

COMMODITY PROFILE - CHANA

Origin and History

Chana or chickpea or Bengal gram or gram is an ancient crop that marked its origination even before 10000 B.C. It is said to be one of the oldest pulses known and cultivated in Asia and Europe. The regions of Turkey and the ancient city of Jericho domesticated this crop around 7500 B.C and since then, it started getting famous. Chana was brought to the Western Europe and was known in many areas in the Bronze Age, most popularly, Italy and Greece. Those people consumed chana in various forms like roasted as snacks, raw, carbonized or in broth. With time, many other varieties of chana were developed as it was reached many areas of Asia and Australia.

Nutritional value

Chana is widely appreciated as health food. It is a protein-rich supplement to all cereal-based diet, especially for vegetarians. Pulses proteins are rich in lysine and have low sulfur containing amino acids. It offers the most practical means of eradicating protein malnutrition among vegetarian children and nursing mothers. Chana has a very important role in human diet in our country.

Table.1: Nutritional value of chana (per 100g)

Food	Bengal gram (Whole)	Bengal gram (Dal)
Energy calorie	360	372
Protein (g)	17.1	20.8
Fat (g)	5.3	5.6
Calcium (mg)	202	56
Iron (mg)	10.2	9.1
Thiamin (mg)	0.30	0.48
Riboflavin (mg)	0.15	0.18
Niacin (mg)	2.9	2.4
Vit. C (mg)	3	1
Vit. A (mcg)	189	129

Source: Indian Council of Medical Research Publication

Botanical description

Chana belongs to family Leguminosae. It is a small, much branched herbaceous plant. The Indian grams have been classified in two broad groups

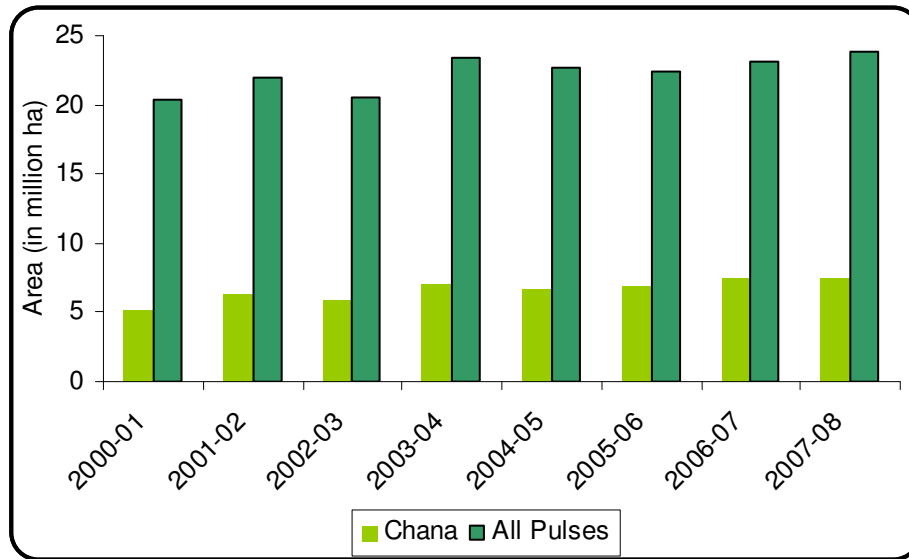
- *Cicer aritinum* L. (Desi Gram i.e., Brown Gram): Desi gram is the main type grown in India. In this group, the colour of the seed ranges from yellow to dark brown. Desi types are small-seeded varieties, which require 95 to 105 days to mature and they account for 80 to 85% of world chana production.
- *Cicer kiabulium* (Kabuli i.e., White Gram): Kabuli types are large seeded varieties, which require 100 to 110 days to reach maturity. In this group, the colour of the seed is usually white. Grains are bold and attractive. Kabulis accounts for only 10 to 15% of the global production.

The plant is 20 to 50 cm high and has small feathery leaves on both sides of the stem. Main stem is rounded and sometimes divaricates from the base. Branches are usually quadrangular, ribbed and green. One seedpod contains two or three peas. Seeds angular up to 1.0 cm in diameter, prominent beak and small hilum, colour ranging from white through red to black. The flowers are white or reddish blue. chana need a subtropical or tropical climate and more than 400 mm annual rain. They can be grown in a temperate climate, but yields will be much lower. Chana is grown in tropical, sub-tropical and temperate regions. Kabuli type is grown in temperate regions, while the desi type chana is grown in the semi-arid tropics.

Climate

Optimum growth temperature for chana is 20°C. It tolerates higher temperatures at seed set than peas and lupins. Cool and wet environment enhances the possibility of infection with foliar diseases. Frost tolerance is similar to wheat. Chana require an average annual rainfall of 375 mm for Desi type (smaller seed) and 450 mm for Kabuli type (larger seed). It is a self-pollinated crop. Cross-pollination is rare, only 0-1 %. Grown usually as a rain-fed cool-weather crop or as a dry climate crop in semi-arid regions.

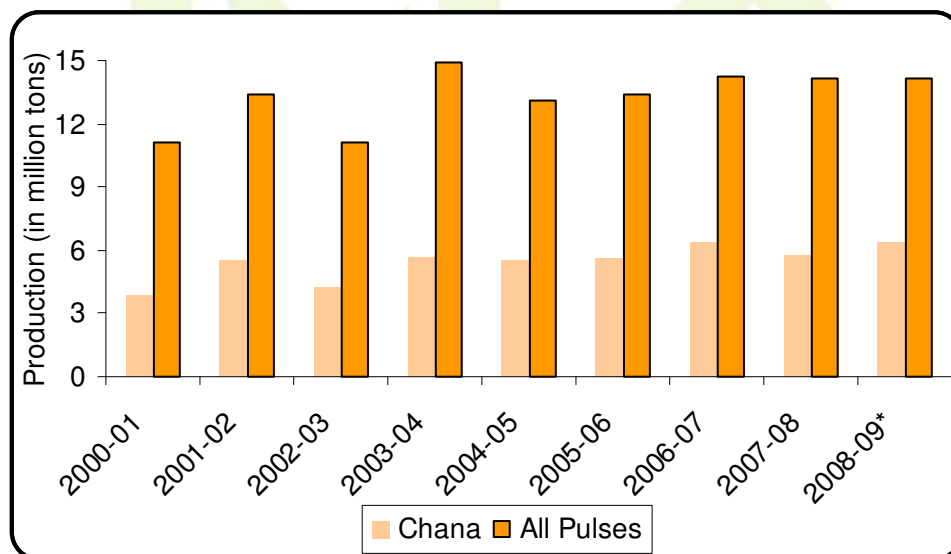
Fig.2: Area - Chana vs. All Pulses



Source: Ministry of Agriculture

Chana is cultivated at an average area of 6.6 million hectare. Recently area has shown an increasing trend on back of farmers shift in view of getting good price. Among the rabi pulses nearly two - third of the production is contributed by gram.

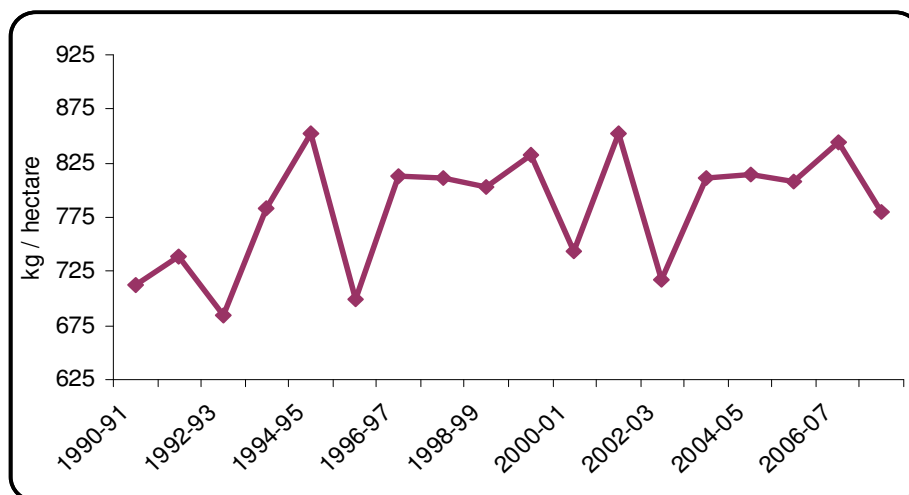
Fig.3: Production - Chana vs All Pulses



Source: Ministry of Agriculture

The production of Chana has been hovering around 5.4 million tons (average for the period from 2001-02 to 2008-09). In the recent year 2008-09, the output is estimated at 6.38 million tons. Though the production is firming up since 2004-05, it is lower than 6.8 million tons achieved during 1998-99.

Fig.4: Chana - yield trend

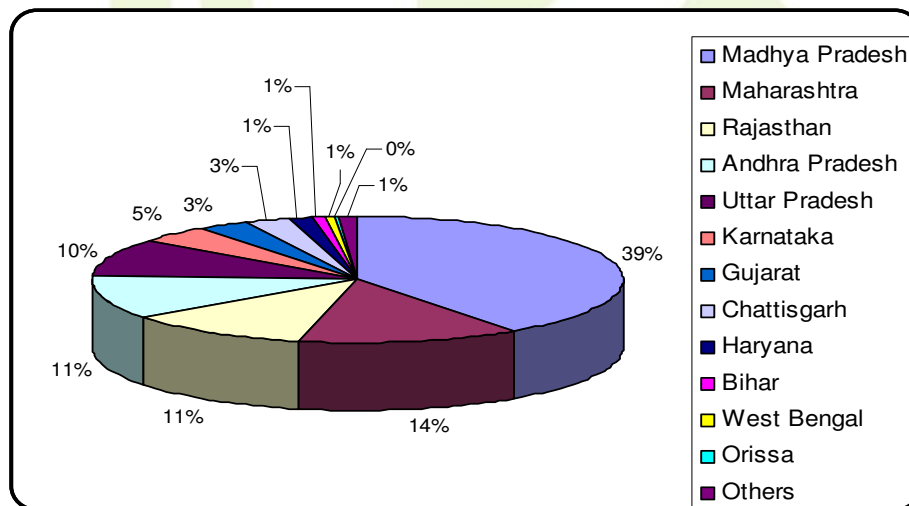


Source: Ministry of Agriculture

Indian chana yield is in the range of 700 to 850 kg per hectare from 1990-91 to 2007-08. Due to its dependence of monsoon rain, as most of the chana growing area falls under rainfed conditions, its yield fluctuates.

State wise production of chana

Fig.5: Chana average production (million tons)



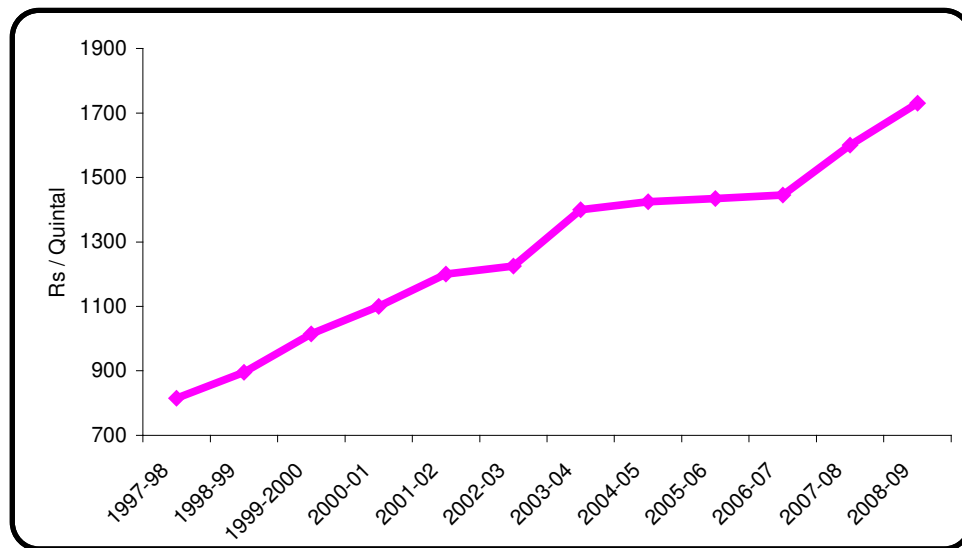
Source: Ministry of Agriculture

Note: Average chana production from 2001-02 till 2008-09 was 5.4 million tons.

Madhya Pradesh is the largest chana producing state contributes about 39% of the total chana production followed by Maharashtra (14%), Rajasthan (11%), Andhra Pradesh (11%) and Uttar Pradesh (10%).

Minimum support price

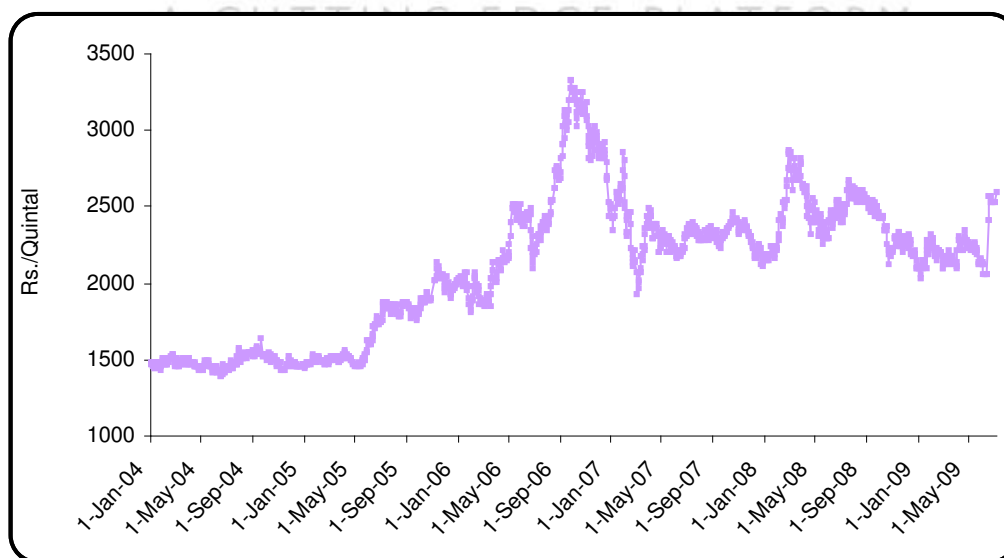
Fig.6: MSP trend



Source: Ministry of Agriculture

The Minimum Support Price (MSP) for Gram is rising continuously and ruling at Rs.1730 per quintal in the current crop year 2008-09. From the low of Rs.815 per quintal, the MSP of gram has increased to Rs.1730 per quintal in 2008-09. The main reason behind this move of Government is to encourage the farmers to enhance the output. Government has increased Rs.130 per quintal from last years MSP.

Fig.7: Chana price at Delhi market from 2004 to 2009 (up to May)



Source: Agmarknet

Major trading hubs in India

The major trading centres for chana in India are Indore, Mumbai, Delhi, Bikaner, Hyderabad, Latur, Akola, Kanpur, Chennai and Jaipur. Indore is the major market for chana, which along with Akola, Latur etc set prices for this commodity.

Market influencing factors

- Rainfall level and level of moisture in the soil
- Crop progress and output
- Obstruction in the information movement
- Supply from other countries such as Myanmar and Australia
- Prices of the other competitive pulses produced
- Black-marketing and hoarding

Import and export of chana from India

Fig.8: Chana - Import and Export



Source: Commerce Ministry

Table. 2: EXIM trade in lakh tons

EXIM	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09 (Apr-Dec)
Import	2.18	2.59	1.33	2.82	1.27	1.45	1.34
Export	0.02	0.03	0.14	0.44	0.27	0.61	1.61

Source: Commerce Ministry

Though India is the largest producer of chana, India continues to be the net importer, so as to meet out its growing domestic demand. India imports chana mainly from Myanmar, Canada, Australia, Mexico, Turkey and Iran. Normally India imports around 0.15-0.5 million tons of chana annually. Despite being the largest importer, normally India manages to export some quantity of pulses mainly to Bangladesh, Sri Lanka, UAE, USA, Nepal, Saudi Arabia and Kuwait.

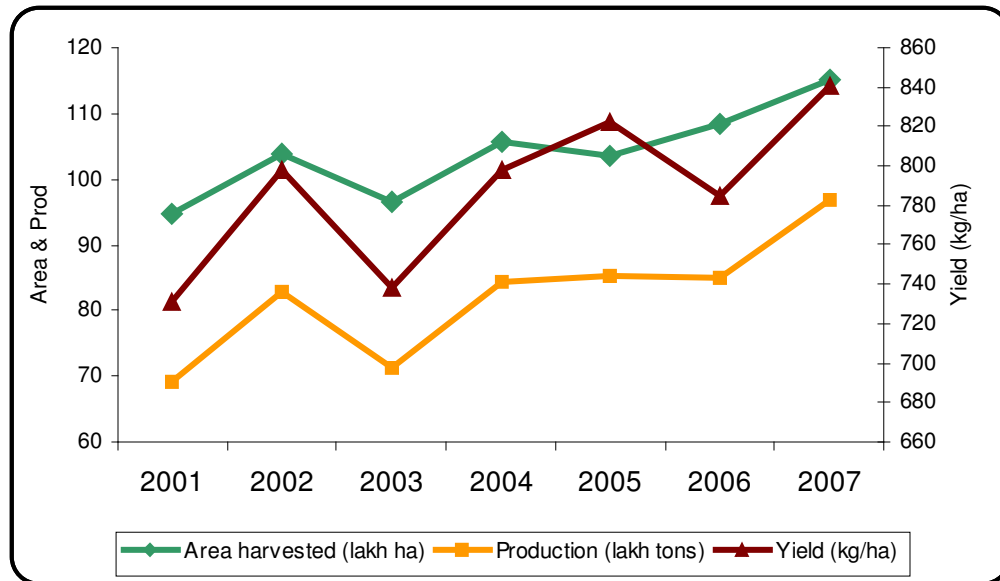


Chana - Global scenario

Global area and production for chana has been increasing year after year. The output averaged at 87.9 lakh tons (2004 to 2007) from around 108 lakh hectare areas. In 2007, chana production stood at around 97 lakh tons from the area of around 115 lakh hectares.

Area, production and yield

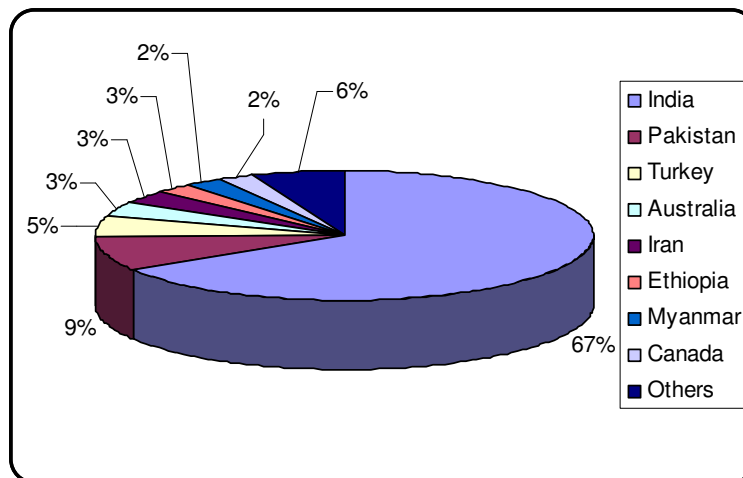
Fig.9: Chana area, production and yield



Source: FAO

The single largest producer of chana is India, which accounted for about 67% of the global production. Other larger producing countries are Pakistan, Turkey, Australia, Iran, Ethiopia and Myanmar.

Fig.10: Major chana producing countries (2007)



Source: FAO Note: Chana production in the year 2007 is 88 lakh tons.

Australian chana supply scenario

Table.3: Chana in Australia – Trend in area, production, yield and export

Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Area ('000 ha)	113	105	244	306	313	373
Yield (tons/ ha)	1.02	1.17	0.95	1.02	1.21	1.04
Production ('000 tons)	116	123	232	313	378	386
Export ('000 tons)	151	211	244	218	355	296

Source: The Australian Bureau of Agricultural and Resource Economics

Australia is one of the major suppliers of chana in the globe. The country produces an average output of about 260 thousand tons of chana per annum in the area of about 240 thousand ha per annum. The yield levels are higher in the country at about 1.1 tons per ha compared with about 0.8 in India.

In recent years, the area, production and exports of chana from Australia are rising. The country is exporting majority of its produce (about 300 thousand tons since past two years) to countries like India, as its domestic consumption very low.

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Directorate of Pulse Research

Agmarknet

Ministry of Agriculture

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Food Corporation of India