



Review Article

POTENTIALS AND PROSPECTS OF ORGANIC TEA: AN APPROACH TOWARDS SUSTAINABILITY

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Abstract: Organic tea production has increased over the past decade because of the perceived higher quality of the tea as well as the benefits for environmental and human wellbeing. Moreover, organic tea will also help in better price realization and uplift the socio-economic condition of tea growers. The organic tea movement which started in Sri Lanka in 1980 has now become popular all over the world and many countries such as India, China, Japan, etc. have shifted to organic tea cultivation. At present, China is the world's largest producer of organic green tea followed by India and Sri Lanka while Japan, South Korea, Kenya and Turkey have emerged as minor exporters of organic tea. Among the different forms of organic tea available in the market, black organic tea occupies a dominant market position. The demand for organic tea has been increasing all over the world with increasing consumer awareness. However, the switch to organic tea farming will start some challenges such as lack of knowledge in the field of organic cultivation by farmers, waiting period for conversion which can be in years, financial hurdles for certification, competition from large tea corporates, etc. Nevertheless, the production of organic tea will require commitment to improve the cultivation and the physical ability to implement a farming system. With immense potentials, further support from respective governmental agencies and a guaranteed price on organic tea, it can be the future for the entire tea industry.

Keywords: Organic tea, Global market

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Introduction

Tea, *Camellia sinensis* (L.) O. Kuntze, one of the world's oldest and most important beverages is cultivated in more than 3691.89 thousand hectares of land [1] in over 50 countries around the world. Classified primarily as a tropical plantation crop [2], it is cultivated from Georgia, 42°N latitude, to Hamilton, New Zealand, latitude 37°S [3]. Globally, tea production is on a steady rise and is projected to reach \$67.751 million by 2023 from \$46.392 million in 2016, growing at a CAGR of 5.5 percent. The principal producers of tea are China, India, Kenya, Sri Lanka, Vietnam and Indonesia which contribute to 85% of world tea production [4]. Being a major export commodity, tea is strictly regulated by various international agencies such as World Health Organization (WHO), Food and Agricultural Organization (FAO), Environmental Protection Agency (EPA) and European Economic Commission (EEC) which have strictly regulated the use of different chemicals in tea [5]. Moreover, increasing awareness on food safety and demands for organic food and drinks in the global market has led to promotion of organic farming in all regions of the world [6]. Over the last few years, agricultural policies have undergone radical changes through diversification and emphasis on sustainable production system. There is a steady growing demand for organic tea or pesticide free tea in the international market which impinges on the export price. The rising demand for organic tea in countries like United States, Japan and Germany and other European countries is due to growing consciousness of the people against harmful effect of conventionally produced tea [7]. As such, growing health concerns, increasing pesticide and chemical poisoning cases, harmful environmental impact and improving per capita spending on organic products are expected to boost the demand for organic beverages across the globe. Under the present scenario of continuous depletion in crop productivity, organic cultivation could be a possible solution to readdress the issue by restoring the ecosystem, mitigating the problem climate change and overall wellbeing of mankind.

Presently, the demand for organic tea in the international market is around 3 million kg per year and the growth rate is 10 percent per annum [7]. The market for organic tea is still comparatively underdeveloped which augurs favorably for exporters of black tea. Organically produced black tea may revive the export scenario of tea. Organic tea cultivation will also help in better price realization and uplift the socio-economic situation of the tea growers, especially in developing countries like India. Nevertheless, organic tea cultivation is very much a reality and could be effective and game changing situation for revivalism of tea cultivation.

History of organic tea

Organic tea farming is based on four principles viz., principle of health, ecology, fairness and care. The organic movement started in the 1980s in Sri Lanka through contact and inspiration of local NGOs with the Philippine organic agriculture movement [8] and a movement known as Lanka Organic Agriculture Movement (LOAM) was initiated [9]. In India, organic tea farming began in 1986 at Darjeeling and later extended to Assam and South India. Tanzania, Japan and Kenya also started with organic tea during the same period. In China, production of organic tea was started since the 1990's, and developed at a higher rate in the subsequent years. At present, the acreage of tea garden producing the organic tea is around 6700 ha in China up to the end of 2000. It is mainly distributed in the provinces of Zhejiang, Jiangxi, Anhui, Hubei, Yunnan and Hunan [10].

Scope of organic tea

Undoubtedly, organic tea shall deliver a creditable product range with comparatively greater consumer preferences in the conventional and other teas. At present, the organic tea sector is a very small part (1.11%) of the tea industry when compared to conventional tea.

Consumer awareness on health foods including pesticide free commodities is a major driving force for production and promotion of organic tea. It is a niche market, where the product sells at a premium price. The average declared value for all organic teas, regardless of origin, is \$ 10.18 per kilo in 2014 or about \$ 4.63 a pound [11]. As a health drink, organic tea can act as remedy for patients suffering from high cholesterol, heart disease etc. For people suffering from obesity, tea can help in reducing the excess fat from the body by increasing the body metabolism. Numerous findings also reveal that organic tea can bring about several positive physiological changes in the human body for maintaining a healthy life or by treatment of chronic diseases. Many of the prominent and medicinally important compounds are retained in organically produced tea. Hence, organic tea contains a higher amount of catechins such as epicatechin, epicatechingallate and epigallocatechin gallate as compared to conventional black tea [12] and hence will be more beneficial to the human body. Another form of organic tea, the tea oil, is gradually gaining popularity owing to its greater shelf life and storage.

Global market

China is the world's largest producer of organic green tea and exports organic tea to Japan, Germany, France, Denmark, Holland and United States of America [14]. The total organic tea production is around 4000 tones with total output value is around 150 million RMB Yuan [10]. Most popular brands from China include Tenfu, Ten Xin, Dan Feng and Uncle Lee Geng Xiang [15]. It has been reported that there are around 20 countries importing 10000 tons of organic tea from China [16]. In terms of organic black tea, India leads the world and the entire production is exported to the United Kingdom, Germany, United States of America, Japan and Australia [15]. Organic tea from Darjeeling region is now making inroads into new markets like Russia, Japan, China and the UAE. There are 52 organic gardens in Darjeeling, of which 20 are on certified bio-dynamic farming [17]. Organic Darjeeling tea is sold at € 25-30 per kilogram in retail stores in the European market and at \$ 25-30 per kilogram in the United States of America. The organic tea market is expected to grow at a CAGR of more than 5% in the coming 5 years [18]. In the state of Assam, north east India, handmade organic tea produced by small tea growers have been exported to Canada, North America, France and Egypt in small quantities. Handmade organic tea of Assam are increasingly becoming popular and are sold at INR 700-1500 per kilogram for black orthodox tea and INR 1500-1600 per kilogram for green tea during 2013 and 2014 [19]. The price of organic tea however depends mainly on the quality [20]. The Sri Lankan organic tea industry caters for black, green and silver tip teas in bulk and processed teas, value-added teas with flavors and environmentally friendly packages which fetch a minimum of 2-3 folds premium prices in the international markets. Australia, Germany, Japan, UK, Netherlands and United States are the traditional buyers of Sri Lankan organic tea [21]. Other destinations are Italy, France, Canada, Singapore and Spain [22]. The local demand for organic teas is now increasing. However, the organic certification process is very costly, a factor that makes organic tea 10-15% more expensive than regular tea [15]. Nevertheless, organic and biodynamic production in Sri Lanka has recorded 268422 kg as at February 2016 and approximately 10000 MT made tea per year is expected. Besides these countries, Japan, South Korea, Kenya and Turkey has also emerged as potential exporters of organic tea. Overall, organic tea market is emerging in Asia at a rapid rate. Further, raising awareness of health and environmental benefits from organic tea production, product labeling with quality control certification would create a higher and more competitive price for organic tea products in the long run. New process technologies are currently being developed to produce microbial fermented dark teas, along the ancient Chinese "wetting and piling" method.

Diversified products

Diversified products from tea will be an important approach with tremendous potentialities to cope with rising production cost and staggering market prices. Investigations to develop industrial applications viz. tea-based nutraceuticals, functional drinks and tea-based health, beauty and body care formulas have been started in the research laboratories and research centres of different companies of

Japan and in China. Tea catechin products that have practical and industrial applications have gained wide popularity in Japan, China, South Korea and some other countries [23]. Korea is producing a wide range of products including beauty products, soap, tea oil, tea latte, sun cream supplements among other things from organic tea which are available at the sales counter of supermarkets. In India, a few combination products such as organic tulsi (English: Basil, *Ocimum tenuiflorum*) green tea and organic tulsi lemon ginger green tea have been developed. Both tulsi and green tea are rich in antioxidant and helps in refreshing and energizing the body and mind while lemony flavors mixed with tasty tulsi leaves and a touch of natural sweetness, with the added benefits of green tea and ginger [23].

Certification of organic tea

While certification gives reliability to product as organic, the certification itself would need a guarantee [24]. For this, an international system to assure the organic certification was introduced namely the International Federation of Organic Agriculture Movements (IFOAM) which is the worldwide umbrella organization for the organic movement uniting more than hundred countries and many member organizations of those countries. INDOCERT, ECOCERT SA, IMO Control, Naturland- India, Onecert Asia Agri Certification Private Limited, SGS India Private Limited, SKAL International Ltd., etc. are all certifying agencies functioning at national and international levels and allows a tea grower to sell, label, and represent his products as organic. INDOCERT is India's first organic certification body which conforms to the National Standards for Organic Products established in 2000. The certification is issued by testing centres accredited by the Agricultural and Processed Food Products Export Development Authority (APEDA), under the National Program for Organic Production of the Government of India. Most recently, the Indian government has formally launched the Food Safety and Standards (Organic Foods) Regulations, 2017, along with the "Jaivik Bharat" logo and "Indian Organic Integrity Database Portal" to popularize the concept of organic foods and also to build consumer confidence in organic foods [18]. Besides, there are different certifying agencies on agriculture and food setting important standards. Japanese Agricultural Standards (JAS) are standards for the agriculture industry maintained by the Japanese Government. Rainforest Alliance is another non-governmental organization which aims at transforming land-use practices by organizing training and certification programmes for sustainable farming.

Constraints in organic tea production

Organic farming relies on natural predators and an understanding of local soil and environment [24]. The switch to organic tea farming will start some challenges in the production behavior of local tea producers [8]. A lack of knowledge in farmers is by far the most widely cited reason for not adopting organic cultivation [24]. Tea growers commonly lack the appropriate skills to convert their conventional farming systems to become more productive yet sustainable. Cost of production of organic tea is comparatively higher to non-organic producer. Thus, compensation by better price realization is necessary [25]. Benefits will not be immediate and small growers will require considerable support in the first years such as capital grant to ward off financial problems associated with the conversion [24]. The international market for organic tea is very competitive and access can only be achieved through fair trade channels. Hence, there is probability that large organic producers and companies may push off small producers from the market. Small growers have limited information and knowledge on marketing issues which is a severe advantage for big producers. Information sharing and training programmes are vital for small growers for their sustainable development. Moreover, certification for the international market is very expensive. Access to certification, cost involved there in and a time lag of three years (conversion stage) often constrain farmers from adopting organic farming [26]. Very few growers have the luxury of going through this tedious process. Marketing of tea is another major challenge before the small growers who are processing their own leaf, especially those who are going organic. The development and production of value-added products such as green tea extract, herbal tea blends and fruit teas are very remunerative.

But unless production and certification hurdles are cleared by the small growers, the time and money needed for such products will continue to elude most [27].

Future trend

Organic tea is the path to the future. The health benefits and medical applications are considered as a major driver for organic tea market. The rich taste of organic tea has made it globally popular which also tends to have a positive impact on its market growth. Adoption of healthy lifestyle and high demand for refreshing hot beverages has supported the positive growth of organic tea [28]. However, green organic tea is gaining popularity due to its property of reducing excess fat from the body which is also supporting the increased demand of the product from consumer's side. Global markets will also witness a growth in unflavored organic teas. Germany, United Kingdom, China, India and Sri Lanka is expected to be top exporters of organic tea [29] while some other countries such as Brazil, Argentina, Saudi Arabia and South Africa are expected to enter in to the organic tea domain.

Conclusion

The booming development taking place in organic tea and marketing offers many opportunities. But there are challenges as well as and these have to be faced. However, if we do not give up our holistic principles, we may be able to contribute to the development of organic tea production system which could lead to a change in life style and consumption pattern that will have far reaching effects. With the present technologies as well as availability of organic manures, not only tea but every plantation crop can be solely brought under organic production. Consumer demand for "healthier" food has been considered one of the major factors influencing consumers to demand for organic produce. Supplying a market in which demand outstrips supply is a producer's dream. This has been the case with organic tea for a long time and figures show that this trend is likely to continue in the future. Most developing countries focus on export markets in the developed countries; however, the domestic market opportunities for organic tea may also be exploited. There are a number of ways in which a government can promote organic tea production. Support from governmental agencies and NGOs in the form of technical training and on-farm monitoring is important. Overall, training, resource development, financial support for initial investments during conversion and certification, policy directives in maintaining organic tea holdings, marketing and business promotions will help aid in sustaining the lavish raw and processed products of organic teas. Nutritional and health benefits of organic teas can be used as marketing and promotion tool.

Application of review: Study providing first-hand information on the status of organic tea production, its scope and potential and future thrust.

Review Category: Organic tea

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