordability of quality feed and fodder (Grover and Kumar, 2012; Singh *et al.*, 2018).

Rice (*Oryza sativa* L.) and wheat (*Triticum aestivum* L.) straw are a dominant component of

ruminant diets in developing countries. Work with other cereals demonstrates the value placed on cereal straws and stovers by smallholder farmers indicated by their willingness to pay a quality premium (Duncan *et al.*, 2020). Pearl millet (*Pennisetum glaucum* L.) and Sorghum (*Sorghum bicolor* L.) are very important dual-purpose summer crop grown for both fodder and grain. Both are fast growing, short duration, drought tolerant crop having high biomass production potential, tillering and ratooning ability with high protein content (10-12%) free from making it as an outstanding fodder crop for the rainfed situations and serves as an ideal crop under regions of low rainfall conditions. Cluster bean seed and straw are good source of nutritive fodder and feed for livestock. Being a leguminous crop, it enriches the soil fertility by fixing the atmospheric nitrogen. Khejri (*Prosopis cineraria* (L.) Marbride) tree is found growing in arid and semi-arid parts of Rajasthan, Gujarat, Haryana, Punjab, Delhi and some parts of southern India. Its highly nutritious leaves constitute important source of fodder for livestock (Kumari *et al.*, 2020).

This study aimed to quantify price of cereals, millets, pulses and convention dry fodder market price in Rajasthan markets in northwestern India.

## MATERIAL AND METHODS

A survey was conducted covering two trading locations viz., Bikaner and Chomu, in Rajasthan from 2018 to 2023. The monthly market price data for six years from 2018 to 2023 was collected from Chara mandi, Bikaner and Chomu (Jaipur); newspapers *i.e.*, Rajasthan Patrika from Bikaner and Jaipur and Nafa Nuksan, Bikaner (Fig. 1). Both locations are situated in northwestern India which gives diverse climatic condition of Rajasthan to outline a clear picture of market price of dry fodder. Total six dry fodder data was collected *viz.*, Cereals- Wheat and Rice, Millets- Pearl millet and Sorghum, Cluster bean and conventional fodder- Khejri Loong on monthly basis. Khejri also known as ‘kalpavriksha of the desert’, leaves locally known as ‘loong’.

## RESULTS AND DISCUSSION

The monthly market price data from Bikaner and Chomu mandi of different fodder crops and conventional straw presented in Table 1 and Fig. 2.

### Trend of market prices in Bikaner mandi over last six years

The wheat straw dry fodder price (2018-2023) in Bikaner mandi ranged from Rs.491.67/qt (2018) to Rs.1118.75/qt (2022) with average Rs.752.08/qt (Table 1 and Fig. 2). The rice straw dry fodder price (2018-2023) varied from Rs.392.71/qt

(2018) to Rs. 675.00/qt (2022) with average price Rs. 503.65/qt. The bajra straw price (2018-2023) fluctuated from Rs. 554.17/qt (2021) to Rs. 722.92/qt (2022) with average Rs. 611.46/qt from Bikaner mandi. The sorghum straw dry fodder price (2018-2023) varied from Rs. 612.50/qt (2018) to Rs. 939.58/qt (2022) with average Rs. 722.92/qt. The cluster bean straw price (2018-2023) fluctuated from Rs. 627.08/qt (2018) to Rs. 943.75/qt (2022) with average Rs. 747.66/qt from Bikaner mandi. The khejri loong dry fodder price (2018-2023) ranged from Rs. 916.67/qt (2018) to Rs. 1400.00/qt (2022) with average Rs. 1201.74/qt from Bikaner mandi.

### Yearly trend of market price in Chomu mandi over last six years

Chomu mandi wheat straw dry fodder price (2018-2023) ranged from Rs.567.39/qt (2018) to Rs.1003.26/qt (2022) with average Rs.718.71/qt (Table 1 and Fig. 2). The rice straw dry fodder price (2018-2023) varied from Rs.345.65/qt (2018) to Rs.658.70/qt (2022) with average price Rs. 456.60/qt. The bajra straw price (2018-2023) fluctuated from Rs. 480.43/qt (2021) to Rs. 758.70/qt (2022) with average Rs. 611.46/qt. The sorghum straw dry fodder price (2018-2023) varied from Rs. 588.04/qt (2018) to Rs. 1010.87/qt (2022) with average Rs. 710.40/qt. The cluster bean straw price (2018-2023) fluctuated from Rs. 289.13/qt (2018) to Rs. 465.22/qt (2022) with average Rs. 345.77/qt from Chomu mandi. The khejri loong dry fodder price (2018-2023) ranged from

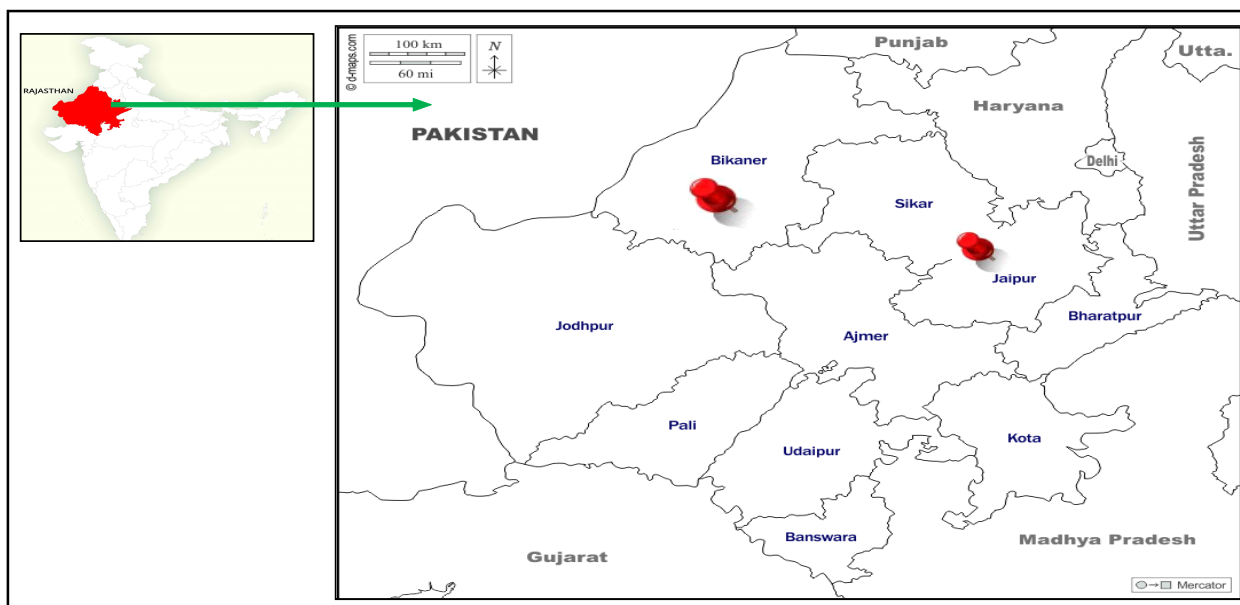


Fig. 1. Location of data collection: Bikaner and Chomu mandi.

TABLE 1  
Annual market prices of dry fodder for six years (2018-2023) from Bikaner and Chomu mandi.

Year	Mandi	Wheat straw	Rice straw	Bajra straw	Sorghum straw	Clusterbean straw	Khejri loong
2023	Bikaner	933.33	606.25	612.50	781.25	668.75	1320.83
	Chomu	787.50	539.58	612.50	764.58	383.33	2312.50
2022	Bikaner	1118.75	675.00	722.92	939.58	943.75	1400.00
	Chomu	1003.26	658.70	758.70	1010.87	465.22	2086.96
2021	Bikaner	633.33	408.33	554.17	650.00	777.08	1108.33
	Chomu	645.65	393.48	480.43	628.26	334.78	1860.87
2020	Bikaner	614.58	445.83	637.50	691.67	733.33	1379.17
	Chomu	602.17	389.13	535.87	602.17	305.43	1778.26
2019	Bikaner	720.83	493.75	585.42	662.50	741.67	1085.42
	Chomu	706.30	413.04	547.83	668.48	289.13	1591.30
2018	Bikaner	491.67	392.71	556.25	612.50	627.08	916.67
	Chomu	567.39	345.65	522.83	588.04	296.74	1354.35

Rs.1354.35/qt (2018) to Rs.2312.50/qt (2023) with average Rs. 1201.74/qt from Chomu mandi. For most of the dry fodder, market prices is higher in year 2022 which is due to Covid-19 attack. The world is being attacked by a virus known as Covid-19. The day life of human being was completely affected due to Covid-19 which ultimately leads to reduction in forage production that's why prices were higher in 2022 as compare to 2023 (Mthembu *et al.*, 2022).

#### Comparative analysis of market price of different dry fodder

As per comparative study from Bikaner and Chomu mandies prices of dry fodder stated that almost all the dry fodder prices were higher in Bikaner mandi except Khejri loong as compared to Chomu mandi (Fig. 3). Bikaner is more drought prone area which leads to reduction in dry fodder production. This may be the main reason that almost all fodder prices were high as compared to Chomu mandi. Rice and wheat are globally dominant staple cereals and supply a substantial proportion of caloric intake in Low and Middle-Income Countries (LMICs). Straw byproducts from these cereals form the basal diet for ruminant livestock across much of the developing world (Kumawat and Misra, 2020). The price differential between wheat and rice straw was associated with higher nutritional quality. The major price difference in both regions found for clusterbean around 42-61% whereas minimum price difference for sorghum dry fodder around 2.32%. This difference may be due to dry climate condition in Bikaner, sorghum is a drought tolerant plant so can grow in Bikaner region also, while clusterbean is not much drought tolerant crop (Kumari

*et al.*, 2020). Khejri is native to arid areas *i.e.*, Western Asia and Indian subcontinents which makes Bikaner regions more suitable for cultivation of Khejri than Chomu regions (Datta, 2013). Which leads to lower cost of Khejri Loong in Bikaner region.

#### Recommendation for live stocker to purchase dry fodder

Wheat is a *Rabi* season crop which was sown during October -November and harvested between March-April. So, quantity of wheat dry fodder was scared during January-February which create a high market price of wheat dry fodder in mandies (Fig. 2). Although wheat dry fodder prices were reduced during April-May due to bumper availability of dry fodder after wheat harvesting.

Rice, Bajra, Sorghum and cluster bean are Kharif season crops which sowing was done during June-July and harvested between September-October. So, after harvesting (October-November) prices were reduced due to available harvested dry fodder of these crops and during June-July prices were higher due to scarcity of dry fodder of these crops (Fig. 2). Khejri loong loonging was done during June-July, which leads to reduction in market price of loong.

#### CONCLUSION

India has vast resources of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. Our results show that the monetary value from cereal, millet and conventional straw pricing trends which could significantly contribute to live stocker to purchase dry

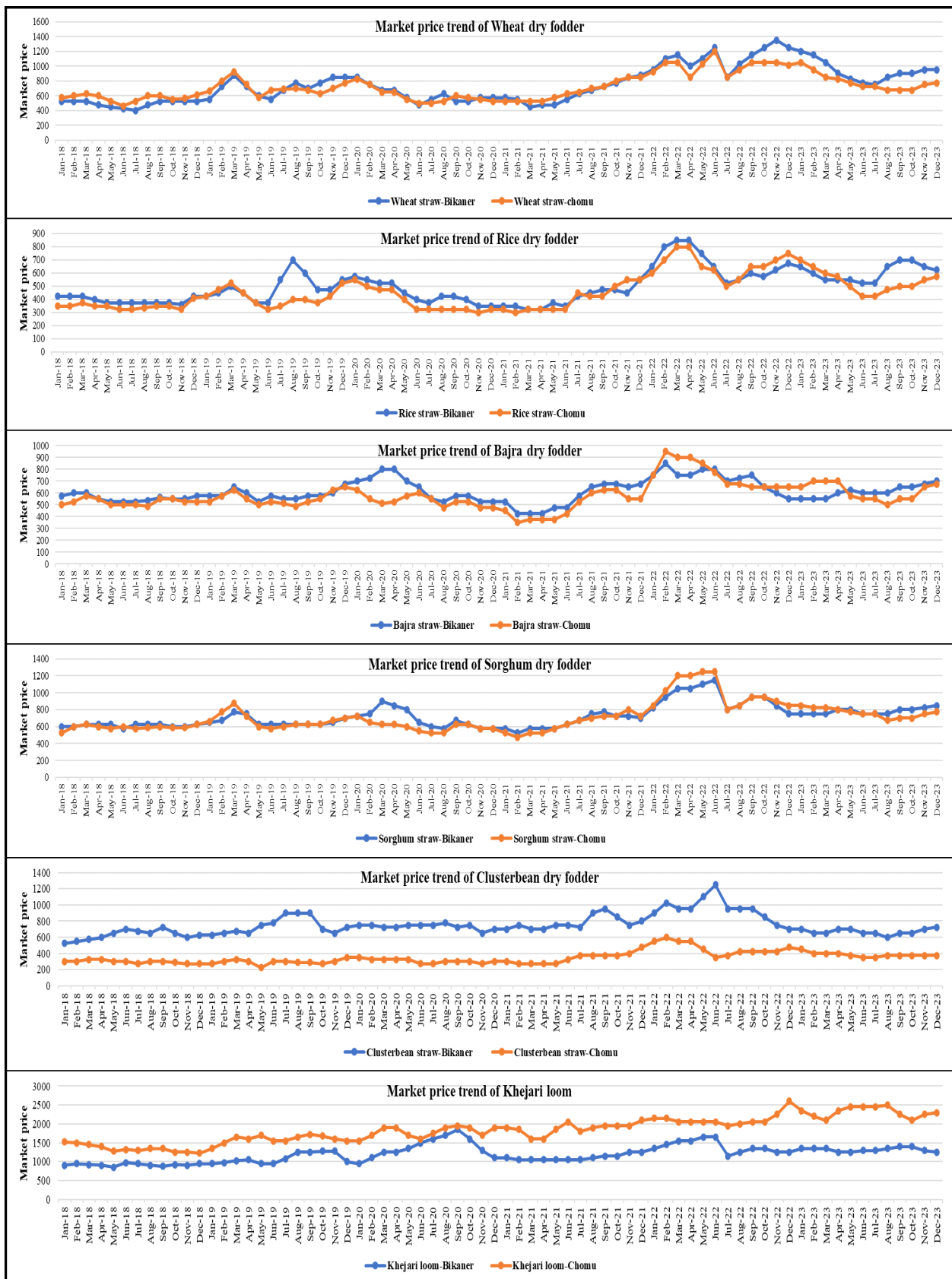


Fig. 2. Weekly six year (2018-2023) graphical representation of market prices data of dry fodder from Bikaner and Chomu mandi.

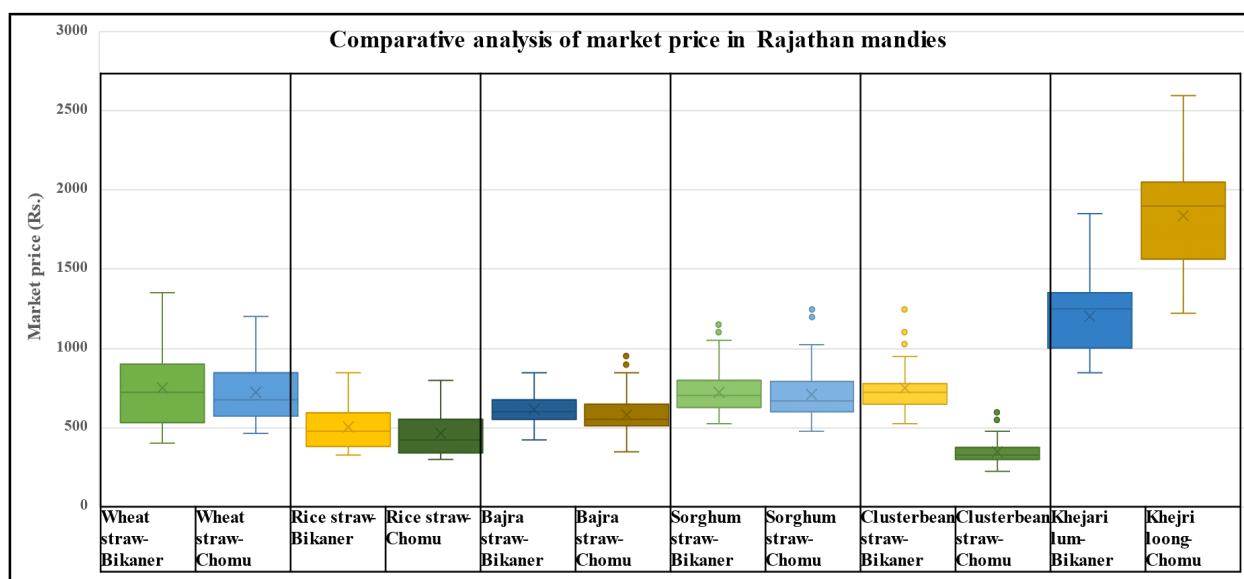


Fig. 3. Comparative study of dry fodder market prices in Rajasthan.

fodder. For wheat dry fodder, prices were low during April-May whereas high during January-February. For Rice, Bajra, Sorghum and cluster bean, period of October-November is best to purchase dry fodder of these crops whereas Khejri loong prices was low during June-July. So, by using this information live stocker can purchase dry fodder for animals at low prices.

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