PROBLEMS OF RED CHILLI GROWERS AND COLD STORAGE UNITS – A CASE STUDY OF GUNTUR DISTRICT

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Abstract

Red chilli is the most widely used spice in the world. India is the world leader in chilli production followed by China and Pakistan. India is not only the largest producer but also the largest consumer of chilli in the world. Chillies are grown in almost all the states throughout the country. Andhra Pradesh is the largest producer of Chilli in India and contributes about 26% to the total area under Chilli production. The major chilli growing districts in Andhra Pradesh are Guntur, Warangal, Khammam, Krishna and Prakasam. Guntur district is the biggest potential region, contributing 30% of the total production of Andhra Pradesh, with an annual turnover of around Rs.600 crore. It stands first with respect to area, production and productivity. There are 235 cold storage units (2008) in Andhra Pradesh with a total capacity of 569,307 tons. There are 286 cold storage houses in Andhra Pradesh by the year ending 2010 for all products put together. Among them 199 cold storage houses are specially meant for chillies. Though they are registered as multipurpose cold storage houses, about 99% of the houses are used for storing chillies. At present (2012) Guntur district has about 120 cold storage units and as many as 86 cold storage units are in and around Guntur city itself. Both the chilli growers and cold storage units expressed that they are suffering from certain problems while storing chilli produce. Therefore, an in depth study in this matter can clear all the ambiguities and show the way to come out of the problems which ultimately help the chilli growers in the district in particular and the country in general.

(Key Words: Chilli Production - Cold storage units – Growers – Problems – In depth study)

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Introduction:

Red chilli is considered as one of the commercial spice crops. It is the most widely used universal spice, named as wonder spice. Different varieties are cultivated for varied uses like vegetable, pickles, spice and condiments. In daily life, chillies are integral and the most important ingredient in many different cuisines around the world as it adds pungency, taste, flavour and colour to the dishes. Indian chilli is considered to be world famous for two important commercial qualities - its colour and pungency levels. Some varieties are famous for the red colour because of the pigment capsanthin and others are known for biting pungency attributed to capsaicin. The other quality parameters in chilli are length, width and skin thickness.

Chilli production in the world:

Chilli is raised over an area of 1832 thousand hectares in the World, with a production of 2959 thousand tons. Major chilli growing countries are – India, China, Indonesia, Korea, Pakistan, Turkey and Sri Lanka in Asia; Nigeria, Ghana, Tunisia and Egypt in Africa; Mexico, United States of America in North – Central America; Yugoslavia, Spain, Romania, Bulgaria, Italy and Hungary in Europe and Argentina and Peru in South America. India is the world leader in chilli production followed by China and Pakistan. This shows that the bulk share of chilli production is in Asian countries. The top 10 chilli producing countries, India, China, Ethiopia, Myanmar, Mexico, Vietnam, Peru, Pakistan, Ghana and Bangladesh accounted for more than 85% of the world production in 2009, The lion's share is taken by India with 36% share in global -production, followed by China (11%), Bangladesh (8%), Peru (8%) and Pakistan (6%). India, the largest producer of chillies, is having annual chilli production of around 14 lakh tonne, China with a production of around 4.5 lakh tons, Mexico with the production of around 4 lakh tons and Pakistan producing 3.5 lakh tons of chilli are other major producer of chillies[1].

Chilli Production in India:

India is not only the largest producer but also the largest consumer of chilli in the world. Chillies are the most common spice cultivated in India. Chilli is a universal spice of India. It is cultivated in all the States and Union Territories of the country. India contributes about 36% to the total world production. In India, Chillies are grown in almost all the states throughout the

[1] Food and Agriculture Organization, 2009.

country. Andhra Pradesh is the largest producer of Chilli in India and contributes about 26% to the total area under Chilli, followed by Maharashtra (15%), Karnataka (11%), Orissa (11%), Madhya Pradesh (7%) and other states contributing nearly 22% to the total area under Chilli. The production of Chilli in India is dominated by Andhra Pradesh which contributes nearly 57% to the total production. Karnataka is the second largest producer contributing 12% to the total production followed by Orissa (5%), West Bengal (5%), Maharashtra (4%), Madhya Pradesh (3%) and others about 14% during 2006-07. The major chilly growing districts in Andhra Pradesh are Guntur, Warangal, Khammam, Krishna and Prakasam. Guntur is the biggest chilli producing region, contributing 30% to the total production of AP with annual turnover of around Rs.600 crore. Area and Production of Chilli in this area decides the prices at National level. Chilli production in India is moving northwards on increasing demand from diversified sectors and changing consumption patterns[2].

The state wise area and production of chilli during 2005-06 and major chilli growing tracts in the country are given in the following tables.

Name of the State	Area (hectares)	Production (tons)
Andhra Pradesh	171450	537710
Andaman & Nicobar	388	878
Arunachal Pradesh	2168	2646
Assam	14690	9490
Bihar	3093	3089
Chattisgarh	6510	3600
Gujarat	31650	37840
Himachal Pradesh	740	200
Jammu & Kashmir	996	1006
Karnataka	69880	94500
Kerala	-	1192
Madhya Pradesh	46660	42480

[2] Spices Board, Kochi & Post Harvest Profile of Chilli - Government of India, Ministry of Agriculture (department of Agriculture & Cooperation), Directorate of Marketing & Inspection, Branch Head Office, Nagpur, 2009.

Maharashtra	99300	51214
Manipur	6490	3890
Meghalaya	600	3000
Mizoram	1400	1190
Nagaland	600	3000
Orissa	75120	63290
Punjab	9882	15888
Rajasthan	17720	17530
Tamilnadu	49033	31830
Tripura	1940	2910
Uttar Pradesh	17340	16119
Uttarakhand	2006	4262
West Bengal	51957	60727
Total	681613	1009481

Source: Spices Board, Kochi

Major chilli growing tracts of the country

State	Major chilli growing tracts
Andhra Pradesh	Guntur, Warangal, Khammam, Prakasam, Krishna, Hyderabad, Nizamabad, Kadapa, Rajahmundry and Nellore
Karnataka	Dharwad, Mysore, Hassan, Bangalore, Bellary, Ranibennur, Hubli, Gadag and Byadgi
Maharashtra	Nagpur, Nasik, Ahmednagar, Solapur, Aurangabad, Nanded, Amravati
Punjab	Amristar, Nabha, Patiala
Uttar Pradesh	Bareily and Khurja
Tamilnadu	Coimbatore, Ramanathapuram, Tuticorin, Tirunelveli, Virudunagar, Kanayakumari, Madurai, Salem, Tiruchi, Villupuram and Cuddalore districts
West Bengal	Murshidabad, South & North 24 Parganas, Nadia, Coochbehar, Jalpaiguri, East & West Midnapore districts

Source: NABARD, 2007

Chilli production in India from 1997-98 to 2010-11

	Area('000Ha)	Production('000tons)	Yield(Kg./Ha)

1997-98	840.6	870.1	1035
1998-99	891.2	1043.2	1171
1999-00	959.2	1052.8	1098
2000-01	836.5	983.7	1176
2001-02	880.0	1069.0	1215
2002-03	827.4	894.6	1081
2003-04	774.3	1235.7	1596
2004-05	737.5	1185.5	1607
2005-06	654.0	1014.6	1551
2006-07	763.2	1242.1	1627
2007-08	805.8	1297.9	1611
2008-09	779.1	1269.9	1630
2009-10	767.2	1202.9	1568
2010-11	792.1	1223.4	1568

Source: Dept. of Agriculture and Cooperation, (Horticulture Division), Ministry of Agriculture, Govt. of India. & National Horticulture Board, Data base, 2011.

This above table shows that the acreage of chilli production in the country is actually reduced marginally and rotated between 737,000 hectares to 959,000 hectares from 1997-98 to 2010-11. But production of the chilli crop increased from 870,000 tons to 12, 23,000 tons during the period. Similarly, the yield also increased from 1035 kg/ha to 1568 Kg/ha in the same period.

Chilli production in Andhra Pradesh:

Agriculture is the bed rock of the state's economy as over 72.7% of the total population live in rural areas seeking their lively hood from agriculture and allied activities. Andhra Pradesh is popularly known as **"the bejewelled rice bowl of India".** Agriculture is the chief source of income to the State's economy. Two important rivers of India, Krishna and Godavari, flow through the state providing irrigation. Andhra Pradesh is agrarian in character and it is considered as one of the most progressive states with respect of agricultural development, maintaining high levels of crop production compared to several other states[3].

The state can be divided into three distinct physical regions. The coastal plains, which consist of the best agricultural lands, covers about 35% of the area and comprises reverine and coastal alluvial and red soils with the altitude rising up to 150m above mean sea level. The peninsular plateau covers 52% of the area and lies within an altitude of 150-600m. It comprises numerous hills, seasonal streams and tanks. The Eastern Ghats account for 13% of the area, with altitudes ranging between 600 to 900 m and covered by forests and a series of broken hills and ridges Agriculture contributes 12.9% of the State GDP and employs 62% of the total workforce.

[3] Agriculture action plan for the year 2012-13, Department of Agriculture, Government of Andhra Pradesh.

The net sown area is 37% of the total Geographic area (compared to the National average of 46%). The Gross cropped area is 123 lakh ha with a cropping intensity of 122. Small and marginal farmers account for 83% of land holdings and 46% of operated area. Irrigation covers 35% of the net sown area while the remaining 65% of the net sown area is rain fed.[4]

Andhra Pradesh with high geographical diversity, seven agro-climatic zones, varied soil types and good irrigation resources is better placed for production of various horticultural crops. Horticulture contributes to approximately 4% of the state GSDP. Horticulture crops cover 13% of the gross cropped area in the State. The area under Horticulture is 16 lakh Ha, with an annual production of 118 lakh tonnes. Among the horticulture crops, red chilli occupies first place in the state. The area under chilli cultivation was as high as 2.67 lakh hectares during 1999-2000; it came down to minimal during 2005-06 with 1.72 lakh hectares. Even during 2010-11 it was 1.95 lakh hectares. However, during 2011-12 it was 2.49 lakh hectares. Due to modern methods of cultivation and wide usage of fertilizers and pesticides, the yield of chilli has been increasing year after year and reached from 1852 Kg. Per hectare to an annual average of 3529 Kg. Per hectare irrespective of acreage. Similarly, the production also started increasing year after year, except during 2002-03, 2005-06 and 2010-11, and reached to 9.06 lakh M.Ts during 2011-12 from just 4.96 lakh M.Ts during 1999-2000. The following table depicts the details of this 12 years period (2009-10 year data are not available).

Red Chilli Cropping Scenario in Andhra Pradesh from 1999-2000 to 2011-12

YEAR	AREA (lakh ha.)			YIELD (kg/ha.)			PRODUCTION (lakh M.T)		
	KHARIF	RABI	TOTAL	KHARIF	RABI	Annual avg.	KHARIF	RABI	TOTAL
1999-2000	2.08	0.59	2.67	1824	1952	1852	3.80	1.16	4.96
2000-2001	1.84	0.54	2.38	2235	2129	2211	4.11	1.15	5.26
2001-2002	1.71	0.54	2.25	2715	2365	2631	4.63	1.28	5.91
2002-2003	1.76	0.47	2.23	1758	2105	1834	3.09	1.00	4.09
2003-2004	1.99	0.51	2.50	3315	2668	3184	6.62	1.35	7.97
2004-2005	1.86	0.51	2.37	3221	2954	3164	5.99	1.49	7.48
2005-2006	1.28	0.44	1.72	3268	2753	3136	4.17	1.21	5.38
2006-2007	1.65	0.49	2.14	3698	3179	3579	6.10	1.56	7.66
2007-2008	1.74	0.49	2.23	3669	2731	3463	6.38	1.34	7.72
2008-2009	1.60	0.45	2.05	3711	2989	3554	5.94	1.35	7.29
2010-2011	1.52	0.43	1.95	3231	3385	3308	4.91	1.47	6.38
2011-2012	2.01	0.48	2.49	3707	3351	3529	7.45	1.61	9.06

[4] National Horticulture Mission Action Plan for Andhra Pradesh, Ministry of Agriculture, Government of India September 2005,Prepared by Rabo India Finance Pvt. Ltd

Source: Department of Agriculture, Government of Andhra Pradesh & Agriculture action plan for the year 2012-13, Department of Agriculture, Government of Andhra Pradesh.

Chilli production in Guntur District:

Guntur District is the largest producer of Red chillies in the State and stands first with respect to area, production and productivity. Guntur Market Yard being biggest Market Yard in the Asia, provides flat form for selling and buying of red chillies by the farmers/growers and traders. Total area under chillies in Guntur district is in Kharif and harvesting commences from January to April with February to March as peak harvesting period. Total produce from all parts of the district comes to Guntur Market Yard for marketing from January to April and trading is the continuous activity in the yard throughout the year due to presence of Cold storages at Guntur.

Chilli sowing in the district starts after commencement of the southwest monsoon, i.e., from the first week of August and extends until October. Total crop duration is around 4-5 months, depending upon varieties cultivated climate and the soil type. Harvesting is done through picking from December onwards. Arrivals start from February and continue until April after a proper drying under sunlight.

The following table shows the area and production of chillies in the district.

Chilli Production in Guntur District

Year	Area(in Hectares)	Production(in Metric Tons)
1998-1999	36,880	1,31,427
1999-2000	59,256	1,18,512
2000-2001	50,958	1,49,335
2001-2002	51,567	1,61,450
2002-2003*	59,000	1,19,000
2003-2004*	67,000	3,39,000
2004-2005*	56,000	2,73,000
2005-2006*	41,000	1,94,000
2006-2007	59,740	2,88,940
2007-2008	64,560	2,44,966
2008-2009	66,230	3,14,000
2009-2010*	62,000	3,41,000

2010-2011*	61,000	2,06,000
2011-2012*	75,000	3,32,000

Sources: 1. Department of Horticulture, Government of Andhra Pradesh (1998-2007).
2. Directorate of Economics and Statistics (2006-2009).
3. *Agriculture Market Committee Records and data relates to Kharif crop only

The above table shows that that the area under chilli production in the district is enormous. During the year 1998-99 the acreage for chilli production was 36,880 hectares, producing 1, 31,427 M.Ts. During these 14 years period, i.e. by the year ending 2011-12, the acreage is more than double touching 75,000 hectares and producing 3,32,000 M.Ts, which is also near to double figures. The figures given by Agriculture Market Committee, Guntur, relate to only Kharif crop. If Rabi crop, though accounts a little, added, the actual figures look bigger than they are appearing now. The data in the table clearly shows that the acreage and production of chilli in the district has been increasing year after year with some exceptions.

Chilli is the season specific crop and total produce will come to the market in the months of January to April. This leads to glut in the market. Red chillies can be stored in rural godowns or in the farmers homes for 4-8 months but the quality can't be sustained especially colour and moisture when stored under normal conditions. Storing dried chillies in common godowns/homes results in selling at the existing prices in the market. Availability of cold storages will provide congenial atmosphere for storing red chillies for quite a long period without reduction in quality.

Cold storage scenario:

One of the indicators of economic development of a country is the industry and growth of its storage[5]. Although, a few cold stores were in existence in early thirties, yet a real beginning of this industry was made only after independence. The progress of this industry was very slow up to 1955 when there were only 83 cold stores with an installed capacity of 42,965 tonnes. With the launching of grow more food campaign in the first five

[5] Pankaj Ashwani, Commodity portfolio management of cold storage units in Hyderabad (A.P), M.B.A thesis, University of Agricultural Sciences, Dharwad.

year plan (1951-52 to 1955-56) and simultaneous increase in production of perishables attracted the attention of industrialists towards setting up of cold storage units in the country[6].

India is the largest producer of fruits and second largest producer of vegetables in the world. In spite of that per capita availability of fruits and vegetables is quite low because of post harvest losses which account for about 25% to 30% of production. Besides, quality of a sizable quantity of produce also deteriorates by the time it reaches the consumer. This is mainly because of perishable nature of the produce which requires a cold chain arrangement to maintain the quality and extend the shelf-life if consumption is not meant immediately after harvest. In the absence of a cold storage and related cold chain facilities, the farmers are being forced to sell their produce immediately after harvest which results in glut situations and low price realization. Sometime farmers do not even get their harvesting and transportation costs what to talk of the cost of production or profit. As a result, the production is not getting stabilized and the farmers after burning fingers in one crop switch over to another crop in the subsequent year and the vicious cycle continues. The farmers continue to remain poor even though they take risk of cultivating high value fruits and vegetable crops year after year. A cold storage facility accessible to them will go a long way in removing the risk of distress sale to ensure better returns.

Cold storage units come under agriculture service oriented industry, in general; and horticultural service oriented industry in particular. Thus, cold storage serves as a vital link between the production and consumption. The importance of cold storage is to achieve the twin objectives of price stabilization and fair prices to producers and consumers who have long since been recognized. Concerted efforts have also been made to expand or increase cold storage capacity in our country but the efforts to study their performance and problems are very much lacking.

Andhra Pradesh is the second largest producer of fruits and vegetables in India and it produces more of chillies, turmeric and oil palm than any other state[7]. During 2008, there were 235 cold storage units in Andhra Pradesh with a total capacity of 569,307 tons. The distribution of these units is not uniform across districts. Guntur district accounts for about 26% of the units, followed by Hyderabad/Ranga Reddy districts (19%), and Visakhapatnam (13.6%). These 3 districts account for about 60% (341,018 tons) of the total capacity available in the state. The

[6] NABARD 2003

[7] Status of Cold Storages in India, the Report of the Task Force on Development of Cold Chain in India, Ministry of Agriculture, May 2007

availability is low in a number of rains fed districts. Kadapa, Medak, Prakasam, Srikakulam, Mahbubnagar, and Kurnool have less than 5% of the total cold storage units and less than 3% of the total capacity available in the state.[8] At present there are around 400 cold storage units in the state (for multipurpose (including red chillies) products, fish, milk products, meat products etc.).

Cod storage units in Guntur district:

According to *cold storages association*, Guntur, there are 286 cold storage houses in Andhra Pradesh by the year ending 2010 for all products put together. Among them 199 cold storage houses are specially meant for chillies. Though they are registered as multipurpose cold storage houses, about 99% of the houses are used for storing chillies. The following list shows the number of cold storage houses- product wise, in Andhra Pradesh.

Nature of product(s) stored	Number
Multipurpose	199
Milk products	15
Fish	43
Meat	1
Fruits and Vegetables	20
Ice	8
Total	**286**

The cold storages storing chillies are situated mainly in Guntur, prakasam, Krishna, Warangal, East Godavari, West Godavari, Ranga reddy, and Hyderabad districts. Guntur district is pioneer for cold storage houses dealing with chillies. Being a large producer of chillies, there are about 120 cold storage houses in the district and around 86 are located in and around Guntur city itself.

The Agricultural Market Committee, Guntur receives chillies from different parts of the district. The chilli growers bring their produce to this market and sell during January and April of every season. If the prices are not satisfactory, the growers opt for storage of chillies in cold storage units, where chillies are kept and protected without losing their quantity and quality. This necessitated the establishment of many cold storage units in and around Guntur. The chilli growers keep their chilli bags, weighing around 40 kgs. each, in the cold storage units for a season i.e. from March to December of every year. The storage units charge rent ranging from

[8] P Parthasarathy Rao, PK Joshi, Shravan Kumar and Kavery Ganguly, Agricultural Diversification in Andhra Pradesh, India:Patterns, Determinants and Implications, ICRISAT,2008.

Rs.75 to Rs.110 per bag per season. The growers need to bear *hamali* and insurance charges besides the rent. The cold storage units issue bonds to the chilli growers mentioning the quantity of chilli bags and conditions therein. The chilli growers paying insurance premium leave storage units with storage bonds. If growers require money, they get loan from commercial banks putting these bonds as security.

Cold storage units are established on a large scale in Guntur district mainly because of huge red chilli acreage and production and the resultant formation of big agriculture market yard in Guntur. Further, the capital subsidy scheme of Horticulture Mission (Under National Horticulture Mission (NHM), National Horticulture Board (NHB) provides Credit linked back ended subsidy at 40% of the project cost in general areas and 55% in case of hilly and schedule areas for individual entrepreneurs is available for setting up of cold storages.) or support of NABARD(capital subsidy of 25% subject to a ceiling of Rs.50,00,000) helped the entrepreneurs to come forward and establish cold storage units. The Government of Andhra Pradesh is offering power subsidy of Rs.0.75 ps per unit of electricity consumption for the first 5 years of establishment. Further, there is 100% reimbursement of stamp duty from the state government for land registration and documentation.

The objectives of supporting cold storage units are not unknown. The major objective is to help the chilli growers from forced selling of their produce at cheaper prices and to protect the produce from losing its quality and quantity, thus, helping the normal agriculturist. In the real situation this objective seems to be incomplete. The chilli growers are facing certain problems in storing and maintaining their produce in the cold storage units. Similarly, the small entrepreneurs of storage units are also expressing their own problems in running these units.

Present Scenario:

During the present financial year the yield and the demand for chillies are magnanimous. From the records of Guntur Agriculture Market yard, the demand for chillies is on high scale. There are huge orders from Indonesia, Singapore, Malaysia, Sri Lanka and Pakistan. Between June and August 2012, the exports to China from Guntur itself touched 30,000 tons. Due to continuous floods in China, the demand increased. Further, the orders from Bangladesh also increased. In the past 3 months i.e. from June to August, 2012, the price of chillies raised from Rs.400 to Rs.1000 per quintal depending on the variety.

The main competition for Guntur chillies is from China. As there are unfavourable conditions (floods) in China, the demand for Guntur chillies increased heavily. Out of 12-14 lakh tons of chillies yield in India, 60 to 70% share is from Andhra Pradesh. In general the exports from the state every year ranges from 40,000 to 80,000 tons. But in this season, the exports touched to 2.40 lakh tons by the end of March 2010. During the year 2011 the exports were less due to high prices in the domestic market. At present *type 334* chilli is being exported to Sri Lanka and *type 273*, *endole-5*, *badiga*, *teja* and *devanur* deluxe etc., are exported to countries like Singapore, Malaysia, Thailand and Hong Kong.

Problems faced by chilli growers:

The following are the problems expressed by the chilli growers in marketing and storing their produce.

1. The chilli growers who produce in small quantities are unable to store their produce and **forced to sell it in the market at the existing prices.**
2. The chilli traders and commission agents playing **middlemen role** become a big hurdle to the growers who fail to understand the real market supply and demand position and prices.
3. The capable growers who store their produce in the cold storages face the following problems ----
   a) The **rent charges are increasing** year after year (from Rs.45 to Rs.110 and above per bag weighing 35-45 Kgs.) and storage units are not following the rates fixed by the district administration.
   b) The storage units are **not taking full responsibility** of the stored produce's **quality and quantity** who fix many terms and conditions from the growers.
   c) In case of fire accidents, **the storage units fail to get the insured amount from the insurance companies** and try to escape from the responsibility. For example, the insurance companies have not settled the insurance claims of the growers even after a period of 18 months whose produce caught in fire accidents in 3 cold storages in the last year.
   d) **The storage units' proprietors themselves and the traders store chilli produce** as chilli growers and getting the benefit of cold storages. This making some of the real growers out of reaches of cold storages.
   e) Without giving prior intimation to the concerned growers, the stocks are being sold or auctioned by the cold storage units or banks, who have given loans.

Problems faced by cold storage units:

The following problems are quoted by the storage units.

1. Due to **severe power shortage** in the state, the cost of maintenance of sold storage units increased heavily and the district administration is putting restrictions on rental charges. Increase of power tariff from Rs.4.50 to Rs.6 per unit and at the time of power cut the cost of diesel per hour is around Rs.1200, which increases the cost of maintenance to the greater extent.
2. The growers do not accept for rise in the rental charges despite of the known fact of **increase in the maintenance charges**, in result, running the storage unit became difficult.
3. Fire department is **imposing impracticable conditions** even on the existing cold storage units.
4. Though the insurance premiums are paid on behalf of the growers, **the insurance companies are reluctant in paying the compensation** mentioning no good reasons and creating gap between growers and storage units.

Conclusion:

From the above discussion it is clear that a detailed study on chilli cold storage units and chilli growers is required. Hearing the complaints/problems of both chilli growers and cold storage units, it seems the objective of safeguarding the interests of chilli growers are at stake. The encouragement given by the government in the form of subsidy to the cold storage units should achieve the expected results. Therefore, an in depth study in this matter can clear all the ambiguities and show the way to come out of the problems which ultimately help the chilli growers in the district in particular and the country in general.

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