

EXPORT PATTERN OF CEREALS IN INDIA

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Abstract

Excellent environments for the export of cereals exist in India due to high demand for cereals in the global market. India being the second largest producer of cereals in the world and in 2017-18 we witnessed a record production of all major crops like Rice (112.91MT), wheat (99.70 MT) etc. Under such circumstances this paper tries to explore different cereal crops produced in India as well as the export pattern of various cereals from India and their percentage share in total cereal exports for a period of ten years from 2008-09 to 2017-18.

Keywords: Cereals, Export Pattern, Crops, Rice

1.

Introduction

The cereals are angiosperms, monocots and are members of the grass family known as Gramineae. They are basically grain crops, and commonly called as cereals or grains. These grass crops are mainly produced for gathering grown-up grains that are used as main foods or animal feeds. There are various products processed from cereal crops like starch, malt, bio fuel(alcohol) and sweetener (high fructose corn syrup). The important types of cereal crops produced in India are Rice, Wheat, Maize and Coarse cereals include Rye, Barley, Oats, Jowar, Bajra, Ragi, etc. There was a ban on exports of cereals like rice and wheat during 2008 because of the increasing domestic needs of the country. Later due to country's surplus production and huge global demand the ban was lifted and export of cereals was allowed to a limited extent. Besides being second largest producer of cereals, India is also the largest exporter of the cereals products in the world.

Cereal Crops Produced in India

➤ Rice

One of the most important cereal crop produced in India is rice. Rice is basically divided in to two, Basmati Rice and Non-Basmati Rice. Basmati Rice is a long grain rice variety and is cultivated in the Himalayan region of India. The main characteristics of basmati rice include aromatic and extra- long slender grain. It will elongate at least twice of original size and become soft and fluffy while cooking. Basmati Rice is

different from other long- grain variety of rice. The features of Basmati rice depend upon different factors like, agro- climatic conditions of a particular geographic area, method of harvesting, processing and aging. According to Seeds Act 1966, 29 varieties of Basmati rice have been identified so far. The major areas of cultivation of basmati rice in India are states of Jammu& Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Uttarakhand, and western Uttar Pradesh. India is the leading exporter of Basmati rice in the global market and our major exporting destinations are Iran, Saudi Arabia, United Arab Emirates, Iraq and Kuwait. Any other varieties of rice other than Basmati rice are included in Non- Basmati rice category. There are about 10,000 varieties of rice in the world and out of which a large number of varieties can be found in India. Major export destinations of non-basmati rice include Bangladesh Pr, Benin, Senegal, Nepal and Sri Lanka Dsr.

➤ **Maize**

Among cereals, Maize is considered as the queen of cereals among worldwide. It is one of the most flexible crops as it is adjustable to various agro-climatic conditions. Maize is cultivated in almost 165 countries that have huge difference in soil, climate, biodiversity and management practices. The largest producer of Maize in the world is United States of America that contributes approximately 36% of total production. Total production of maize contributes to 39% of total grain production in the world. Maize is a Khariff crop which is grown throughout the year in India. After rice and wheat, maize is the third most important crop in India that contributes 10% to total food grain production in the country. It is used as an important raw material for many products like, starch, oil, protein, alcoholic beverages, food sweeteners, pharmaceutical, cosmetic, film, textile, gum, package, paper industries etc. Major areas of cultivation in India are Karnataka, Madhya Pradesh, Bihar, Tamil Nadu, Telangana, Maharashtra and Andhra Pradesh. Major export destinations of Maize are Nepal, Bangladesh, Philippines, Myanmar and Sri Lanka.

➤ **Other Cereals**

Many short duration warm weather (Kharif) crops like Jowar (Sorghum), Bajra (Pearl Millet), Ragi (Finger Millet) etc come under the title of Coarse cereals. They are used in food, animal feed, fuel; value added products and fast food products. These crops are also known as dry land crops because it can be grown in high temperature areas that is area with 50-100cm rainfall. In India these crops are grown mainly in rain fed areas. Coarse cereals are less sensitive to deficiencies of soil and therefore it can be grown in inferior alluvial or loamy soil. The individual crops come under this category include, Rye, Barley, Oats, Other Maize, Grain Sorghum, Jowar, Buck wheat, Bajra, Ragi and Canaryseed. Major export destinations of these cereals are Pakistan, Kenya, United Arab Emirates, Saudi Arabia and Nepal.

2. Methods And Materials

In this paper an examination of the yearly export of cereals from 2008-09 to 2017-18 is undertaken and the pattern of export of cereal from India is analysed. The percentage method is used to find out the share of each cereal in the total export of cereals in India.

$$\text{Percentage share of export of a cereal} = \frac{\text{Total amount of a cereal exported}}{\text{Total export of cereals in India}} \times 100$$

R² value is calculated for the share of total export of cereals in India's total export using Excel 2007.

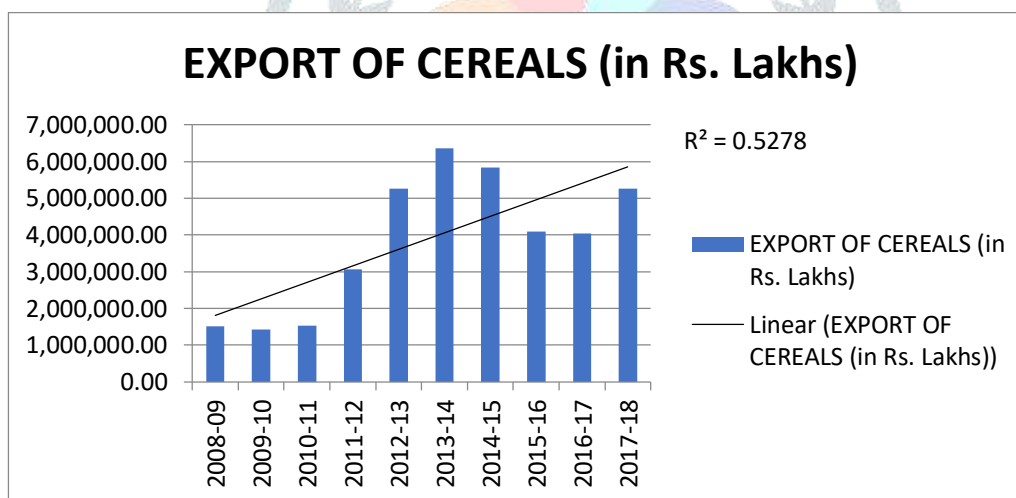
3. Discussion

In this study it can be seen that the share of total cereal export in India for the period 2008-09 to 2017-18 is between 1% and 4% of the total export of India. This may be due to both external and domestic factors that affect the performance of the agricultural sector like decreasing size of agricultural land, dependence on monsoon, inadequate assess to irrigation, uneven access to modern technology, failure to provide remunerative prices to farmers etc..

Cereals share in India's total export

The share of export of cereals in India's total export is shown in the table below.

Chart 1: The Share of Cereals in India's Total Export



In this graph share of cereals in India's total export is shown. In this graph linear trend line is also included. The R² value is computed for this data and it is quite well known that the value of R² ranges between 0 and 1. If the value is 1, it represents that the data fits perfectly with the line draw through them and if the value is 0 then it means there is no statistical correlation between the data and the graph. In this data the R² value is found to be 0.527 which means there is some statistical correlation between the data and the linear trend line in the graph. The share of export of cereals in India's total export shows a decreasing trend from 1.79% in 2008-09 to 1.34% in 2010-11. In the next three years it shows an increasing trend and reached at 3.34% in 2013-14. In the next three years again the share declined and reached 2.17%. In 2017-18 it increased to 2.69%. The share of cereals in India's export was highest during 2013-14 (3.34%) and was lowest during 2010-11 (1.34%).

Export Growth Rate of Cereals in India

In this study the cereals considered are, Wheat and Meslin, Rye, Barley, Oats, Maize, Rice, Grain Sorghum, Buckwheat, Millet, Canaryseed and Other Cereals. The table below shows the amount of cereals exported by India for the period 2008-09 to 2017-18.

Table 2: Growth Rate of Total Cereal Export in India.

Year	Total amount of export of cereals(In Rs. Lakhs)	Growth Rate
2008-09	1,508,643.81	2.23
2009-10	1,422,814.69	-5.69
2010-11	1,523,510.65	7.08
2011-12	3,062,491.43	101.02
2012-13	5,256,781.17	71.65
2013-14	6,354,285.04	20.88
2014-15	5,828,221.99	-8.28
2015-16	4,096,626.70	-29.71
2016-17	4,031,650.65	-1.59
2017-18	5,253,712.36	30.31

In the above table the growth rate of export of cereals is shown for 10 years from 2008-09 to 2017-18. The growth rate of cereal export revealed a mixed trend. During 2008-09 the growth rate is 2.23% and in 2017-18 it is at the rate 30.31%. In 2011-12 the growth rate reached its highest at 101.02%. On the other hand the growth rate reached the lower level in the year 2015-16 which is -29.71%.

Export Pattern of Cereals

The export pattern of cereals is examined by dividing them into eight broad categories. They are wheat and meslin, rye, barley, oats, maize (corn), rice, grain(sorghum), buckwheat, millet and canary seed; other cereals. The share of each cereal in India's total export of cereals for the period 2008-09 to 2017-18 is explained in this section

Table 3: The Share of Wheat and Meslin Total Cereal Export of India

Year	Total Amount Exported(In Rs. Lakhs)	% Share
2008-09	145.73	0.01
2009-10	5.50	0.0003
2010-11	69.96	0.005
2011-12	102,326.85	0.003
2012-13	1,052,900.19	20.03
2013-14	927,765.04	14.60
2014-15	499,180.52	8.56
2015-16	106,177.28	2.59
2016-17	44,785.02	1.11

2017-18	62,437.16	1.19
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The share of wheat and meslin shows an increasing trend from 2009-10 to 2012-13. The share was highest during 2012-13 which is 20.03% and the share was low during 2009-10 which is 0.0003%. From 2013-14 the share starts to decrease and reached 1.11% in 2016-17. The share of wheat shows a declining trend in this study especially after 2012-13. This may be due to fall in global commodity prices including wheat which had direct effect on the export of the same.

Table 4: The Share of Rye in Total Cereal Export of India

Year	Total amount exported(in Rs. lakhs)	% share
2008-09	690.44	0.05
2009-10	1.74	0.0001
2010-11	0.33	0.00002
2011-12	2.84	0.0001
2012-13	68.27	0.001
2013-14	5.96	0.0001
2014-15	129.55	0.002
2015-16	0.23	0.00001
2016-17	2.41	0.0001
2017-18	5.40	0.0001

The share of rye is very low in the total cereal export of India. The range of share is between 0% and 1%. The share was highest during 2008-09 which is 0.05% and was low during 2015-16 which is 0.00001%.

Table 5: The Share of Barley in Total Cereal Export of India

Year	Total Amount Exported(In Rs. Lakhs)	% Share
2008-09	21,375.66	1.42
2009-10	5,685.70	0.39
2010-11	1,254.58	0.08
2011-12	6,407.60	0.21
2012-13	43,695.26	0.83
2013-14	70,981.79	1.12
2014-15	68,182.88	1.17
2015-16	12,139.24	0.29
2016-17	384.39	0.01
2017-18	254.63	0.005

From 2008-09 to 2010-11 the share of barley is showing a decreasing trend. From 2011-12 to 2014-15, the share of barley increased and reached 1.17%. In the last three years again the share has decreased and reached 0.005% in 2017-18. The share was highest during 2008-09 which is 1.42% and was low during 2017-18 which is 0.005%.

Table 6: The Share of Oats in Total Cereal Export of India

Year	Total Amount Exported(In Rs. Lakhs)	% Share
2008-09	255.05	0.02
2009-10	2.15	0.0002
2010-11	4.85	0.0003
2011-12	16.91	0.0005
2012-13	236.57	0.005
2013-14	22.58	0.0004
2014-15	36.40	0.0006
2015-16	25.86	0.0006
2016-17	87.74	0.002
2017-18	103.04	0.002

The share of oats in total cereal export is ranging between 0% and 1%. The share increased from 2009-10(0.0002%) to 2012-13 and reached 0.005 %.The share of oats was highest during 2008-09 which is 0.02% and was low in the year 2009-10(0.0002%).

Table 7: The Share of Maize (corn) in Total Cereal Export of India

Year	Total amount exported(in rs. lakhs)	% share
2008-09	337,499.24	22.37
2009-10	255,386.78	17.94
2010-11	335,946.44	22.05
2011-12	515,751.49	16.84
2012-13	709,634.14	13.49
2013-14	601,924.50	9.47
2014-15	403,786.10	6.93
2015-16	116,201.04	2.84
2016-17	103,013.40	2.56
2017-18	123,058.51	2.34

The share of maize shows a mixed trend from 2008-09 to 2010-11. From 2011-12 it steadily decreased from 16.84% and reached 2.34% in 2017-18. This may be due to fall in production of maize which cause increase in domestic prices and at the same time the fall in international prices. The share of maize was highest during 2008-09 which is 22.37% and was low during 2017-18 which is 2.34%.A sharp fall in global prices in 2014-15 and following fall in the external demand have lowered local prices well below the government-set minimum support prices. Also after a year there was sharp fall in maize production in India which cause increase in price above international markets. All these may be the reasons for the decrease in share of maize in total cereal export of India from 2014-15 to 2017-18.

Table 8: The Share of Rice in Total Cereal Export of India

Year	Total Amount Exported(In Rs. Lakhs)	% Share
2008-09	1,116,440.39	74
2009-10	1,125,490.07	79.10
2010-11	1,158,592.19	76.05
2011-12	2,410,872.23	78.72
2012-13	3,385,819.53	64.41
2013-14	4,708,703.26	74.10
2014-15	4,802,825.48	82.41
2015-16	3,820,199.35	93.25
2016-17	3,844,278.65	95.35
2017-18	5,030,790.13	95.75

India has a superior role in global rice export trade regardless of the ban in exports between October 2007 and September 2011 due to high volume of production and price advantages of India over other countries. It may be the major reasons for the rice to have a highest share in the total cereal export of India. The share of rice is higher in total cereal export of India compared to other cereals in all the years and its share was higher during 2017-18 which is 95.75% and was low during 2012-13 which is 64.41%. From 2013-14 onwards the share of rice is continuously increasing up to 2017-18.

Table 9: The Share of Grain Sorghum in Total Cereal Export of India

Year	Total amount exported(in Rs. lakhs)	% share
2008-09	10,934.89	0.72
2009-10	10,892.22	0.77
2010-11	12,588.44	0.83
2011-12	8,532.71	0.28
2012-13	43,052.80	0.82
2013-14	20,885.74	0.33
2014-15	29,858.14	0.51
2015-16	16,332.14	0.39
2016-17	15,941.47	0.39
2017-18	12,961.46	0.25

The share of grain is between 0% and 1%. Highest share was in 2010-11, which is 0.83% and lowest share was in 2017-18 which is 0.25%. The share was constant for two years at 0.39% in the year 2015-16 and 2016-17.

Table 10: The Share of Buckwheat, Millet and Canary Seed; other Cereals in Total Cereal Export of India.

Year	Total amount exported(in Rs. lakhs)	% share
2008-09	21,302.42	1.41
2009-10	15,053.87	0.98
2010-11	15,053.87	0.98
2011-12	18,580.79	0.61
2012-13	21,374.42	0.41
2013-14	23,996.18	0.38
2014-15	24,222.94	0.42
2015-16	25,551.57	0.62
2016-17	23,157.57	0.57
2017-18	24,102.03	0.46

From 2008-09 to 2013-14 the share is declining continuously. The share was highest during 2008-09 which is 1.41% and it was low during 2013-14 which is 0.38%.. Also the share was constant for two years at 0.98% during 2009-10 and 2010-11.

Conclusions

This paper analyses the export pattern of cereals in India for the time period 2008-09 to 2017-18. The results revealed that there is no continuous increase in growth rate or uniform trend in the export of cereals and the export pattern clearly revealed a mixed trend. Among the cereals examined, Rice has the greatest share in the export of cereals followed by Maize (corn) and Wheat. Other cereals including oats, grain sorghum, buckwheat, millet, rye and barley have share which is less than 1% in the total export of cereals in India.

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