

# Guar –

## A crop fetching high income to farmers

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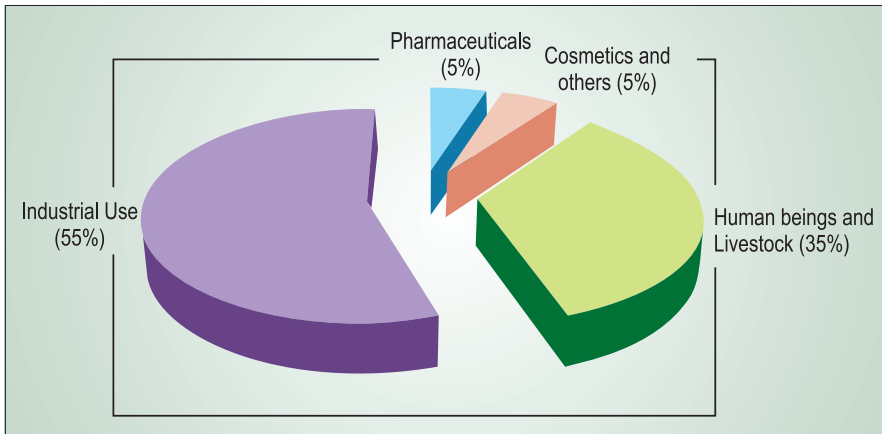
**G**UAR or cluster bean (*Cyamopsis tetragonoloba*) is a leguminous crop grown in arid regions. In India it has been cultivated since long and is mainly grown on poor fertile soils of rainfed regions. India leads the world in guar production with about 80% of global production. The endosperm of guar seed contains 35% guar gum and because of its high viscosity it is used in number of industries like textile, food, cosmetics, mining, paper and oil industry. Being a leguminous crop it fixes atmospheric nitrogen in its root nodules thus improving the soil fertility. Despite its large number of uses and benefits to soil, the crop could not achieve the desired importance in the past. However, in last two years USA and European countries started use of guar gum in oil extraction which resulted in steep hike in its demand in the international market and the prices of guar went upto a level of ₹ 30,000-35,000/q which otherwise used to be only 2,500-3,000/q. In this way guar changed the fate of

many farmers who did not sell their produce at earlier stage. Now the government has put a ban on its future trading which prohibits the transfer of high price incentives to its real beneficiaries, i.e. farmers. As a result the prices of guar have been stable to around ₹ 10,000/q for the last few months. The area under guar cultivation in major guar producing states, i.e. Haryana and Rajasthan is increasing. Under such circumstances government needs to take judicious steps to regulate the market so that the farming community may get their due share.

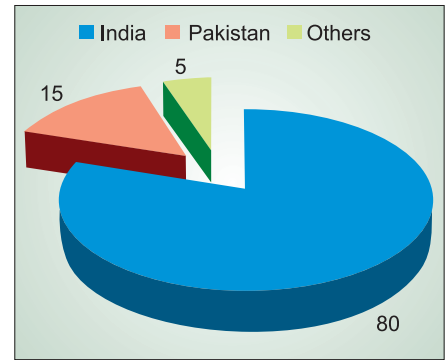
### Uses of Guar

- The endosperm of guar seed contains 35% guar gum and because of its high viscosity it is used in textile, food, cosmetics, mining, paper and oil industry.
- Condensing material/cementing material; guar gum prevents ice melting so it is used in ice-cream, ice pop, loli pop etc.
- Bakery; because of its high water holding capacity it is used in bakery. Mixing of guar gum in bakery flour avoids its drying. It induces flexibility in bread.
- Cheese preservation; guar gum avoids moisture loss and used for cheese preservation.
- Milk products; use of guar gum in curd increases solid contents and also helps in its preservation for longer period.
- *Chatni*, pickle production: being anti acidic and water absorbent guar gum is used in salad, pickle etc.
- Packed meat processing: guar gum is used in packed meat products also.
- Textile industry; de-polymerized guar gum is very useful in textile industry. It is used to tighten cotton, rayon, silk and polyester clothes.
- Paper industry; the use of guar gum is more economical than starch and cellulose gum. It is mixed in *lugdhi* prior to sheet formation. Guar gum is also used to increase thickness of paper for making calendars.
- Mining; guar gum is used as filter in mining. It is also used to prevent leakage in oil wells.

*Guar or cluster bean (Cyamopsis tetragonoloba) is a crop of arid regions. The Guar word has been derived from Sanskrit language 'Gau Aahar' means cattle feed. It is a multipurpose plant of leguminous family which may attain a height of up to 1.5 meter with bunches of pods. The pods are 5-8 cm long containing 6-9 greyish white colored seeds. Guar is a photo sensitive crop which requires approximately 25° C soil temperature for germination, long photo period and moist winds for growth, cool winds with short photo period for flowering and pod formation. Hot arid region with low rainfall (300-400 mm) are suitable for its cultivation whereas high rainfall and water logged conditions adversely affect its production. Guar seed contains 30-45 % Guar gum because of which it has got high industrial importance in recent past. Guar gum is used in a number of industries like textile, food, cosmetics, mining and oil industry.*

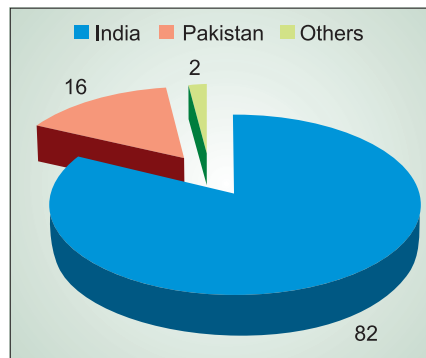


Use of guar in different sectors



Per cent of global guar production

- Oil wells; guar gum is used in oil extraction. Its use reduces loss of water, controls condensation, decreases friction and increase lubrication.
- Cosmetics; It is used in tooth paste, cream, lotion, shampoo, cleaners etc.
- Pharmaceuticals; by using as a base in medicine it increases shelf-life of medicines.
- Cattle feed; guar contains high content of protein and is a nutritious feed for cattle. The byproduct of guar gum (pericarp) which is also known as *Churi* or *korma* contains about 42% proteins and thus forms a rich base for nutritious feed for livestock. Guar meal is used in poultry.
- Vegetable; guar pods are used as green vegetable. It is rich source of Ca, P, Fe and vitamin A and C.
- Nitrogen fixation; N is a major nutrient for crop production. Being a pulse crop guar fixes 45-50 N kg/ha in soil which not only reduces the N fertilizer requirement of succeeding crop but also improves fertility. It is also used as green manure crop.



Per cent of global area under guar cultivation

#### Indian Scenario

In India guar is cultivated on an area of 30.97 lakh ha producing 15.80 lakh tonnes (2010-11). Rajasthan produces maximum guar amongst all states. In the year 2008-09 Rajasthan covered 86% of

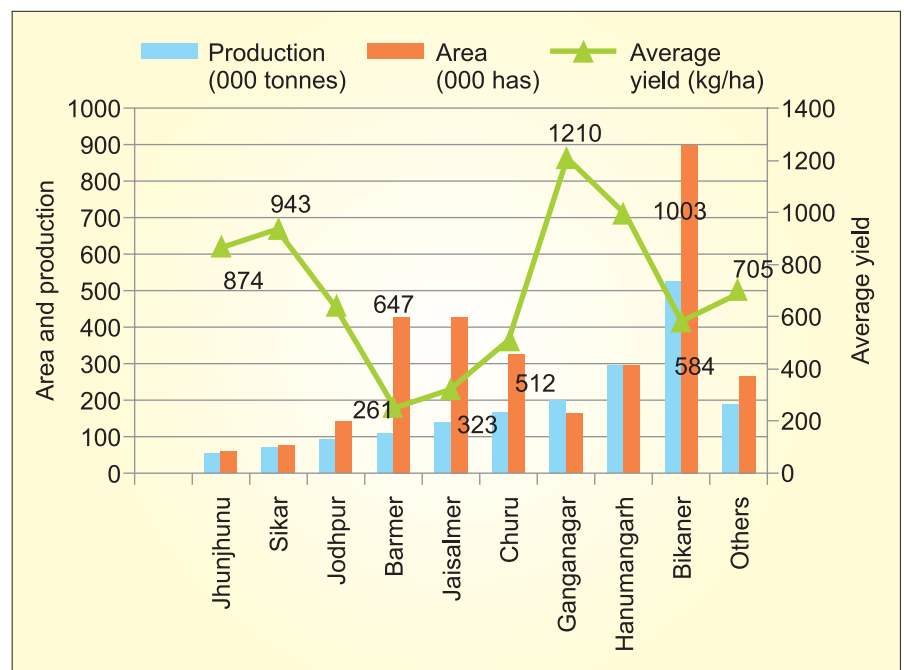
total area under guar in the country and produced 65% of national production while Haryana occupied second place producing 31% of guar in the country from just 10% of area of guar at national level. Thus the average yield of guar is higher in Haryana (912 kg/ha) than Rajasthan (597kg/ha) and all other states.

#### Rajasthan Scenario

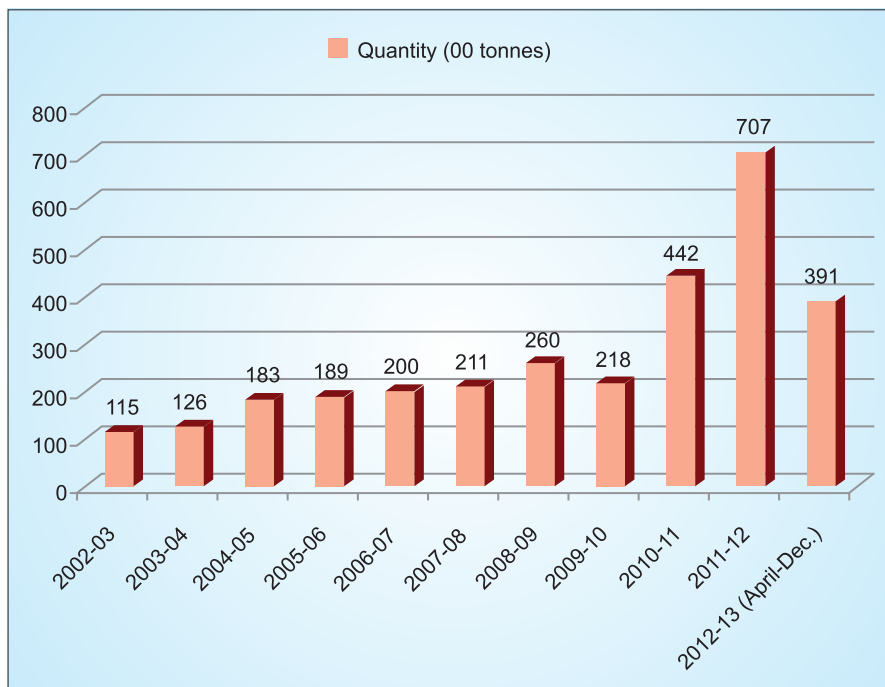
Rajasthan is the leading state in India in respect of area under guar cultivation as well as its production. In Rajasthan guar is mainly cultivated in Bikaner, Jaisalmer, Barmer, Churu, Hanumangarh, Ganganagar, Jodhpur, Sikar and Jhunjhunu districts. In year 2011-12 Rajasthan produced 30.94 lakh tonnes of guar from an area of 18.47 lakh ha area with average

#### Global Scenario

Guar is mainly cultivated in India, Pakistan, USA and Brazil. India is leading country in its area as well as production with 82 and 80% of its global area and production, respectively. Pakistan occupies second place with 16% of global area and 15% of global guar production.



Area, production and average yield of guar in Rajasthan at district level (2011-12)



Export of guar gum and products from India

approximately 47% higher than that of foreign currency earned during the year 2011-12 (₹ 16,524 crore) and 8 times more than the earnings of year 2010-11, i.e. ₹ 2,939 crore from export of 4.42 lakh tonnes of guar gum. India earned ₹ 11,052 crore (2,046.7 million dollar) through export of guar in ten years, i.e. 2002-03 to 2010-11 whereas in the year 2011-12 earnings from guar export raised to the tune of ₹ 16,524 crore (3,060 million dollar) and in the eight months (April-Dec.) of year 2012 fetched ₹ 24,275 crore (4495 million dollar). Thus guar has been one of the most important commodities fetching significant amount of foreign currency since last two years.

### SUMMARY

Guar is the first agriculture commodity registered on NCDEX. Earlier its prices used to be very low, i.e. ₹ 2,000-3,000/q. But because of its increasing industrial uses particularly in oil industry and demand in international market the prices of guar suddenly soared up to the level of ₹ 30,000/q in 2011-12 which were merely ₹ 4,000/q in 2010-11. However, an embargo on guar seed guar gum future trading for last one year has resulted in price distortion. The prevailing market prices of guar seed is around ₹ 10,000/q and frocking market in USA and Europe seems to increase so the government should immediately lift the ban on future trading of guar and its products. This will motivate the farmers for crop diversification to grow more industrial crops and therefore transfer the benefits of higher prices to the farmers in distress particularly of dry regions which will in turn give a boost to the national economy.

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yields of 597 kg/ha. District Bikaner occupies first position in area as well as production of guar, where it was cultivated on 9.01 lakh ha producing 27 lakh tonnes of guar. However, the highest average yield was recorded in Ganganagar district where 1.96 lakh tonnes guar was produced from an area of 1.62 lakh ha @ 1,210 kg/ha.

### Haryana Scenario

Guar is an important crop of kharif season for arid region of Haryana state. It is cultivated mainly in Bhiwani, Sirsa, Hisar, Mahendergarh, Fatehabad, Rewari and Gurgaon districts. In Haryana guar was cultivated in an area of 2.19 lakh in the year 2011-12. Out of which Bhiwani, Sirsa and Hisar consisted of 84,000, 58,000 and 34,000 ha, respectively. The state recorded total production of 2.0 lakh tonnes in which Sirsa, Bhiwani and Hisar districts contributed 65,000, 60,000 and 32,000 tonnes, respectively. The average yield of guar at state level was recorded as 912kg/ha which was highest in Sirsa district, i.e. 1,135 kg/ha and

lowest in Bhiwani district, i.e. 712 kg/ha. This may be attributed mainly to poor fertile soils and lack of awareness about adoption of plant protection measures in farmers of Bhiwani district as compared to farmers of Sirsa district.

### Export Scenario

Guar gum has a high industrial importance and demand in USA, China, Germany, Vietnam, Italy, Netherland and Malasiya. In the recent past USA and European countries have started use of guar gum in extracting crude oil, consequently prices and demand of guar increased many fold in domestic as well as international markets. A continuous increase is recorded in export of guar products since 2002-03 (except in year 2009-10). The export of guar gum and other products increased from 1.15 in 2002-03 to 4.42 in 2010-11 and 7.07 lakh tonne in 2011-12. In the year 2012 (April-Dec. 2012) India exported 3.91 lakh tonnes of guar products which fetched foreign currency of ₹ 24,275 crore (4,495 million dollar) which is

“The discovery of agriculture was the first big step toward a civilized life”

— Arthur Keith