

Barriers to trade and their impact on production and export of red Chilli in India

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Abstract

Objectives: Red Chilli is the principal spice exported to different nations from India. Even though the production and export of Red Chilli is on the increasing side, there are certain barriers which actually hinder the trade and hence the study has focused on identifying the Non-Tariff Barriers and its impact on Production and Export of Red Chilli in Tamil Nadu.

Methods/Statistical Analysis: The researcher has chosen Ramanathapuram, Sivagangai and Thoothukkudi Districts as study area among the 32 districts in Tamil Nadu owing to higher area under Chilli cultivation. For the study, 120 sample farms have been chosen following a Three-Stage Random Sampling Technique. Using the time series data, the production and export performance were assessed following a Compound Growth Rate Analysis and Cop-pock's Instability Index was also used to test the instability if any in the export trade.

Findings: Remarkable achievement in productivity of Chilli is visible only during the period of 2016-17. It might be due to the practice of adoption of precision technologies at field. The steady growth in productivity is visible from 2005-06 because of the intervention of National Horticulture Mission focusing area expansion and productivity enhancement. One of the foremost restrictions in the Consignment of Red Chilli is prevention of Pesticide Residues and the Aflatoxin toxicity. The standards set by the various importing countries for different forms of the Chilli produce varies from country to country. In this context, different export norms have to be followed by the exporters. Another issue is, the export of Red Chilli has faced some instability. The export of Chilli found to be on the higher value in terms of both Indian Rupees and US dollars during pre-globalization period and however it could be found decreasing during the post globalization era. Post Globalization period has faced decreasing trend in the export of Chilli Spice when compared to the Pre-implementation of globalization.

Applications: Findings of the study will be a guiding force to the exporters of Red Chilli in learning the regulations in vogue, product standards prescribed by different nations for follow up. Strict adherence of regulations, and the export trade has grown. Considering the performance of trade, National Horticulture Mission is taking effort to establish Spice Parks on need basis to boost the production and export to facilitate supply.

Keywords: Trade Barriers, Export of Spices, Export of Chilli, Export Instability, Export Regulations, Trade Performance.

1. Introduction

Barriers to Trade are referred to as Non-Tariff Barriers or often called as "Non-Tariff Measures" which are trade barriers that restrict imports or exports of goods and services through some mechanisms other than imposition of small Tariffs. Conceptually the Non-Tariff Barrier is an obstacle to international trade mainly comprises food safety and security related issues which are periodically revised by each and every nation to protect their own producers or to minimize the residual content in the food. In addition to safety issues, the non-tariff measures may take the form of Import quotas, subsidies, customs delays, administrative delays, technical barriers or other systems preventing the trade.

According to World Trade Organization, Non-Tariff Barriers to Trade include import licensing requirements, rules for valuation of goods at checking points preferably at customs entity, pre-shipment inspections, rules of origin and trade related investment measures. India is actively following the free trade agreements especially in agricultural and processed food products as enunciated by World Trade Organization.

While free trade agreements impose certainly a reduced tariffs, the gains from such free trade becomes limited in the presence of Non-Tariff Barriers which will be a different one from country to country based on their preferences and nature of transactions made. Any trader who is focusing his services on exporting the farm produce particularly the Red Chilli to any other country who actually demands heavily on the produce from India faces some kind of constraints or some barriers in effecting the trade. The barrier which prevents or hinders the trade is otherwise designated as Tariff Barriers and Non-Tariff Barriers. This was clearly explained by the World Trade Organization and gave some special prescriptions on it and hence every trader who is actually willing to place the Indian product in the soils of any other nation needs to follow some guidelines, need to have some quality parameters or standards; need to follow some hygienic practice and deliver the produce free from infected status and to follow the size prescriptions for easy handling and usage. In this situation, the discussion on Non-Tariff Barriers and its impact on the production and export of Red Chilli becomes much important to the stakeholders and hence this study.

2. Design of the study

1. Sampling design

Tamil Nadu is blessed with 32 districts. Among these, 29 districts have the climate to cultivate the Chilli crop. However, cultivation of Chilli is quite common and in higher acreage in Southern part of Tamil Nadu owing to its suitable climate and markets prevailed for the produce harvested. In this respect, the researcher has chosen Ramanathapuram, Sivagangai and Thoothukkudi Districts as his study area in the first stage. In the second stage, the taluks which are having higher area under Chilli cultivation under contractual arrangement with Garden Valley Export Corporation has been chosen viz., Vilathikulam taluk in Thoothukkudi District, Kamuthy in Ramanathapuram District and Thiruppuvanam Taluk in the Sivagangai District. In the third stage, two villages per taluk which is having higher number of registered farmers with Garden Valley Export Corporation have been chosen. From each village 20 registered farmers were randomly selected following a Three-Stage Random Sampling Technique.

2. Collection of primary data

To address the objectives enshrined in the study, primary data with regard to area under Chilli cultivation, Production and Productivity of Chilli, Size of Holding, Experience of the farmers in cultivation of Chilli and other associated information were collected using a structured pre-tested questionnaire designed for the purpose. Accordingly 120 Registered farmers with the Garden Valley Export Corporation were selected from their records following random numbers for selection.

3. Collection of secondary data

Time series data on export of Chillies for the period from 1980-81 to 2016-17 were used for the study. Secondary data on area, production and productivity of Chillies; exports in quantity and value terms, unit value of exports; country-wise exports; world exports and imports, country-wise imports, monthly and annual data on domestic and international prices were collected from various issues of Spice Statistics and Spice India published by Spices Board, Kochi and also the website of the Spices Board.

The secondary data covering a period of 27 years from 1980-81 to 2016-17 was classified into two sub-periods viz., pre-WTO and post- WTO periods and a comparative analysis on the performance of export was made. The growth, instability, dynamics in the direction of exports, international competitiveness were also studied using the secondary data but are not presented in this article considering the length of the article. Secondary data was also collected from different web sites to learn and document the Non-Tariff Barriers like export regulations, sanitary and phytosanitary issues, anti-dumping and other government procurement procedures. Amidst the different import regulations imposed by different nations with regard to food safety and the certification requirements towards hazard analysis and critical control point as Non-Tariff Barriers, how India has performed in respect of both the production and export of Spices and Red Chilli need to be assessed. For that the time series data on production of Spices and Export of Spices were gathered from the Web Site of Spices Board and the same were subjected to growth rate analysis.

4. Compound Growth Rate (CGR)

Compound Growth Rate was used for finding the annual growth in the production and export data on spices and Red Chilli by utilizing the following formula. The form of the equation is,

$$Z = X C^t \mu_t \text{ ----- 1}$$

Where,

Z= Dependent variable for which growth rate is estimated

X = Intercept

C = Regression co-efficient

t = Time variable

μ = Error term

The compound growth rate was obtained using the logarithmic form of the equation [1] as detailed below.

$$\ln Y = \ln X + C \ln t'$$

Then, compound growth rate (r) in per cent was computed by using the relationship

$$r = [(Antilog \text{ of } C) - 1] \times 100$$

The compound growth rates were tested for their significance by the statistics given by

$$t = r / SE (t)$$

where,

$$SE (t) = [100 \times b \times SE(\ln C)] / \ln \mu$$

5. Cop-pock's Instability Index

Trend free measure of variability which is a close approximation of the average year to year percentage variation adjusted by the trend (1). To study the export instability, Cop-pock's instability index will be used to estimate the variation in the export of Red Chilli and its products which is algebraically expressed in the following estimable form,

$$\log V = \sum \left\{ \frac{\log X_{t+1}}{X_t/n} - m \right\}^2$$

The instability index = (antilog $\sqrt{V} \log - 1$) x 100 -

Where,

X_t = Value of Exports in a year or Volume of Exports in year t

n = Number of years

m = Arithmetic mean of the difference between the logs of X_t and X_{t+1}

Log V = Logarithmic Variance of the series

The study conducted from October 2017 to December 2017 and the data related to the agricultural year 2016-17. Similar approach was also used by Shaikh Irfan Ahmed in Marathwada during the year 2013 [1].

3. Results and Discussion

The Non-Tariff Barriers may be all or part of the following becomes a barrier either in one context or many of the situations in export of farm produce. The results and discussion on the following titles will give an overall picture on Trade barriers which affects the Chilli export in particular.

1. Import Policy Barriers or Regulations
2. Product Standards and Certification Requirements
3. Anti-Dumping and Countervailing Measures
4. Export Subsidies and Domestic Support Measures
5. Export Performance of Spices and Chilli
6. Government Procurement Initiatives
7. Perception of Traders on Common Barriers to Trade
8. Perception of Traders on Hidden Barriers to Trade
9. Problems Faced by the Traders.

3.1. Import Policy Barriers or Regulations

One of the most commonly known Non-Tariff Measures or Barriers is the restrictions on imports imposed by the importing countries to regulate the trade in the context of supporting the domestic output produced by their farmers and at the same time permitting certain import to meet the demand of the importing country, certain regulations are periodically imposed by the European Union or the United States whom are the giants in import of our farm produce. In this context, what type of restrictions or regulations imposed by the European Union on our spices related produce is of much important to the planners and policy makers and hence these details are analyzed and the results are presented in Table 1. The European Union Commission has published the Regulation (EC) No. 2017/2298 (the high risk list) to be effective from January 2018. "The product added to the high risk list is Peppers (*Capsicum* spp.) from India will be tested for pesticide residues at a frequency of 10% (Table 1) in accordance with the above directive, the exporters / growers of Chilli and concerned stakeholders are advised to adhere the import requirements of European Union carefully.

Table 1 revealed that *Capsicum* spp. Which are exported from India to European Union has faced a 10% check for Pesticide Residues and 20% check for Aflatoxins by the authorities of European Union at the entry point level. A study conducted [2] at Pakistan during 2013 found out that the differences in Aflatoxin levels in red Chillies with pedicle, without pedicle, normal and discolored pods. The results showed that Aflatoxin was higher in discolored pods as well as Chillies without pedicle. On an average, Chillies with pedicle showed much lower levels of Aflatoxins (4.46 ppb) than those without pedicle (9.16 ppb). Normally, the export of Red Chilli took place with pedicle to reduce the level of Aflatoxins.

Table 1. Details of food of non-animal origin (Chilli) and its import control at the designated point of entry

Sl. No	Name of the Food	CN or HS Code	TARIC sub Division	Country of origin	Hazard	Frequency of Checks (%)
1	<i>Capsicum annuum</i>	07096010 07108051		Dominican Republic	Pesticide Residues	20
2	<i>Capsicum</i> Spp.	07096099 07108059	20 20			
3	<i>Capsicum annuum</i>	07096010 07108051		Egypt	Pesticide Residues	10
4	<i>Capsicum</i> Spp.	07096099 07108059	20 20			
5	<i>Capsicum</i> Spp.	07096099 07108059	20 20	India	Pesticide Residues	10
6	<i>Capsicum</i> spp.	20089999 09042110	79	Sri Lanka	Aflatoxins	20
7	<i>Capsicum</i> spp.	07096099 07108059	20 20	Thailand	Pesticide Residues	10
8	<i>Capsicum annuum</i>	07096010 07108051		Turkey	Pesticide Residues	10

Source: Official Journal of European Union, 2017) (CN Code is the Combined Nomenclature; HS is the Harmonized System

Import restrictions on some items of food articles on grounds of health security are being maintained by almost all the countries and perhaps these cannot be considered as Non-Tariff Barriers but taken into consideration the purpose for which the import of particular product is permitted by the respective nation. Though many nations are importing Red Chilli to their credit from India, certain regulations are being imposed by the giants like European Union and hence the details of European Union Regulations in respect of Spices are furnished in Table 2. Since the study is focusing on Non-Tariff Barriers faced by spice exporters specifically Red Chilli exporters, the regulations passed by the European Union for Spices import are collected from different websites and the same are presented in Table 2.

Table 2 revealed that the general food law was enunciated during the year 2002 which was followed by 2005 regulations for specific commodities like Fruits, Vegetables, Cereals, Pulses, Oilseeds, Tea, Coffee, Spices, Meat and Meat Products. Later on, the 396/2005 regulations were amended and new regulations were enunciated during the year 2010 and 2011. The regulations developed during the year 2010 and 2011 were focusing mainly on the Maximum Limit of Pesticide Residue Level and are clearly spelt out in the regulations. On these lines, the exporters of Red Chilli should test their consignment thoroughly and the same should be exported after meeting the minimum level of pesticide residue.

Table 2. European union regulations for spices and other farm produce

Sl. No	Details of Regulations	Category	Effective From
01	European Union Regulation EC) 178/2002 (General Food Law) is the harmonized regulation which sets out the general principles and requirements of EU harmonized food law.	General Food Items to be imported into EU.	On the day following its publication
02	European Union (EU) Regulation No. 750/2010 of 7 th July 2010 as regards Maximum residue levels for certain Pesticides in or on certain products	Fruits, Vegetables, Cereals, Spices, Tea, Coffee, Meat and Meat Products	On the day following its Publication. Published on 22.08.2010
03	European Union (EU) Regulation No. 765/2010 of 25 th August 2010 amending Annexes II and III to Regulation No. 396/2005 of the European Parliament and of the Council as regards Maximum residue levels for certain products	Fruits, Vegetables, Cereals, Pulses, Oilseeds, Tea, Coffee, Spices, Meat and Meat Products.	On the day following its publication. Published on 28 th August 2010.
04	European Union (EU) Regulation No. 893/2010 of 8 th October 2010 amending Annexes II and III to Regulation No. 396/2005 of the European Parliament and of the Council as regards Maximum residue levels for certain products	Fruits, Vegetables, Cereals, Pulses, Spices, Oilseeds.	On the day following its Publication. Published on 9 th October 2010.
05	European Union (EU) Regulation No. 310/2011 of 28 th March 2011 amending Annexes II and III to Regulation No. 396/2005 of the European Parliament and of the Council as regards Maximum residue levels for certain products	Maximum Residue Limits (MRL)	20 th Day following its publication. Published on First April 2011.
06	European Union Regulation No 24/2016 revealed that all the consignments of <i>Capsicum annum</i> and Nutmeg from India	Health Certificate need to be enclosed	January 8, 2016
07	Agriculture Ministry, Saudi Arabia has banned Green Chilli citing that it has unacceptable levels of Chemicals and Pesticides	Unacceptable level of Pesticide Residues	June, 2014 [3]

The following pesticide residues are not permitted in the consignments exported to European Union. They are:

1. Chlorothalonil, Clothianidin, Difenconazole, Fenhexamid, Flubendiamide, Nicotine, Spirotetramat, Thiocloprid and Thiamethoxamin
2. Acequinocyl, Bentazone, Carbendazim, Cyfluthrin, Fenamidone, Fenazaquin, Flunicamid, Flutriafol, Imidacloprid, Ioxynil, Metconazole, Prothioconazole, Tebufenozide and Thiophanate-Methyl
3. Aldicarb, Bromopropylate, Chlorfenvinphos, Endosulfan, EPTC, Ethion, Fenthion, Fomesafen, Methabenzthiazuron, Methidathion, Simazine, Tetradifon and Triforine

To avoid the pesticide residue level in the Red Chilli output, Production methods are totally changed in the study environment and they are concentrating purely on recommended organic methods of production of Red Chilli. For that some kind of Contractual arrangement is taking place between the farmers and the trading agency, the Garden Valley Export Corporation. In Andhra Pradesh, the Chilli Traders have complained that the high pesticide residues and the presence of Aflatoxins in dry Red Chilli have reduced the export volume to the United States and Europe, because of more stringent global mechanism on pesticide residues. For that, the Department of Horticulture of Andhra Pradesh has decided to adapt the Integrated Pest Management (IPM) techniques to overcome the crisis and educate the farmers to opt for an Integrated Nutrient Management by using organic fertilizers.

1. The general regulations for dried Chilli in European Union

If you import dried Chilli and Chilli products from India or any other country, then the importer need to be aware that there are specific import rules to comply with. The goods must be analyzed to check for the presence of Aflatoxin and for pesticide residues one should get the evidence certificate for Aflatoxin Free to prove. Aflatoxin is a toxin produced by certain species of mould which has the ability to cause liver damage and cancer to the human and hence this has to be avoided. Besides the health certificate issued by the Government of India is also of much important. To apply for import of Red Chilli, the analytical report and original health certificate and a common entry document are to be attached.

The importer has to make payment for the necessary quality checks. The law applies to all products that are made of 20% or more dried *Capsicum annum*. This includes all Chilli powder and some hot curry powders and spice mixes. Amidst these restrictions and regulations, India has exported certain quantity of not only Red Chilli but also different forms and types of Red Chilli to different nations after meeting the requirements of the importing nations. These products are given with harmonized codes which are delineated in Table 3.

Table 3. Harmonized codes of different forms and types of Red Chilli produce

Sl. No	Product Description	HS Code
01	Green Chilli	07096010
02	Dried Red Chilli	09042219
03	Chilli Powder	09042211
04	Red Chilli Seeds	09042212
05	Fruit of the Genus Capsicum	09042110
06	Dried Red Chilli Neither Crushed nor Ground	09042190

Table 3 revealed that the Green Chilli is identified with the Harmonized System code of "07096010". Dried Chillies are traded under two different Harmonized System (HS) Codes. The HS code for dried neither Red Chilli that are neither crushed nor ground is "09042190". Crushed and ground Chillies are included in a HS code with all other capsicums". The Red Chilli seeds which are exported to the neighboring country, Sri Lanka have a HS code of "09042212". While exporting the Red Chilli seeds, certain restrictions and conditions imposed to the exporter by the importing country through the import permit needs to be thoroughly analyzed. These are furnished under the head "Product Standards and Certification Requirements".

3.2. Product standards for Chilli and Certification Requirements

Chillies are one of the most important and commonly consumed spices all over the world and are believed to be originated from Tropical America (Peru). Chilli crop came to Asian continent during the sixteenth century with the identification of new sea routes by the Portuguese and the Spanish Explorers. A large percentage of Chilli cultivation has shifted to Asia due to conducive climate for the Chilli crop prevailed in Asian continent. India is one of the major Red Chilli pepper exporting countries in the world. India has more than 50 Chilli varieties which are cultivated in different parts of the country. Each variety has its own color and pungency to its credit. Mostly the size is determined by the length of the Chilli and hence these are classified and presented in Table 4.

Table 4. Size classification of Red Chilli

Serial No	Length of the Chilli	Size Code
01	Less than or Equal 5 CMs.	I
02	Between 5 and 8 CMs	II
03	Between 8 and 12 CMs	III
04	Between 12 and 16 CMs	IV
05	Greater Than 16 CMs	V

(Primary Survey from Traders)

Table 4 revealed that the Red Chilli is classified under five different classes based on its length and are provided with size codes. Higher the length of the Chilli gets higher codes which are respectively designated as one to five in class. Here, it is important to assess which variety has such higher length for export becomes important and hence these details are analyzed and the results are presented in Table 5.

Table 5. Length of Red Chilli varieties and their level of pungency

Sl. No	Name of the Chilli Varieties	Color (ASTA)	Length in CMs	Pungency in SHU
01	Chilli Variety - 334	40 - 50	06 - 08	18000 - 22000
02	Endo 5 Chilli	60 - 80	06 - 08	30000 - 60000
03	Sannam S4 Type	40 - 50	06 - 08	18000 - 22000
04	Teja Chilli	50 - 60	06 - 08	75000 - 110000
05	Chilli Variety - 273	80 - 100	09 - 11	15000 - 20000
06	Byadgi Chilli	100 - 140	10-13	12000 - 17000

Table 5 revealed no relationships that exist between the color, length of the Chilli and their pungency levels. It is purely based on their genetic makeup. Among the four medium varieties of Red Chilli, Teja variety found to have medium length and maximum pungency level which is expressed in Scoville Heat Units (SHU) or Scale. Scoville Scale is a long-standing measure of the hotness of Chilli Peppers. Capsaicin is a chemical compound that stimulates chemical receptor nerve endings in the skin. The number SHUs indicate the amount of Capsaicin present in a particular variety. This scale was developed in 1912 by an American Chemist, "Wilbur Scoville", to rate the pungency or heat of Chilli Pepper. Next to Teja Variety of Chilli, Endo 5 variety of Chilli had the highest pungency which is expressed in SHUs ranging from 30000 to 60000. All other varieties like Sannam S4 type, 273 varieties and 334 varieties which are having low level of pungency which are respectively ranging between 15000 – 22000 SHUs. Byadgi Chilli is the largest in length with Bright red color had poor pungency level which is arrived at 12000 to 17000 SHUs. To sum up, the Red Chilli varieties did not have any relation between their color, length and the pungency levels. In this circumstance, the specifications of the Red Chilli Product to be imported by respective countries are to be assessed and the details are presented in Table 6.

Table 6. Export specifications of Red Chilli imported from India

Sl. No	Particulars of Red Chilli	Export Specifications
01	Kind or Varieties of Red Chilli	Sannam S4, Teja, Byadgi, Wrinkle 273, Wonder Hot, Mundu, Yellow Chilli etc.
02	Form of Export	Whole Chilli with Stem, Whole Chilli Without Stem, Grounded Chilli Powder, Chilli Oleoresin, Chilli Meal
03	Length	As per Grade Specifications of American Spice Trade Association (ASTA)
04	Pods without Stalk	Maximum of 8%
05	Moisture Content	Maximum of 12.50%
06	Foreign Material	Maximum of 2%
07	Broken Pieces of Chilli	Maximum of 7%
08	Loose Seeds	Maximum of 2%
09	Damaged and Discolored Pods	Maximum of 6%

Table 6 revealed the details of product specifications for export of Red Chilli from India. The Red Chilli is exported abroad in different forms. They are Whole Chilli with and without stem, Grounded Chilli Powder, Chilli Oleoresin and the Chilli Meal. Among these produce, the moisture content of the produce should be less than 12%. Normally the exporters are maintaining the moisture content to the level of 10% and find no problem. The presence of foreign matters in the Red Chilli package should not exceed 2%. On verification of the lot, if the foreign matter and its presence exceed 2%, the lot will be rejected and hence much care has been taken by the exporters to send the pure form of Red Chilli to the importing destinations. The broken pieces of Chilli should not be there in the lot for more than 7%.

This is normally happening during the shifting of Red Chilli bags and becomes damaged. This level should not exceed 7% and the damaged and discolored Chilli should not exceed more than 6% in the lot. The exporters are so careful to keep the specifications at less than the prescribed level so that their produce will command reputation among the importing nations. Following the specifications of whole Chilli export, one has to assess the specifications of other produce of Chilli and hence these details are analyzed and the results are presented in Table 7.

Table 7. Export specifications for Red Chilli powder from India

Sl. No	Particulars of Granules	Granule Size Specifications
01	Coarse Powder	500 – 600 Microns
02	Medium Grade Chilli Powder	300 – 500 Microns
03	Fine Grade Powder	200 – 300 Microns

Red Chilli Powder is the major food ingredient in Indian and International cuisines. It brings the characteristic bright red color and pungency to any preparation of food items. Even the whole Chilli and its packing generate high pungency and the new entrant into that field cannot tolerate the pungency. However, the workers working regularly with the Red Chilli produce will become acclimatized to that pungency and takes routine business.

Table 7 revealed the details of specifications for export of Red Chilli Powder and is classified as course, medium and fine powder forms. The fine powder should have 200 to 300 microns size followed by the medium granule should contain only 300 to 500 microns size and the coarse powder of Red Chilli is permitted with the size particles to the level of 500 to 600 microns and hence the exporters should assess the prescriptions of import permit sent by the importing nation and the produce should be dispatched accordingly for bringing the confidence on the nation's produce. Another product line exported abroad from Chilli is the Chilli paste. For that also, specifications have been prescribed by the importing nation and hence these details are analyzed and the results are presented in Table 8.

Table 8. Export specifications for Chilli paste

Sl. No	Particulars of Chilli Paste	Export Specifications
01	Appearance	Reddish Orange Colored Paste
02	Odor	Characteristic Pungent Aroma of Fresh Chilli
03	Added Preservatives	1%
04	Salt Content	15%
05	TSS	20 –22%
06	P ^H for 10 per cent dilution	4.50 – 5.00
07	Acidity	0.6 – 0.9%
08	Moisture Content	65 – 70%


Table 8 revealed the details of some of the parameters and their specifications for Chilli paste which is intended for the markets abroad. Here the Chilli paste should not contain more than 70% of Moisture and the acidity level should not exceed 0.9%. While preparing the paste, addition of preservatives become unavoidable and its limit is fixed at less than 1%. The salt content of the paste should not exceed 15% and the appearance should be Reddish orange color and should resemble the odor of fresh Chilli.

Table 9. Certification requirements for export of Red Chilli produce

Sl. No	Particulars of Certificates	Certificates to be Issued by
01	Import-Export Code	Director General of Foreign Trade, Government of India
02	Import Permit	Department of Agriculture of the Importing Country
03	Orange Certificate of the International Seed Testing Association	Seed Certification Agency of Government of India
04	Phytosanitary Certificate	Plant Quarantine Officer, Ministry of Agriculture of Government of India
05	Fumigation Certificate	Accredited Fumigation Officer, Chennai
06	Certificate of Origin	Indian Chamber of Commerce
07	Commercial Invoice cum Packaging List	Exporting Firm
08	Bill of Lading or Proforma Invoice	Exporting Firm
09	Health Certificate	Export Inspection Agency, Chennai

So far the discussion went on the aspects of import regulations; restrictions; harmonized system codes for export; export performance in a decade of time and Product standards for export. Now it is important to discuss the certification requirements in the process of export of Red Chilli to different nations. For that purpose, the case of Sri Lanka to which an exporter is actively sending the processed Red Chilli Seed to the farmers of Sri Lanka. Personal interview with the exporter and the related documents / certificates are presented in Table 9. Table 9 revealed the details of certification requirements for affecting the export to a particular country. Here, an exporter has been personally approached for getting the copies of certificates which are needed for exporting the Chilli Seed for the benefit of farmers of Sri Lanka. The details of certificates required by the Importing Country, Sri Lanka is provided in the form of Import Permit which is presented in the form of Figure 1.

Figure 1. Import permit for Chilli seed



DEPARTMENT OF AGRICULTURE, SRI LANKA
Permit to imports plants under Plant Protection Act No 35 of 1999

Permission is hereby granted to the person or firm named in the schedule here to introduce into Sri Lanka the seeds or plants as specified, providing, the same are procured from the person or firm, named, that the introduction is made within three months from the date hereof through the Airport of Katunayake or Seaport of Colombo and that all the conditions noted in the schedule are observed in addition to such conditions as are prescribed in the regulations issued under Section 12 of the above mentioned Act

The use of this permit pledges the person or firm in whose favour it is issued to comply faithfully with all conditions imposed and the permit becomes nullified by the non - fulfillment of any condition specified in its Schedule.

SCHEDULE

Permit No: NPQS/VGS/2014/396

Name and address of Applicant: Land mark Agro Seeds
47/B, Katanawaththa Road,
Dankotuwa,
Sri Lanka.

Particulars of seeds to be imported:
Fifty (50) Kg seeds of Drumstick *Moringa olifera* var. PKM - 1
(Permission is allowed for above one item only)


To be supplied by: Griffin Crop Sciences (Pvt) Ltd
17/14B, G.F. Road, Near Water tank,
Irugur,
Coimbatore,
India.

Stipulations, if any, regarding inspections, fumigation, or disinfections: **Conditions of entry,**

01. The duplicate of this import permit must be sent to the consignor and must be included with consignment documentation.
(Other conditions of entry overleaf)

Issued in duplicate on 05th day of June 2014
and valid until 04.09.2014

ic-
i. Director General of Agriculture
ii. OIC/PQS/Air port, Katunayake.
iii. DD/SCS, Gannoruwa


 For Director General of Agriculture
Dr. D. P. P. Jayakody
 Additional Director
 National Plant Quarantine Service
 Canada Friendship Road
 Katunayake.

Besides import permit, the consignment should be accompanied with the following certifications. They are:

1. Orange Certificate of the International Seed Testing Association (ISTA) issued by the official of seed certification agency of the country of export confirming that the seeds are within the standards set by the Department of Agriculture of Sri Lanka. It should contain certain declarations which are presented as follows.
2. Lot Number and Quantity
3. Genetic and Physical Purity of seeds with Specific details of contaminants, if any
4. That seed moisture content does not exceed the Maximum
5. That the seeds have been sampled by the official seed certification agency and tested by a seed testing laboratory approved by the Government of the exporting country.
6. A Phytosanitary Certificate (Model of International Plant Protection Convention) issued with 14 days prior to dispatch and under the authority of the official National Plant Protection Organization of the Country of Export. It should contain the following declarations.
7. On Botanical Names of the seeds including varieties and hybrids,
8. On the Place and Country of Origin of the Seeds
9. On any Seed Treatment carried out
10. Certificate of origin issued by the chamber of commerce of country of export
11. Packing List and the Bill of Lading

12. Seeds must be securely packaged to prevent spillage in transit. Every seed container must bear the information on the crop, variety and seed treatment, if any, name and address of the supplier and lot number.
13. On the arrival of the consignment at the port of entry, the importer must inform the details of import to:
14. The Officer-in-Charge of Seed Certification Service,
15. Plant Quarantine Officer at the Port of Entry
16. At the Port of Entry, the consignment shall be inspected by a Plant Quarantine Officer and / or a Representative from the National Plant Quarantine Service Department of Agriculture, if deemed necessary by the Plant Quarantine Officer, the consignment shall be subjected to treatment or other suitable disposal.
17. Entry to Sri Lanka may be denied for Consignments of Seeds which do not confirm to labeling requirements; which have been imported without required certificate or which, in the opinion of the Plant Quarantine Officer, carry a dangerous pest, disease or weed.

1. Issuance of Phyto-Sanitary certificate

The exporter should apply to the concerned notified Phytosanitary certificate issuing authority for obtaining the Phytosanitary Certificate for each consignment prior to export through online Plant Quarantine Information System (PQIS). Phytosanitary Certificates will be issued within one or two working days except those requiring Fumigation Certificate which will be issued after 3 working days from the date of submission of request.

2. Phytosanitary inspection procedures

The exporter shall provide logistic support to the Plant Quarantine (PQ) officials for Phytosanitary inspection of consignments. The PQ inspection shall be carried out only at registered warehouses. The inspector of plant quarantine will conduct inspection of the consignment as per inspection, certification and sampling procedure to ensure freedom from pests of concern to the importing country. The Table 10 has outlined the details of Sampling Methods of Chilli for Bagged Cargo and Bulk Cargo.

Table 10. Sampling methods to be practiced by the inspector of plant quarantine

Sl. No	Particulars of Lots and its Size	Number of Bags to be Sampled
I	For Bagged Cargo	
01	Upto 100 Bags	20
02	101 to 300 Bags	32
03	301 to 500 Bags	50
04	501 to 1000 Bags	80
05	1001 and Above	125
II	For Bulk Cargo	
07	Upto 300 Tonnes	20
08	301 – 1000 Tonnes	30
09	1001 and Above	100

Source: Government of India, 2016

Table 10 revealed that the Plant Quarantine Officials should conduct sampling for testing the consignment for its impurities and the presence of Aflatoxin. Different lot size of the consignment commands different size of the samples as prescribed by the Government of India in its report on Standard Operating Procedures for Export of Dried Chilli. It has inferred that as the size of the lot increased, the number of samples is also correspondingly increased in respect of both Bulk cargo and Bagged Cargo items. The dried Chilli consignment has to be fumigated as per the requirement of the importing country by the exporting agency duly approved by the Plant Quarantine Advisor or the Officer to ensure that the shipment is free from Khapra Beetle (*Trogoderma granarium*) and other storage pests [4]. The Phytosanitary Certificate should be issued as per the model format prescribed by the International Plant Quarantine Convention (IPPC) with additional declarations as per the requirements of the importing destination.

3. Aflatoxin standards and levels in the sample of spices

India is the largest producer of Spices and exporter of spices plans to increase the export more than double the quantity and in value terms of spices in five year terms by persuading the importers to ease the trade barriers and integrate the value chain from planting to shipping of the produce.

If regulatory challenges are taken care of in a procedural manner, exports can easily be increased to three times in a period of five years [5]. For that one of the important standard to be monitored in the samples are Aflatoxin levels. Different countries have prescribed different Aflatoxin levels and the details are analyzed and the results are presented in Table 11.

Table 11. Permitted levels of Aflatoxin in the spices

Sl. No	Name of the Country	Permitted Levels of Aflatoxin
01	Middle East Countries	30 Microgram Per Kg
02	United States of America	20 Microgram per Kg
03	Canada	15 Microgram per Kg
04	European Union	10 Microgram per Kg

Source: The Economic Times (5), 2012

Table 11 revealed that the details of permitted levels of Aflatoxin in the Spice Produce exported from India. The Middle East Countries have permitted up to 30 Micrograms of Aflatoxin in one kg sample which is equivalent of one-billionth of a Kg. whereas, these standards differ from country to country. The United States of America has permitted only 20 Microgram of Aflatoxin per kg of the sample of spice followed by 15 Micrograms permitted by Canada and only 10 Microgram was the permitted level of Aflatoxin per kg of spice sample in respect of European union and hence the exporters should maintain the minimum level of Standards prescribed by the European Union so that the commodity can at best be transferred without any hassle. In this context, The WTO like organizations should come forward to fix the product standards uniformly to ease the export trade.

1. Issuance of health certificate

Export Inspection Council of India (EIC), the official certifying body of Government of India for exports was set up under the Export Act, 1963 which was enacted to ensure the quality of the export products through quality control and inspection. In order to facilitate the smooth functioning of the export from India in the present scenario of the international trade, and to certify quality of food commodities, a general voluntary scheme for issuance of Health Certificate has been developed. Health Certificate will be issued for consignments which conform to the requirements of the importing country as applicable. The copy of the test report of Food Product intended for export, issued by EIA labs / EIC approved labs, test report from the EIA approved unit, as per the importing countries standards or the National Standards as agreed between the importer and the exporter. The fee to be paid by the exporter to the concerned EIAs, are outlined in the Table 12.

Table 12. Fee structure for issuance of health certificate

Sl. No	Free On-Board (FOB) Value	Fee Charged in Rs
01	Up to Rs. 5 Lakhs Value of Chilli	1500.00
02	Above Rs. 5 Lakhs and Up to Rs. 10 Lakhs	2500.00
03	Above Rs. 10 Lakhs and Up to Rs. 25 Lakhs	5500.00
04	Above Rs. 25 Lakhs and Below Rs. 40 Lakhs	7500.00
05	Above Rs. 40 Lakhs	8000.00

Source: Spices Board [6], 2016

On payment of the requisite fee for the sampling and test report for issuance of health certificate for the consignment to be exported by the exporter, the samples will be drawn from one in ten consignments for testing as per the requirement of the importing country for maintaining data base exporter-wise. The health certificate will be issued only after satisfactory test reports. The cost of the test report was provided by the exporter or the processor of the produce as revealed in Table 12. In case of rejection or complaint received against the exporter for the consignments exported, from the importing country, the next 3 consecutive consignments will be tested in Export Inspection Agency Labs prior to issuance of health certificate. The sub office or the main office of the EIA shall issue the health certificate in the prescribed format which is available to the exporter in the Web Site of Export Inspection Agency. Once the health certificate issued, it is valid for a period of 90 days from the date of issuance of the certificate.

The fee charged is varying (6) between ₹1500 to ₹8000 based on the value of the consignment exported abroad. Based on the above norms, the process of exports of Chilli Spice to European Union member countries will be taken place through the following steps.

1. Submission of Online intimation for sampling
2. Drawal of sample from the consignments intended for export by the authorized sampling agency or Spices Board
3. Testing of the Sample in the labs for the presence of Aflatoxin and issue of report to the exporters
4. On receipt of the clear analytical report from the agency or the Spices Board, online filling of application to EIA for issue of Health Certificate
5. On receipt of Health Certificate from Export Inspection Agency, online intimation to Spices Board for seal removal and stuffing
6. Seal Removal and Stuffing of Cargo under the supervision of Sampling Agency / Spices Board.
7. Clearing of the consignment with the required documents including Spices Board's analytical report on Aflatoxin attached with Health Certificate issued by the Export Inspection Agency.

The exporter has to follow the above steps scrupulously for making safe landing of the produce in the soils abroad without any hassles.

3.3. Anti-Dumping and Countervailing Measures

Anti-Dumping (AD) is the situation that occurs when a foreign producer or manufacturer sell the goods or food items in the importing countries like United States or European Union at the price less than the prevailing market price, causing a glut in the market or injury to the local producer in the importing destination. AD cases are company specific; the duty calculated to bridge the gap back to a fair market price or value.

In respect of Chillies, there were no such cases as experienced by the traders or exporters. In certain cases, the authorities apply some innovative way to prolong the investigation under AD. A recent practice adopted by the European commission is an Example: The European commission has terminated AD investigation following the withdrawal of the complaint in two cases namely unbleached cotton fabrics from India and bed-linen from India during 1996. After two years, without concluding the investigation, started fresh investigations. It may be a matter of debate whether the European commission was within their rights to do so but the impact of these decisions is grave on exports of this item from the concerned countries. Countervailing duties (CVD) is the case which is established when a foreign Government provides assistance and subsidies, such as tax holidays to the manufacturers that exports goods to the importing destinations like United States or the European Union enabling the manufacturers to sell the goods cheaper than the domestic manufacturers. CVD cases are country specific and the duties are calculated to duplicate the value of the subsidy. This situation is also not visible in respect of Chilli Export to foreign destinations particularly from India. The WTO agreements on Anti-Dumping and countervailing duties permit the importing countries to impose full margin of dumping and subsidization as anti-dumping duty or countervailing duties but recommends levy of lesser amount as duty if such lesser amount is adequate to remove the injuries to the domestic industry.

3.4. Export Subsidies and Domestic Support Measures

The spices board has taken some efforts to promote the production and export of Spices in India by offering subsidies and sensitize the producers and exporters about the need to undertake post-harvest quality enhancement techniques. The Spices Board will be providing financial assistance to farmers for irrigation, land development activities, mechanization, replanting, soil conservation and organic farming of various spices. These details are analyzed and the results are presented in Table 13.

Table 13. Details of subsidies provided for spices production and export

Sl. No	Details of Subsidies	Purpose	Per Cent of Actual Cost	Provided by
01	Irrigation and Land Development	Pump sets, Sprinkler	25.00	Spices Board
		Water Storage Structure	50.00	Spices Board
01A	Irrigation and Land Development	Rainwater Harvesting	33.00	Spices Board
02	Transport Subsidy	Surface Transport	25.00 or Rs. 1000/ Ton	Spices Board
02A	Transport Subsidy	Marine Transport	Rs. 1000 / Ton	Spices Board

Source: Spices Board [7], 2015-16

Table 13 revealed that the Spices Board will provide financial assistance up to 25% of the actual cost for acquiring pump sets, sprinkler sets, equipment for gravity-fed irrigation system and up to 50% for water storage structure establishment. The farmers will also get funding up to 25% for soil conservation measures. Besides, the board will bear 33% of the actual cost limited to ₹12000 for construction of 200 cubic meter capacity tanks for rainwater harvesting measures in the farm lands. In addition to production subsidies, the exporter will be getting a transportation subsidy for the spice output to the tune of 25% of actual or the maximum of ₹1000 per ton of spices. The spices transportation subsidy should not exceed ₹15 Lakhs per beneficiary per annum for a maximum period of 3 years for any mode of transportation. Besides these initiatives, Spices Parks were also established in different states for promotion of Spices production and export. These details are analyzed and the results are presented in Table 14.

Table 14. Details of spices parks established in India

Sl. No	Location of Spices Park	Spices Covered	Status of Functioning
01	Chhindwara, Madhya Pradesh	Garlic and Chilli	Functioning
02	Puttady, Kerala	Pepper and Cardamom	Functioning
03	Jodhpur, Rajasthan	Cumin and Coriander	Functioning
04	Guna, Madhya Pradesh	Coriander	Functioning
05	Guntur, Andhra Pradesh	Chilli	Functioning
06	Sivagangai, Tamil Nadu	Turmeric and Chilli	Tasks Completed
07	Kota, Rajasthan	Cumin, Coriander	Tasks Completed
08	Rae Bareli, Uttar Pradesh	Mint	Tasks Completed

Spices Board, Annual Report, 2016-17

Table 14 revealed the details of Spice parks established for the promotion of production and export of spices. The Board has established crop specific parks in the major spices producing / market centers. A total of 281.61 lakhs has been spent during the year 2016-17 towards the maintenance of spices parks. In Tamil Nadu, Sivagangai District was chosen to establish the spices park for turmeric and Chilli and the tasks has been completed. The main purpose of establishment of Spices Park is to improve processing and value addition of spices. The spice parks are equipped with international standard infrastructure to facilitate the various operations starting from cleaning to the final stage of packaging of spices including value addition in order to get better prices in the global market for spices.

1. Production and Export Performance of Spices

Because of the establishment of Spices Parks in select state locations, the area and production of different spices found to be increased. These details are analyzed and the results are presented in Table 15.

Table 15. Area and production of major spices in India

Sl. No	Name of the Spices	Area (Ha) Under Spices (2014-15)	Production of Spices (2014-15) in Tonnes	Area (Ha) Under Spices (2015-16)	Production (2015-16) in Tonnes
01	Pepper	123900	70000	131790 (6.37)	48500
02	Chilli	766400	1631320	742950 (-) 3.06	1497440 (-) 8.21
03	Ginger	140940	755950	156910 (11.33)	1025110
04	Turmeric	188020	844470	183480 (-) 2.41	967060
05	Garlic	261950	1424770	295600 (12.85)	1603500
06	Coriander	552440	462270	624780 (13.09)	572990
07	Cumin	889760	485500	808230 (-) 9.16	503260
08	Fennel	38660	59740	76000 (96.59)	129350
09	Fenugreek	123340	130810	227960 (84.82)	248350
	Total	3085410	5864830	3247700 (5.26)	6595560 (12.46)

Source: Spices Board, 2016-17

Table 15 revealed the details of Area and Production of Major Spices in India. When comparing the area during the year 2014-15 and 2015-16, the area under total spices found to be increased only to the tune of 5.26%. The production figures in respect of total spices in India found to show only 12.46% increase during the year 2015-16 over the year 2014-15. Whereas, the area under Chilli during the year 2015-16 is found to show a decreasing trend over the year 2014-15.

The decrease in area was taken away by the Coriander, Fennel and Fenugreek whose area were found to be increased during the year 2015-16 which are respectively accounted for 13%; 96% and 85%. The production of Chilli also reduced during the year 2015-16. It might be mainly due to non-adoption of appropriate technology by the farmers. Though the Spices Park was also established in Tamil Nadu, it has not paid much dividend in respect of Chilli. However, the production performance of Red Chilli was assessed over a period of time by drawing time series data from 1988-89 to 2016-17 by using compound growth rate in respect of area, production and productivity of Chilli. These details are presented in Table 16.

Table 16. Compound growth rate of Red Chilli

Sl. No	Year	Area in Ha	Production in Tonnes	Productivity (Kg/Ha)
01	1988-89	805000	680400	845
02	1995-96	883700	809700	916
03	1999-2000	977530	1056000	1080
04	2005-2006	742200	1023128	1378
05	2010-11	792000	1223000	1544
06	2016-17	830770	1872010	2253
CAGR in Per Cent		(-) 0.483	3.131	3.614

Source of Data: Indiatat.com [8]

Table 16 revealed that the area under Red Chilli was found to decrease to the tune of 0.48% per annum. During the year 2005-06, India has witnessed a drastic reduction in area under Chillies to the tune of 2.35 lakhs ha. Later on, the area under Chilli found to be increased. The increase in area [8] between 2005-06 and 2016-17 might be due to the intervention of National Horticulture Mission focusing area expansion component for spice and vegetable crops. In respect of production of Chilli, it is found to be growing constantly and reached a peak after 2009-10. The Production was found to grow at the rate of 3.13% per annum. In respect of productivity of Chilli, the compound annual growth rate was arrived at 3.614 indicating that the productivity of Chilli is growing at the rate of 3.61% per annum. However, remarkable achievement in productivity is visible only during the period of 2016-17. It might be due to the practice of adoption of precision technologies at field. The steady growth in productivity is visible from 2005-06 because of the intervention of National Horticulture Mission.

Table 17. Details of export of Red Chilli from India to different nations

Sl. No	Name of the Country	Quantity Exported in Tonnes during 2006-07	Quantity Exported in Tonnes during 2016-17	% Change in a Decade
01	Malaysia	43625.400	28791.870	(-) 34.00
02	Sri Lanka	21822.400	51392.560	135.50
03	United States (USA)	13058.200	20792.36	59.23
04	United Arab Emirate	12622.600	38318.37	203.57
05	Indonesia	6488.500	33393.850	414.66
06	United Kingdom	2279.400	6829.830	199.63
07	South Africa	1738.400	2022.640	16.35
08	Saudi Arabia	806.100	2426.700	201.08
09	Singapore	1285.600	3277.360	154.93
10	Nepal	3264.100	8812.200	169.97
11	Bangladesh	28424.600	3 9685.520	39.62
12	Mexico	1894.700	13105.64	591.70
13	Russia	870.700	NA	(-) 100.00
14	Australia	697.800	1587.350	127.48
15	Vietnam	0000.000	70012.510	00.00
16	Thailand	626.900	60008.770	9472.30
17	Others	9512.800	19792.470	108.06
Total		149022.200	400250.000	168.58

NA: Not Available; (Source: India Stat, 2016-17)

The growth trend implied that the year 2002-03 found to be the year of lowest production and productivity of Chilli. From the year 2003-04 onwards, the production and productivity found to increase steadily with a fall during 2005-06 and later on a steady growth is visible.

The reason for the lowest production and productivity might be due to the poor rainfall during those periods. In this situation, the role of extension functionaries need to be made intensive on developing cropping schedule and the same may be prescribed to the farmers to enhance the production and productivity of Chilli particularly in the Chilli belt by motivating the farmers to practice proven technologies in an organic way considering the traceability aspects for export of Chilli. Under this production scenario, one should assess whether the production has been consumed locally or exported to different destinations are need to be analyzed and hence these details are analyzed and the results are presented in Table 17. Table 17 revealed the details of export of Red Chilli to different nations during the year 2006-07 and 2016-17. Presentation of data on Red Chilli export in a decade of time is to highlight the decadal change in the export among different nations. Few of the countries are so friendly to India in receiving the increased consignments of Red Chilli regularly. Whereas, very few nations have started reducing their demand note with regard to import of Red Chilli from India. It might be due to the area expansion took place under Red Chilli in their own country and productivity would have been enhanced to meet their demand or the respective country would have imported the Red Chilli from some other nations because of Price and quality advantage of Red Chilli.

India is exporting Red Chilli to more than 20 countries across the world. Among these, Vietnam, Thailand, Sri Lanka, Bangladesh and Indonesia are the five top most nations importing the Indian Red Chilli considerably. Their import quantity during the year 2016-17 was found to be 70012, 60008, 51393, 39685 and 33394 tonnes respectively. When one could compare the export data of 2016-17 with that of 2006-07, Vietnam is the only country has demanded the highest quantity of Red Chilli during the year 2016-17. Earlier the export data is not figured in respect of Vietnam revealed that the country is the new entry to the import of Red Chilli from India.

Thailand is the country which has imported very less quantity during the beginning of the decade (2006-07) and when we compare the data during the year 2016-17, the increase in the import is found to be 9472% over the year 2006-07. Whereas, the Sri Lanka has imported the Indian Chilli to the tune of around 51393 tonnes which is accounted for 135 per cent increase over the year 2006-07. The countries which are showing much interest in importing the Indian Red Chilli to their destination are Thailand, Mexico, Indonesia, United Arab Emirate, Saudi Arabia and United Kingdom. The percentage increase in the export of Red Chilli during the year 2016-17 is found to be greater than 200 per cent over the year 2006-07. Though Nepal is a small country, its import statistics in respect of Red Chilli is also appreciable. The percentage increase in the import of Red Chilli to their destination is arrived at 170% during the year 2016-17 over the year 2006-07. The overall increase in the Red Chilli export to different nations is accounted for 169%. Russia and Malaysia are the only two nations had shown disinterest in importing Red Chilli from India. The Trade Promotion Organization placed in these countries should find the reasons behind non acceptance of Red Chilli or denial of Red Chilli import to their destinations and an appropriate strategy should be taken by the Agricultural and Processed Food Products Export Development Authority (APEDA) on time to rejuvenate the trade ties with those destinations. Besides, whether the export is stable or not has to be decided during pre and post scenario of globalization of trade and hence these details are analyzed and the results are presented in Table 18.

Table 18. Details of instability in export of Chilli from India

Sl. No	Year	Instability Index in Per Cent			
		Quantity in Tonnes	Value (INR)	Value (USD)	Unit Value (USD)
01	1980-1994	125.72	114.24	112.38	43.19
02	1995-2017	37.07	31.06	33.29	29.05
03	1980-2017	81.36	74.56	74.83	35.69

Table 18 revealed that the export of Chilli found to be on the higher value in terms of both Indian Rupees and US dollars during pre-globalization period and however it could be found decreasing during the post globalization era. From the instability index one could understand that higher instability is visible during Pre-Globalization era and it has come down during the post globalization regime revealing that the stability is restored during the period. It might be due to the stringent food safety norms imposed by the importing destinations to protect their own farmers in their country. But the export quantity in a decade of time found to be generally increased and contributive to the spice economy.

3.5. Government procurement initiatives

The Government procurement practices and procedures vary among the states, between the states and the Central Government, and among different Ministries within the Central Government. Multiple procurement rules, guidelines and procedures issued by multiple bodies have resulted in problems with Transparency, Accountability, Competition, and Efficiency in Public Procurement. A World Bank report stated that there are over 150 different contract format used by the State Owned Public Sector Units, each with different qualification criteria, selection processes and financial requirements. The Government also provides preferences to Indian Micro, Small, and Medium Enterprises and to state owned enterprises. Besides these, the exported produce at delivery point faces some hurdles at the designated point of entry. Unwanted delay in processing and release of commodities found to be one of the principal issues according to the traders.

4. Conclusions and Policy Implications

Export process of Red Chilli to different destinations has to pass through product regulations imposed by each nation, phytosanitary issues and specification norms. Product wise specification revealed that the Aflatoxin content should be less than 10 micrograms per kg of the produce. Sampling fees for testing at plant quarantine is found to be varying between ₹1500 to ₹8000 based on number of samples. As the quantity of exportable product increases in its size, the number of samples to be taken for testing the produce is also increased. The production of spices in India was found to increase to the tune of 12.46% during the year 2015-16 and the export of spices was found to increase to the tune of 12.79% during the year 2016-17 showing that the production and export was in similar magnitude. Whereas, the export of Chilli alone to different destinations was found to increase to the tune of 169% indicating that the demand is ever increasing to the Chilli and its produce abroad. However, the instability analysis revealed that the trade was facing higher instability during pre-implementation of globalization and the same found to decrease during the post implementation of globalization. This decrease might be due to food safety norms enunciated by the importing destinations. However, the export of Chilli in a decade of time found to be increased and hence the Indian exporters and the traders involved in export has to contact the farmer clusters in producing the exportable product of Chilli further by making contractual arrangements with the producers following the traceability considerations.

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