***SUGAR INDUSTRY IN INDIA***

Sugar can be produced from sugarcane, sugar-beet or any other crop having sugar content. But in India, sugarcane is the main source of sugar. At present, this is the second largest agro-based industry of India after cotton textile industry.

India is the world’s largest producer of sugarcane and second largest producer of sugar after Cuba. But India becomes the largest producer if gur and khandsari are also included. This industry involves a total capital investment of Rs. 1,250 crore and provides employment to 2.86 lakh workers. In addition, 2.50 crore sugarcane growers also get benefit from this industry.

### **Growth** **and** **Development**:

India has a long tradition of manufacturing sugar. References of sugar making by the Indians are found even in the Atharva Veda. India is rightly called the homeland of sugar. But in ancient times, only gur and khandsari were made and modem sugar industry came on the Indian scene only in the middle of the 19th century, when it was introduced by the Dutch in North Bihar in about 1840.

Unfortunately, this attempt could not succeed. The first successful attempt was made by the indigo planters at the initiative of Britishers in 1903 when Vacuum pan mills were started at Pursa, Pratabpur, Barachakia and Marhowrah and Rose in north-eastern U.P. and the adjoining Bihar.

This happened when demand for indigo ceased to exist due to the introduction of synthetic blue in the market. In the early years of the 20th century, the industry grew rather sluggishly and there were only 18 mills in 1920-21 and 29 mills in 1930-31. The industry got a great fillip after the fiscal protection in 1931 and the number of mills rose to 137 in 1936-37. The production also shot up from 1.58 lakh tonnes to 9.19 lakh tonnes during the same period.

# ***State Wise Sugar Production In India***

  The table below shows the state wise sugar production in India the following states.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| States | 2016 - 2017 | 2015- 2016 | 2014- 2015 | 2013- 2014 | 2012- 2013 | 2011- 2012 | 2010- 2011 | 2009- 2010 | 2008- 2009 | 2007- 2008 |
| Andhra Pradesh | 385 | 551 | 564 | 676 | 993 | 1135 | 1006 | 515 | 593 | 1335 |
| North Bihar | 526 | 503 | 526 | 591 | 506 | 450 | 385 | 258 | 214 | 336 |
| Gujarat | 885 | 1168 | 1153 | 1175 | 1130 | 1000 | 1235 | 1189 | 1013 | 1366 |
| Haryana | 668 | 539 | 576 | 540 | 512 | 494 | 392 | 248 | 229 | 599 |
| Karnataka | 2165 | 4049 | 4935 | 4177 | 3467 | 3872 | 3683 | 2558 | 1655 | 2900 |
| Kerala & Goa | 4 | 10 | 11 | 12 | 10 | 10 | 13 | 8 | 9 | 15 |
| Madhya Pradesh & Chhattishgarh | 406 | 398 | 450 | 393 | 239 | 194 | 187 | 89 | 68 | 212 |
| Maharashtra | 4203 | 8424 | 10506 | 7712 | 7994 | 8977 | 9054 | 7067 | 4577 | 9075 |
| Punjab | 692\* | 671 | 537 | 469 | 438 | 390 | 302 | 181 | 242 | 534 |
| Rajasthan | 10 | 5 | 6 | 5 | 4 | 2 | 4 | 4 | 4 | 6 |
| Telangana | 116 | 278 | 322 | 332 | - | - | - | - | - | - |
| T.N. & Pondy. | 1067 | 1367 | 1250 | 1465 | 1959 | 2443 | 1894 | 1299 | 1614 | 2191 |
| Uttar Pradesh | 8773 | 6840 | 7101 | 6495 | 7485 | 6974 | 5887 | 5179 | 4064 | 319 |
| U.P. Cetnral | 3428 | 2626 | 2669 | 2284 | 2744 | 2619 | 2123 | 1820 | 1373 | 2473 |
| U.P. East | 2625 | 2231 | 2314 | 2320 | 2599 | 2514 | 1981 | 1574 | 1291 | 2414 |
| U.P. West | 2720 | 1983 | 2118 | 1891 | 2142 | 1841 | 1783 | 1781 | 1400 | 2432 |
| Uttarakhand | 346 | 273 | 325 | 287 | 337 | 331 | 302 | 292 | 223 | 400 |
| Others - Assam, Orissa, Nagaland & West Bengal | 39 | 49 | 48 | 67 | 66 | 70 | 50 | 25 | 33 | 68 |
| All India | 20285 | 25125 | 28310 | 24396 | 25140 |  |  |  |  |  |

***SUGAR INDUSTRY IN INDIA***

#### **Maharashtra**:

Maharashtra has progressed a lot and captured first position from U.P. to emerge as the largest producer of sugar in India. Large production of sugarcane, higher rate of recovery and longer crushing period are some of the factors which have helped the state to occupy this enviable position.

The state has one-fourth of the total sugar mills and produces a little more than one-third of the total sugar of India. Sugar mills of Maharashtra are much larger as compared to the mills in other parts of the country. The major concentration of sugar mills is found in the river valleys in the western part of the Maharashtra Plateau. Ahmednagar is the largest centre. The other major centres are in the districts of Kolhapur, Solapur, Satara, Pune and Nashik.

Pune: India's 2018-19 [**sugar production**](https://m.economictimes.com/topic/sugar-production) likely to be up by 1.5 per cent over previous year, says industry body Indian [**Sugar Mills**](https://m.economictimes.com/topic/Sugar-Mills) Association ([**ISMA**](https://m.economictimes.com/topic/ISMA)). Sugar mills across the country have produced 321.19 lakh tonnes of sugar between 1st October 2018 and 30th April 2019. This is about 9.36 lac tons more than 311.83 lac tons produced at the same time last year.

 "However, as compared to 110 sugar mills which were still crushing sugarcane on 30th April 2018 last year, only 100 sugar mills are crushing sugarcane on 30th April 2019 this year," an ISMA release said.

With lesser number of sugar mills working as of now, sugar production in the balance part of the current season will be much less than what was produced from 1st May 2018 to 30th September 2018 last year.

 The sugar recovery in Northern India has been substantially better than the sugar recovery achieved in the last season. In the other parts of the country, including Maharashtra and Karnataka also, the sugar recovery is better than last year, though not as high as achieved in North India. Therefore, even though the quantum of sugarcane crushing in the current season is less than that in the last season, the sugar production in 2018-19 will be marginally more than last year.

Therefore, the sugar production in the current year for the whole country is expected to be around 330 lakh tonnes about 5 lakh tonnes more than last year.

 The pace of sugar production in the last 15-20 days has slowed down, with large number of sugar mills shutting their crushing operations faster than what was seen in the last season.

#### Maharashtra’s sugar production has reached 107 lakh tonnes upto 30th April 2019 and all the mills except one have ended their operations for the season..

#### **Uttar** **Pradesh**:

Uttar Pradesh is the traditional producer of sugar and has been occupying the first rank among the major sugar producing states of India. However, its relative importance has been reduced during the last few years and the state has conceded the top position to Maharashtra and now occupies the second position. Uttar Pradesh has more mills than Maharashtra but they are of comparatively smaller size and yield less production.

Presently, the state accounts for about 24 per cent of the total production of sugar in India. There are two distinct regions of sugar production in this state. One region consists of Gorakhpur, Deoria, Basti and Gonda in eastern Uttar Pradesh and the other lies in the upper Ganga Plain consisting of Meerut, Saharanpur, Muzaffamagar, Bijnore and Moradabad.

 UP sugar mills have produced 112.65 lakh tonnes of sugar as on 30th April 2019, which is 0.27 lac tons higher than the production achieved by them last year on the corresponding date. Out of 119 mills operated this year, 51 mills have ended their crushing, and 68 mills continue their operations now.

***Karnataka:***

Karnataka has 30 mills producing 1,151 thousand tonnes or over 6 per cent of the total sugar of India. Belgaum and Mandya districts have the highest concentration of sugar mills. Bijapur, Bellary, Shimoga and Chittradurga are the other districts where sugar mills are scattered.

#### All sugar mills in Karnataka have ended their crushing for the season 2018-19 SS and they have produced 43.20 lakh tonnes of sugar till 30th April 2019.

#### **Tamil** **Nadu**:

Tamil Nadu has shown phenomenal progress with regard to sugar production during the last few years. High yield per hectare of sugarcane, higher sucrose content, high recovery rate and long crushing season have enabled Tamil Nadu to obtain highest yield of 9.53 tonnes of sugar per hectare in the whole of India.

As a result of these advantages, the state has emerged as the third largest producer of sugar, contributing over nine per cent of the total sugar production of India. Most of the 32 mills of the state are located in Coimbatore, North Arcot Ambedkar, South Arcot Vallalur and Tiruchchirapalli.

#### **Andhra** **Pradesh**:

Andhra Pradesh has more mills (35) than the neighbouring Karnataka but produces only 6.01 per cent of India’s sugar. This means that the mills are comparatively smaller. Majority of the sugar mills are concentrated in East and West Godavari, Krishna, Vishakhapatnam, Nizamabad, Medak and Chittoor districts.

#### **Gujarat**:

Gujarat’s 16 mills are scattered in Surat, Bhavnagar, Amreli, Banaskantha, Junagarh, Rajkot and Jamnagar districts. The state produces about 5.56 per cent of the total sugar produced in India.

#### **Haryana**:

Haryana has only 8 mills but their large size enables the state to contribute 1.91 per cent of the total sugar production. Sugar mills are located in Rohtak, Ambala, Panipat, Sonipat, Kamal, Faridabad and Hissar districts.

#### **Punjab**:

Punjab has a total of 13 mills which are located in Amritsar, Jalandhar, Gurdaspur, Sangrur, Patiala and Rupnagar districts.

#### **Bihar**:

Bihar was the second largest sugar producing state next only to Uttar Pradesh till mid- 1960s. Since then the state has been experiencing sluggish growth and consequently lost its prestigious position to the peninsular states like Maharashtra, Tamil Nadu, Karnataka and Andhra Pradesh.

Its 28 mills make an insignificant contribution to the production of sugar. The belt of eastern Uttar Pradesh extends further east in Bihar and the districts of Darbhanga, Saran, Champaran and Muzaffarpur are included in this belt.

Sugar mills in Gujarat, Tamil Nadu, Andhra Pradesh & Telangana and Madhya Pradesh & Chhatisgarh have produced 11.19 lakh tonnes, 7.05 lac tons, 7.60 lakh tonnes and 5.30 lakh tonnes respectively. Similarly, sugar mills of Bihar, Punjab and Haryana have also produced 8.35 lac tons, 7.70 lac tons and 6.75 lac tons as on 30th April 2019.

#### **Others**:

Among the other producers are Madhya Pradesh (8 mills in Morena, Gwalior and Shivpuri districts), Rajasthan (5 mills in Ganganagar, Udaipur, Chittaurgarh and Bundi districts), Kerala, Orissa, West Bengal and Assam.

 Considering the opening balance of 107 lakh tonnes on 1st October 2018, estimated production of 330 lakh tonnes and domestic consumption of 260 lac tons as well as exports of 30 lakh tonnes of estimated sugar exports, sugar stocks at the end of the current 2018-19 SS i.e., 30thSeptember 2019, are expected to be at a higher level of around 147 lakh tonnes.

 The field reports from Maharashtra suggest that sugarcane planting in most of the regions in Maharashtra for harvesting in next 2019-20 season is significantly lower than the sugarcane harvested in the current season.

 Additionally due to substantially lower rainfall during last season’s [**monsoon**](https://m.economictimes.com/topic/monsoon) (June to September 2018) as also during the retreating monsoon i.e. North East Monsoon (October to December 2018), water in most of the reservoirs in Maharashtra is much below normal levels, which remained so, for most of the last 7 to 8 months. Therefore, the indications are that the acreage under sugarcane in Maharashtra for next year’s harvesting will be significantly lower than the current season.

 Therefore, at an all India level there is a general expectation that the sugarcane availability will be much lower in 2019-20 than what has been in the current season, thereby reducing sugar production next year.

 Further, with additional ethanol production capacities getting installed and expanding existing capacities at a very fast pace, the sugar industry will be better placed to divert larger quantities of ‘B’ heavy molasses/sugarcane juice, away from sugar into ethanol in the last season. That, in turn will further reduce sugar production in the next season.

 ISMA will obtain satellite images of the sugarcane area across the country in latter part of June 2019 to make its preliminary estimates of sugarcane availability and sugar production for 2019-20 sugar season.

### **Difference between the Sugar Industry of Northern and Peninsular India:**

There are marked differences between the sugar industry of the northern and the peninsular India. As a result of better conditions prevailing in the peninsular India, the sugar industry is gradually shifting from north India to the peninsular India.

This is evident from the fact that previously north India used to produce about 90 per cent of India’s sugar which is reduced to 35-40 per cent now. A brief description of differences between the sugar industry of the northern and peninsular India is given below:

1. Peninsular India has tropical climate which gives higher yield per unit area as compared to north India.

2. The sucrose content is also higher in tropical variety of sugarcane in the south.

3. The crushing season is also much longer in the south than in the north. For example, crushing season is of nearly four months only in the north from November to February, whereas it is of nearly 7-8 months in the south where it starts in October and continues till May and June.

4. The co-operative sugar mills are better managed in the south than in the north.

5. Most of the mills in the south are new which are equipped with modern machinery.

### ***Problems of Sugar Industry:***

Sugar industry in India is plagued with several serious and complicated problems which call for immediate attention and rational solutions. Some of the burning problems are briefly described as under:

#### 1. Low Yield of Sugarcane:

Although India has the largest area under sugarcane cultivation, the yield per hectare is extremely low as compared to some of the major sugarcane producing countries of the world. For example, India’s yield is only 64.5 tonnes/hectare as compared to 90 tonnes in Java and 121 tonnes in Hawaii.

This leads to low overall production and results in short supply of sugarcane to sugar mills. Efforts are being made to solve this problem through the introduction of high yielding, early maturing, frost resistant and high sucrose content varieties of sugarcane as well as by controlling diseases and pests which are harmful for sugarcane.

#### 2. Short crushing season:

Manufacturing of sugar is a seasonal phenomena with a short crushing season varying normally from 4 to 7 months in a year. The mills and its workers remain idle during the remaining period of the year, thus creating financial problems for the industry as a whole. One possible method to increase the crushing season is to sow and harvest sugarcane at proper intervals in different areas adjoining the sugar mill. This will increase the duration of supply of sugarcane to sugar mills.

#### 3. Fluctuating Production Trends:

Sugarcane has to compete with several other food and cash crops like cotton, oil seeds, rice, etc. Consequently, the land available to sugarcane cultivation is not the same and the total production of sugarcane fluctuates. This affects the supply of sugarcane to the mills and the production of sugar also varies from year to year.

#### 4. Low rate of recovery:

It is clear from Table 27.29 that the average rate of recovery in India is less than ten per cent which is quite low as compared to other major sugar producing countries. For example recovery rate is as high as 14-16 per cent in Java, Hawaii and Australia.

#### 5. High cost of Production:

High cost of sugarcane, inefficient technology, uneconomic process of production and heavy excise duty result in high cost of manufacturing. The production cost of sugar in India is one of the highest in the world. Intense research is required to increase the sugarcane production in the agricultural field and to introduce new technology of production efficiency in the sugar mills. Production cost can also be reduced through proper utilisation of by- products of the industry.

For example, bagasse can be used for manufacturing paper pulp, insulating board, plastic, carbon cortex etc. Molasses comprise another important by-product which can be gainfully used for the manufacture of power alcohol.

This, in its turn, is useful in manufacturing DDT, acetate rayon, polythene, synthetic rubber, plastics, toilet preparations, etc. It can also be utilised for conversion into edible molasses and cattle feed. Press-mud can be used for extracting wax.

#### 6. Small and uneconomic size of mills:

Most of the sugar mills in India are of small size with a capacity of 1,000 to 1,500 tonnes per day. This makes large scale production uneconomic. Many of the mills are economically not viable.

#### 7. Old and obsolete machinery:

Most of the machinery used in Indian sugar mills, particularly those of Uttar Pradesh and Bihar is old and obsolete, being 50-60 years old and needs rehabilitation. But low margin of profit prevents several mill owners from replacing the old machinery by the new one.

#### 8. Competition with Khandsari and Gur:

Khandsari and gur have been manufactured in rural India much before the advent of sugar industry in the organised sector. Since khandsari industry is free from excise duty, it can offer higher prices of cane to the cane growers.

Further, cane growers themselves use cane for manufacturing gur and save on labour cost which is not possible in sugar industry. It is estimated that about 60 per cent of the cane grown in India is used for making khandsari and gur and the organised sugar industry is deprived of sufficient supply of this basic raw material.

#### 9. Regional imbalances in distribution:

Over half of sugar mills are located in Maharashtra and Uttar Pradesh and about 60 per cent of the production comes from these two states. On the other hand, there are several states in the north-east, Jammu and Kashmir and Orissa where there is no appreciable growth of this industry. This leads to regional imbalances which have their own implications.

#### 10. Low per capita consumption:

The per capita annual consumption of sugar in India is only 16.3 kg as against 48.8 kg in the USA., 53.6 kg in U.K., 57.1 kg in Australia and 78.2 kg in Cuba and the world average of about 21,1 kg. This result in low market demand and creates problems of sale of sugar.