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Evaluation of the Price Differences of Turmeric across India, a Statistical Analysis

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I. Introduction

Turmeric known as 'Indian Saffron' is originated from Southeast Asia. Turmeric is used as an important ingredient in Indian foods and the root of turmeric plant is used to prepare yellow spice. The botanical name of turmeric is Curcuma Longa and belongs to Zingiberaceae family. Erode a city in Tamil Nadu, is the world's largest producer and an important spot market of turmeric in Asia. Popular varieties of turmeric are China scented, Thodopuza, Red streaked, Alleppey, etc.

Indian Scenario

India is the world's largest producer and supplier of turmeric. The other major producers are Bangladesh, Pakistan, China, Indonesia, Myanmar, Taiwan and Burma. Global production of turmeric is estimated around 10 lakh tonnes. And India leads the turmeric market and contributes 80 percent to the world production. The major consumers are India, Japan, Srilanka and other African countries.

Significance Of Turmeric As Spice In India

India is the land of spices from time immemorial, and holds the premier position in terms of the number of spices grown, the area under cultivation, and the volume of spices produced. One among the spices is turmeric, an integral component of the cultural, religious and culinary practices in the country. The total acreage under turmeric in India has been estimated variously from 60,000 to 100,000 acres, and the production is nearly 100,000 tons of rhizomes per annum.

Turmeric is the rhizome or underground stem of a ginger-like plant, Curcuma longa L. belonging to the Zingiberaceae family. It is usually available ground, as a fine, bright yellow powder. The whole turmeric is a tuberous rhizome, with a rough, segmented skin. The rhizome is yellowish-brown with a dull orange interior that looks bright yellow when powdered. The main rhizome measures 2.5 - 7 cm (1" – 3 ") in length with a diameter of 2.5 cm (1"), with smaller tubers branching off. In fresh state, the rootstock has an aromatic and spicy fragrance, which by drying gives way to a more medicinal aroma.

On storing, the smell rather quickly changes to earthy and unpleasant. Similarly, the color of ground turmeric tends to fade if stored too long.

Turmeric has always been considered an auspicious material in the Indian sub-continent, both amongst the Aryan cultures (mostly northern) and the Dravidian cultures (mostly southern) and its value extends far in history to the beliefs of ancient Indian population. Yellow and yellow-orange are colors with sacred and auspicious connotations in India, yellow being associated with Vishnu, and as the color of the space between chastity and sensuality. Orange signifies sacrifice, renunciation and courage. In Buddhism yellow is the color of the Bodhisattva Ratnasambhava. In South India, turmeric is considered very auspicious and therefore, is the first item on the grocery list. The turmeric plant is tied around the vessel used to make Sweet pongal on the harvest festival, which is celebrated on the Makarshankranti Day, universally celebrated on 14th of January, every year. Indian cooking employs turmeric liberally. It is added to nearly every dish, be it meat or vegetables. Its principal place is in curries and curry powders. When used in curry powders, it is usually one of the main ingredients, providing the associated yellow color. In current day practice, turmeric has found application in canned beverages, baked products, dairy products, ice cream, yogurts, yellow cakes, biscuits, popcorn-color, sweets, cake icings, cereals, sauces, gelatins, direct compression tablets, etc. In combination with annatto, it has been used to color cheeses, dry mixes, saladressings, winter butter and margarine.

Turmeric also is a highly valued cosmetic ingredient. Pieces of the rhizomes are added to water to make an infusion that is used in baths. It is reported that washing in turmeric improves skin tone . Turmeric is currently used in the formulation of some sun screens.

Turmeric Grown In Various Parts Of India

Turmeric is grown in many Asian countries with India as the largest producer. About 30 varieties of Curcuma are known, but what is known as turmeric in commerce is derived from Curcuma longa L., with rhizomes from other species with low curcumin content being passed off as turmeric. For example, turmeric grown in parts of Japan and Indonesia have low curcumin content and low yield

per hectare. The price of turmeric is directly related to its curcumin content. The main turmeric growing states in India are Andhra Pradesh, Maharashtra, Orissa, Tamil Nadu, Karnataka and Kerala. Turmeric requires a hot and moist climate. It thrives the best on loamy or alluvial, loose, friable and fertile soils. It grows at all places ranging from sea level to an altitude of 1220m above sea level. It is very sensitive to low atmospheric temperature. It is grown both under rain fed and irrigated conditions. Curcuma longa accounts for about 96% of the total area under cultivation, the remaining 4% being accounted for by C. aromatica which is grown mostly in small areas in East and West Godavari district of Andhra Pradesh, and Thanjavur and South Arcot districts in Tamil Nadu. Because climatic conditions vary from state to state, the curcumin content and yield of turmeric vary from state to state. For example, C. longa grown in the climatic conditions of North Indian plains at Lucknow had curcumin content varying from 0.61% to 1.45% on dry weight basis. Similarly, turmeric grown in Kandhamal district of Orissa had hardly 1.5% curcumin, while that grown in Laxmipur block of Koraput district of the same state has curcumin content as high as 7 percent. Recently, the Kerala Agricultural University developed and released two high-yielding varieties, with curcumin contents above 7%. These two varieties with high curcumin content would fetch a premium price in the market, according to the scientists who developed the varieties. Thus, owing to favorable climatic conditions, the best quality turmeric is available from the southern and eastern parts of India.

II. Objectives of the study

The study addresses the objective of evaluating the wholesale price variation of turmeric across India.

III. Research methodology

The study is based on secondary source of information . Descriptive type of research design has been used for the purpose in which an attempt is made to see the differences in price through different types of chart and descriptive statistics like mean,median,standard deviation , skewness and kurtosis etc.

IV. Analysis

Frequencies

Statistics

		STATE	PRICE
N	Valid	12	12
	Missing	0	0
Mean			5384.6717
Median			5304.3750
Std. Deviation			2240.6079
Variance			5020324
Skewness			-.160
Std. Error of Skewness			.637
Kurtosis			2.445
Std. Error of Kurtosis			1.232
Percentiles	25		4611.8750
	50		5304.3750
	75		6623.1625

Frequency Table

STATE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ANDHRA P	1	8.3	8.3	8.3
	CHHATISG	1	8.3	8.3	16.7
	GUJARAT	1	8.3	8.3	25.0
	KARNATAK	1	8.3	8.3	33.3
	KERALA	1	8.3	8.3	41.7
	MAHARAST	1	8.3	8.3	50.0
	MEGHALAY	1	8.3	8.3	58.3
	ORISSA	1	8.3	8.3	66.7
	TAMIL NA	1	8.3	8.3	75.0
	UTTAR PR	1	8.3	8.3	83.3
	UTTARAKH	1	8.3	8.3	91.7
	WEST BEN	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

PRICE

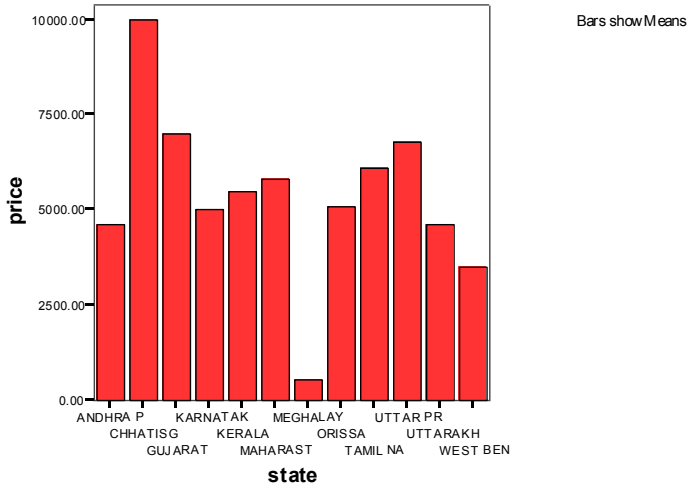
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	525.00	1	8.3	8.3	8.3
	3500.00	1	8.3	8.3	16.7
	4606.50	1	8.3	8.3	25.0
	4628.00	1	8.3	8.3	33.3
	5018.49	1	8.3	8.3	41.7
	5104.97	1	8.3	8.3	50.0
	5503.78	1	8.3	8.3	58.3
	5823.36	1	8.3	8.3	66.7
	6092.65	1	8.3	8.3	75.0
	6800.00	1	8.3	8.3	83.3
	7013.31	1	8.3	8.3	91.7
	10000.00	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PRICE	12	525.00	10000.00	5384.6717	2240.6079	-.160	.637	2.445	1.232
Valid N (listwise)	12								

Interactive Graph

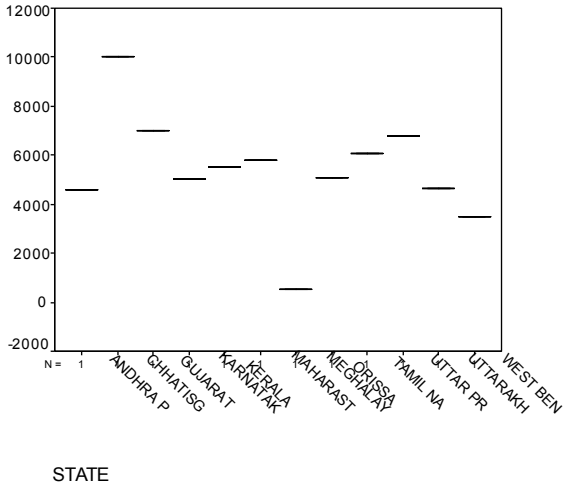


Box plot State

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	STATE	N	Percent	N	Percent	N	Percent
PRICE	ANDHRA P	1	100.0%	0	.0%	1	100.0%
	CHHATISG	1	100.0%	0	.0%	1	100.0%
	GUJARAT	1	100.0%	0	.0%	1	100.0%
	KARNATAK	1	100.0%	0	.0%	1	100.0%
	KERALA	1	100.0%	0	.0%	1	100.0%
	MAHARAST	1	100.0%	0	.0%	1	100.0%
	MEGHALAY	1	100.0%	0	.0%	1	100.0%
	ORISSA	1	100.0%	0	.0%	1	100.0%
	TAMIL NA	1	100.0%	0	.0%	1	100.0%
	UTTAR PR	1	100.0%	0	.0%	1	100.0%
	UTTARAKH	1	100.0%	0	.0%	1	100.0%
	WEST BEN	1	100.0%	0	.0%	1	100.0%

Price



V. Findings

The mean median,standard deviation ,standard error of skewness and kurtosis of wholesale price of turmeric across India is found out to be 5384.67,5304.37,2240.60,0.637 and 1.232 respectively.

VI. Conclusion

The influence of price on production is not significant. Hence in Indian condition production of turmeric is dependent on the regional production conditions than the price. Therefore we can conclude that the farmers across India are debarred of a remunerative price for turmeric.

References

[1]. Akamine H, Hossain MA, Ishimine Y, et al. Effects of application of N, P and K alone or in combination on growth, yield and curcumin content of turmeric (Curcuma longa L.), Plant Prod Sci, 2007, 10:151-54.
[2]. Bos R, Windono T, Woerdenbag HJ, et al. HPLC-photodiode array detection analysis of curcuminoids in curcuma species indigenous to Indonesia, Phytochem Anal, 2007, 18:118-22.
[3]. http://kandhamal.nic.in/km-flori/flori1.htm
[4]. http://www.thehindu.com/thehindu/seta2003/08/28/stories/2003082800090300.htm
[5]. http://www.ikisan.com/links/ap_turmericSeed%20Varieties.shtml
[6]. Garg SN, Bansal RP Gupta MM, Kumar S, Variation in the rhizome essential oil and curcumin contents and oil quality in the land races of turmeric Curcuma longa of North Indian plains, Flav Fragr J, 1999, 14:315-18.
[7]. http://thehindu.com/2007/03/29/stories/2007032902900200.htm
[8]. Aggarwal BB, Shishodia S, Molecular targets of dietary agents for prevention and therapy of cancer, Biochem Pharmacol, 2006, 71:1397-1421.
[9]. Aggarwal BB, Sundaram C, Malani N, Ichikawa H, Curcumin: the Indian solid gold, Adv Exp Med Biol, 2007, 595:1-75.
[10]. Balasubramanyam K, Varier RA, Altaf M, et al. Curcumin, a novel p300/CREB-binding protein-specific inhibitor of acetyl transferase, repress the acetylation of histone/nonhistone proteins and histone acetyltransferase-dependent chromatin transcription, J Biol Chem, 2004, 279:51163-71
[11]. Marcu MG, Jung YJ, Lee S, et al. Curcumin is an inhibitor of p300 histone acetyltransferase, Med Chem, 2006, 2:169-74.
[12]. Jagetia GC, Aggarwal BB, "Spicing up" the immune system by curcumin, J Clin Immunol, 2007, 27:19-35.
[13]. Bhattacharyya S, Mandal D, Sen GS, et al. Tumor-induced oxidative stress perturbs nuclear factor-kappaB activity-augmenting tumor necrosis factor-alpha-mediated T-cell death: protection by curcumin, Cancer Res, 2007, 67:362-70.
[14]. Gautam SC, Gao X, Dulchavsky S, Immunomodulation by curcumin, Adv Exp Med Biol, 2007, 595:321-41