



GROWTH AND EXPORT PERFORMANCE OF INDIAN TOMATO

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ABSTRACT

A study was conducted revealed that during pre-WTO period the growth rates in area, production and productivity of tomato were 7.02 percent, 84.2 percent and 1.39 percent respectively. Whereas, during Post-WTO period the growth rates in area, production and productivity of tomato were 4.29 percent, 7.9 percent and 1.02 percent respectively. The instability index for area during pre-WTO (13.35%) and Overall period (13.49%) were higher compare to post-WTO period (8.09%). Instability index for production during Post-WTO period (25.87%) was higher compared to both pre-WTO (18.49%) and overall period (25.00%). Similarly the instability index for productivity of tomato was higher during overall period (17.9%) compared to both pre-WTO (15.87%) and post-WTO (5.99%) periods. The growth rate of tomato during pre-WTO period in terms of quantity was increased at the rate of (75.12%) per annum while, in terms of value it was increased at the rate of (634.3%) per annum. Whereas, during post-WTO period the quantity wise export of tomato was positively decreasing at rate of (50.42%) per annum and value wise growing at the rate of (55.61%) per annum. In overall period, quantity wise export of tomato increasing at rate of (57.86%) per annum while value wise, it was growing at rate of (52.44%) percent per annum. The instability index of export quantity of tomato was higher in pre-WTO (153.62%) compared to post WTO (46.67%) and overall period (88.42%) and with regard to export value of tomato, it was higher in pre-WTO period (135.19%) compared to post WTO (44.56%) and overall (85.65%) periods.

KEYWORDS: Tomato, Area, Production, Export, Compound growth rate, Instability index.

INTRODUCTION

Tomato (*Lycopersicon esculentum*) belongs to the genus *Lycopersicon* under Solanaceae family. Tomato is a herbaceous sprawling plant growing to 1-3 m in height with weak woody stem. The flowers are yellow in colour and the fruits of cultivated varieties vary in size from cherry tomatoes, about 1-2 cm in size to beefsteak tomatoes, about 10 cm or more in diameter. Most cultivars produce red fruits when ripe. Tomato is a native to Peruvian and Mexican region. Though there are no definite records of when and how it came to India, the Portuguese perhaps introduced it to India. Tomato is one of the most popular vegetables grown in India because of its high nutritive value, higher production and wide ecological amplitude. It is a rich source of vitamin and organic acid. Tomato fruits are used for different food preparations such as soups, salads, pickles and ketchups apart from being consumed in raw form. Tomato also has medicinal value. It is an excellent source of vitamin "C" and also called as a 'poor man's orange' (Satyanarayana *et al.*, 1992).

Tomatoes are grown extensively in India, producing about 9.362 million tons with an area of about 535,000 ha. Foreign trade policies have given high importance in boosting our agricultural exports especially with the signing of GATT. It is argued in certain quarters that with the establishment of World Trade Organisation, India has higher access to global market especially for horticultural commodities (National Horticulture Database 2013). The quantum of horticultural exports from the Karnataka state is estimated at Rs.600 crores. Though India is the second largest producer of vegetables, its total market share in the world trade of fresh/ processed vegetables was as low as two per cent. However, exports of onion, potato and tomato constitute a major portion

of total vegetables exported from India. On this background, the present study has been undertaken with the objectives to estimate the growth and instability of area, production and productivity and export of tomato in India and to analyse direction of trade of tomato from India.

MATERIAL AND METHODS

The study was mainly based on the secondary data from various sources, which included annual reports, Yearbooks, Food and Agricultural Organization (FAO), Indiastat.Com and Ministry of Commerce and Industries. The study period was divided in to three sub-periods, viz. Pre-WTO (1961-62 to 1994-95), Post WTO (1995-96 to 2010-11) and overall period (1961-62 to 2010-11). The analytical tools employed in the present were Compound annual growth rate and instability index.

RESULT AND DISCUSSION

The growth rate of area, production and productivity of tomato is presented in (table 1) perusal of table revealed that, in Pre-WTO period, Post-WTO period and overall period the growth rates of production were higher than of productivity and area indicating that lead growth. And is mainly because of positive growth rate in Productivity of tomato. During pre-WTO period the growth rates in area, production and productivity of tomato were 7.02 percent, 8.42 percent and 1.39 percent respectively and found significant at one percent level of significance. Whereas, during Post-WTO period the growth rates in area, production and productivity of tomato were 4.29 percent, 7.9 percent and 1.02 percent respectively. In overall period the growth rate in area, production and productivity of tomato were 5.92 percent, 8.31 percent and 1.84 per cent respectively. The Growth rate in area and production of tomato during Post-WTO period was found to be lower than both Pre-WTO and

Overall periods, this may be because of stability in the area and production during Post -WTO period.

Instability index of area, production and productivity of tomato is presented in (table 2) that, the instability index for area during pre-WTO (13.35%) and Overall period (13.49%) were higher compare to post-WTO period (8.09%).Instability index for production during Post-WTO period (25.87%) was higher compared to both pre-WTO (18.49%) and overall period (25.00%).similarly the instability index for productivity of tomato was higher during overall period (17.79%) compared to both pre-WTO (15.87%) and post-WTO (5.99%) periods. These fluctuations in production and productivity of tomato were mainly influenced by the rainfall and other climatic factors. The release of new varieties and innovative cultural practices developed for management of pest and diseases in recent years. Variations in productivity, which affected the level of production in different years. The instability in production of tomato was due to change in the rate of productivity and area of cultivation.

The growth rate of tomato both in quantity and value presented in (table 3), results revealed that the growth rate of tomato during pre-WTO period in terms of quantity was increased at the rate of 75.12 per cent per annum while, in terms of value it was increased at the rate of 63.43 per cent per annum. Whereas, during post-WTO period the quantity wise export of tomato was positively decreasing at growth rate 50.42 per cent per annum and value wise, it was growing at the rate of 55.61percent per annum. In overall period, quantity wise export of tomato increasing at rate of 57.86 percent per annum while value wise, it was growing at rate of 52.44 percent per annum. It implies that a higher quantity of tomato was

being exported before establishment of WTO, which reduce the unit price of tomato.

The instability index of tomato in both quantity and value presented in (table-4), results revealed that the instability index of export quantity of tomato was higher in pre-WTO (153.62%) compared to post WTO (46.67%) and overall period (88.42%) and with regard to instability index of export value of tomato, it was higher in pre-WTO period (135.19%) compared to post WTO (44.56%) and overall (85.65%) periods. This indicates that the export growth after establishment of WTO was lower and also, changing demand for Tomato in foreign countries.

CONCLUSION

Tomato is one of the most popular vegetables grown in India because of its high nutritive value, higher production and wide ecological amplitude and it is grown extensively in India, producing about 9.362 million tons with an area of about 535,000 ha. Though India is the second largest producer of vegetables, its total market share in the world trade of fresh/ processed vegetables was as low as one per cent. However, exports of onion, potato and tomato constitute a major portion of total vegetables exported from India. The Growth rate in area and production of tomato during Post-WTO period was found to be lower than both Pre-WTO and Overall periods, this may be because of stability in the area and production during Post -WTO period. The fluctuations in production and productivity of tomato were mainly influenced by the rainfall and other climatic factors. The release of new varieties and innovative cultural practices developed for management of pest and diseases in recent years. Variations in productivity, which affected the level of production in different years and the instability in production of tomato was due

to change in the rate of productivity and area of cultivation. The export growth after establishment of WTO was lower and also, changing demand for Tomato in foreign countries.

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Table: 1 Compound growth rates analysis of area, Production and Productivity of Indian Tomato

Year	Compound growth rate		
	Area	Production	Productivity
Pre-WTO period (1961-62 to 1994-1995)	7.02**	8.42**	1.39**
Post-WTO period (1995-96 to 2010-11)	4.29**	7.9**	1.02**
Over all (1961-62 to 2010-11)	5.92**	8.31**	1.84**

** Significant at 1 per cent level

Table: 2 Instability analysis of area, Production and Productivity of Indian Tomato

Year	Instability Index		
	Area	Production	Productivity
Pre-WTO period (1961-62 to 1994-1995)	13.35	18.49	15.87
Post-WTO period (1995-96 to 2010-11)	8.09	26.87	5.99
Over all (1961-62 to 2010-11)	13.49	26.00	17.79

Table: 3 Compound growth rates of Export duality and total value of Indian Tomato

Year	Compound growth rate	
	Export Quality	Export value
Pre-WTO period (1978-79 to 1994-95)	75.12**	63.43**
Post-WTO period (1995-96 to 2010-11)	50.42*	55.61*
Over all (1978-79 to 2010-11)	57.86**	52.44**

** Significant at 1 per cent level

* Significant at 5 per cent level

Table: 4 Instability analysis of Export quality and total value of Indian Tomato

Year	Instability Index	
Pre-WTO period (1978-79 to 1994-95)	153.62	135.19
Post-WTO period (1995-96 to 2010-11)	46.67	44.56
Over all (1978-79 to 2010-11)	88.42	85.65

