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MAIZE PRODUCTION IN INDIA: FIGHTING HUNGER AND MALNUTRITION

Apart from its high nutritional value, maize also plays a key role in the poultry and animal feeds industry. Its other attraction to farmers is that it is more drought resistant than traditional Indian cereals and has higher yields.



Maize is one of the most important cereals of the world and provides more human food than

any other cereal. Maize is of American origin, having been domesticated about 7000 years ago. It provides nutrients for humans and animals, and serves as a basic raw material

for the production of starch, oil and protein, alcoholic beverages, food sweeteners and, more recently, fuel. Maize is high yielding, easy to process, readily digested, and costs less than other cereals. It is also a versatile crop that can be grown across a range of agro ecological zones.

Every part of the maize plant has economic value: the grain, leaves, stalk, tassel, and cob can all be used to produce a large variety of food and non-food products. The corn grown is of three main types—grain or field corn, sweet corn that is used mainly as food and popcorn. There are four types of Grain corn: (1) Dent corn, which has a pronounced depression or dent at the crown of the kernels, (2) Flint corn has the hard starch layer entirely surrounding the outer part of the kernel, (3) Flour or soft corn, which is almost entirely soft starch, with only a very thin layer of hard starch, and (4) Waxy corn, which has a wax-like endosperm. Popcorn has a very high proportion of hard starch. When heated, the moisture in the kernel expands rapidly, resulting in an explosive rupture of the epidermis. The size of the kernel increases 15 to 35 times, after popping. Maize in India is an important cereal, and both the area under cultivation

and production levels have steadily increased during the past two decades. In India, it is mainly used for poultry feed.

In India, the major maize areas are Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Promotional activities

To meet the growing demand, per hectare yield of maize is estimated to rise to 2.36 tonnes as against 1.7 tonnes currently, by the end of 2020. Maize possesses tremendous potential in terms of feed for the dairy, poultry and pig-gery industries. In order to increase the production and productivity of maize, the government is promoting area expansion for maize in view of serious competition from other food and cereal crops. The programme envisages transferring improved technology, demonstrations of improved crop production technology and Integrated Pest Management training programmes. There are also plans for maize seed production programmes, and the supply of insecticides, pesticides, weedicides and other inputs.

According to the brokerage firm, Karvy Comtrade, "Production in 2010-11 is expected to touch 20 million tonnes on a higher acreage and with improved yields." India's maize production had declined to 16.8 million tonnes in the 2009-10 crop year (July-June), from 19.73 million tonnes in the previous year on account of a drought that hit almost half of the country. However, Karvy noted that the price of maize is unlikely to come down as a result of strong demand and limited sup-

Country	2010-11		2011-12	
	Area ('000 Ha)	Production ('000 MT)	Area ('000 Ha)	Production ('000 MT)
US	32,960	316,165	34,151	317,440
China	32,450	173,000	33,000	178,000
EU27	7998	55,902	8731	61,043
Brazil	13,800	57,500	14,500	61,000
Mexico	7000	20,600	7050	24,000
Argentina	3200	22,000	3600	27,500
India	8550	21,280	8500	21,000
World	163,060	823,965	168,408	854,674

Source: US Department of Agriculture, Maize Monthly Report, October 8, 2011-12

	2010-11	2011-12 (estimated)	YOY change (per cent)
Andhra Pradesh	1.2	1.13	-6
Bihar	0.48	0.6	25
Karnataka	3.36	3.24	-4
Madhya Pradesh	1.46	1.21	-17
Maharashtra	2.12	1.51	-29
Rajasthan	1.91	1.76	-8
Uttar Pradesh	1	1.28	28
Total India	16.04	14.76	-8

Source: US Department of Agriculture, Maize Monthly Report, October 8-2011-12 (Proj)

ply. Strong demand from the starch industry and from poultry feed manufacturers has supported higher prices.

Increase in demand

Increasing demand from the poultry sector is likely to substantially hike maize consumption to over 30 million tonnes by 2020 due to which its production has started growing at a faster pace. This is mainly catering to the demand from

the poultry feeds industry, says the Maize Report of The Associated Chambers of Commerce and Industry of India (ASSOCHAM).

According to the report, currently, maize consumption stands at around 16 million tonnes, which is expected to grow at a rate of 6 per cent (compared to present growth rates of around 5 per cent). The trend will continue as poultry farming is increasing due to demand, and as it enables a large number of entrepreneurs to become self-reliant. The ASSOCHAM report projects that maize consumption would exceed 30 million tonnes in the next 11-12 years. The poultry sector consumes the largest chunk of the Indian harvest (51 per cent), followed by human consumption (26 per cent), the starch industry (12 per cent) and livestock feeds, etc (11 per cent). Earlier, poultry farming accounted for less than 40 per cent of consumption.

The need to increase yields

The report says that the current level of maize yield in the country (2.17 MT/Ha) is far behind the global average of 5 MT/Ha, and there is huge scope for improvement by adopting hybrids, particularly in traditional maize growing regions. If the country manages to push maize yields anywhere close to the global average, there are immense oppor-

MARKET SURVEY

Table III

A Comparison of the Average Nutritional Constituents of Maize with Rice and Wheat

(100g portion)

Constituents	Maize	Rice	Wheat
Moisture	14.9	13.7	12.8
Protein	11.1	7.5	11.8
Fat	3.6	0.5	1.5
Fibre	2.7	0.2	1.2
Other carbohydrates	66.2	78.2	71.2
Minerals	1.5	0.6	1.5

tunities to increase maize exports as global demand for maize is growing steadily. According to D S Rawat of ASSOCHAM, "Maize consumption has shown a healthy growth of about 5 per cent per annum during the last two decades. Maize production on the other hand has grown at

a faster pace of about 6 per cent during this period, which turned India into a net exporter from being a net importer. The growth in production during this period was well supported by an increase in acreage apart from increases in yield," he added.

However, with the increasing competition for land among the various crops, and due to the absence of lateral expansion, the ASSOCHAM report suggests that the scope for increase in maize acreage in the coming years is almost non-existent. In such a scenario, production growth will be highly dependent on yield growth.

The adoption of hybrids, particularly in non-traditional maize

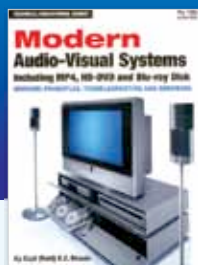
growing-states like Karnataka and Andhra Pradesh, and to some extent in some of the traditional maize-growing states like Bihar and Maharashtra, has pushed up the maize yield.

Also, looking at the increasing global demand, particularly in Asia, India has a huge potential to increase its global market share. A window of opportunity has now emerged following the strengthening of global corn prices, which in turn is triggering enormous demand for Indian maize in the Asian regions. India enjoys both a price and freight advantage in this market.

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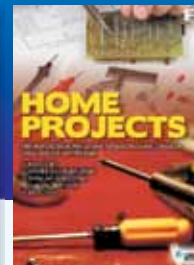
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