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**GINGER DIRECT PROCUREMENT PROGRAMME OF
SYNTHITE INDUSTRIES LIMITED – A STUDY ON DIRECT
SOURCING**

by

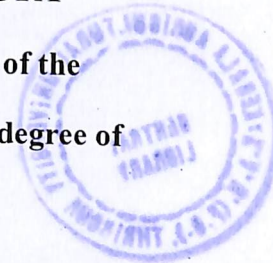
AMALRAJ K.R.

(2014-31-108)



MAJOR PROJECT REPORT

Submitted in partial fulfillment of the
requirement for the post graduate degree of



MBA IN AGRIBUSINESS MANAGEMENT

Faculty of Agriculture

Kerala Agricultural University



COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

VELLANIKKARA, THRISSUR- 680656

KERALA, INDIA


2016

Declaration

DECLARATION

I hereby declare that this project report entitled “GINGER DIRECT PROCUREMENT PROGRAMME OF SYNTHITE INDUSTRIES LIMITED – A STUDY ON DIRECT SOURCING” is a bonafide record of work done by me during the course of project work and that it has not previously formed the basis for the award to me for any degree/diploma, associateship, fellowship or other similar title of any other university or society.

Vellanikkara
18-08-2016

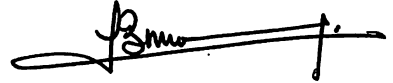

AMALRAJ K.R.
2014-31-108)

Certificates

CERTIFICATE

Certified that this project report “GINGER DIRECT PROCUREMENT PROGRAMME OF SYNTHITE INDUSTRIES LIMITED – A STUDY ON DIRECT SOURCING” is a record of project work done independently by Amalraj K.R. under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to him.

Vellanikkara
18-08-2016



Dr. Binoo P. Bonny
Associate Professor
Dept. of Agricultural Extension
College of Horticulture
Kerala Agricultural University
Vellanikkara
(Supervising Guide)

CERTIFICATE

We, the undersigned members of the advisory committee of Mr. Amalraj K.R., candidate for the degree of MBA in Agribusiness Management, agree that the project work entitled "GINGER DIRECT PROCUREMENT PROGRAMME OF SYNTHITE INDUSTRIES LIMITED – A STUDY ON DIRECT SOURCING" may be submitted by Mr. Amalraj K.R., in partial fulfilment of the requirement for the degree.



Dr. Bino P. Bonny
Associate Professor
Dept. of Agricultural Extension
College of Horticulture
Kerala Agricultural University
(Supervising Guide)



Dr. E.G. Ranjit Kumar
Director, MBA (ABM)
College of Co-operation, Banking & Management
Kerala Agricultural University
Vellanikkara



Dr. Jayasree Krishnankutty
Associate Professor
Dept. of Agricultural Extension
College of Horticulture
Kerala Agricultural University
(External Examiner)

REF: SIL/PROJ/026/16

Date: May 09, 2016

CERTIFICATE

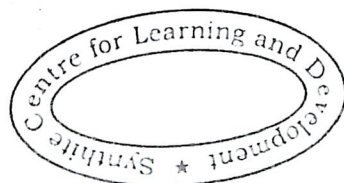
This is to certify that **Mr. Amalraj K.R**, pursuing MBA-Agri Business Management from College of Cooperation, Banking & Management, Kerala Agricultural University, Vellanikkara, Thrissur has completed his internship project with Synthite Industries Limited, Kadayiruppu on the topic **"Ginger direct procurement programme of Synthite Industries Limited - A study on direct sourcing"** from March 21, 2016 to May 09, 2016.

We wish **Mr. Amalraj** all success in future endeavors.

For Synthite Industries Limited,



Vineeth P Mathew
Sr. Manager- Learning & Development



Acknowledgement

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I would also use this opportunity to beg to pardon to all those who have ever been hurt, knowingly or unknowingly by my words and deeds.

For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

Amalraj K.R.

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Chapter - 1

Design of the study

Chapter - 1

DESIGN OF THE STUDY

1.1 Introduction

A spice is a seed, fruit, root, bark, berry, bud, or vegetable primarily used for flavoring, coloring or preserving food. India is known as the 'land of spices' because from the ancient days itself India is known for the spices trade. India is the largest producer, exporter and consumer of spices in the world. It is one of the major foreign exchange earners for India. The total production of spices in India during 2013-14 was 5833870 tonnes from an area of 31.45 lakhs hectares (Spices Board, 2015). India is the most sought destination for quality spices. U.S.A, Spain, Saudi Arabia, China, Europe etc. are the leading consumers of Indian spices. Because of the diverse climate - from tropical to sub-tropical to temperate-almost all spices can be grow in India. There are more than 100 spices cultivated in the world of which 52 are brought under the purview of Spices Board of India. Cardamom, chilli, ginger, pepper, turmeric are the leading spices cultivated in India and are widely used in medicine, religious rituals, cosmetics, food and beverages.

1.1.1 *Ginger : Indian scenario*

Ginger (*Zingiber officinale* Rosc.) is one of the earliest known oriental spices and is being cultivated in India for use as fresh vegetable and also as a dried spice. It is a herbaceous perennial belonging to plant family Zingiberaceae, native to south-eastern Asia. It is an important commercial crop grown for its aromatic rhizomes which is also valued for its medicinal properties. The major ginger producing countries are India, China, Nigeria, Indonesia, Bangladesh, Thailand, Philippines, Jamaica etc. It is also grown in Australia, Fiji, Brazil, Sierra Leone and Japan. United Kingdom, United States, Japan and Saudi Arabia import large quantities of ginger. It is marketed in different forms such as raw ginger, dry ginger, bleached dry ginger, ginger powder, ginger oil, ginger oleoresin, gingerale, ginger candy, ginger beer, brined ginger, ginger wine, ginger squash, ginger flakes etc.

India is the largest producer and exporter of ginger and ginger products in the world. The production of ginger in 2013-14 is 688000 tonnes from an area of 140000 hectares. Average

growth of index number of area of dried ginger from 2007-08 to 2013-14 is 110.3. Average growth of index number of production of dried ginger from 2007-08 to 2013-14 is 145.8. (Department of Agriculture & Cooperation, 2014) India is exporting ginger to USA, Bangladesh, Spain, UK, Morocco, Saudi Arabia. India exported 23300 metric tonnes of ginger worth Rs. 25614.27 lakhs during 201-14. Bangladesh is the largest consumer of Indian Ginger. They imports 6612.67 tonnes of ginger of value Rs.1762.78 lakhs (Spices Board, 2015).

Spice oleoresins represent the complete flavour profile of the spice. It contains volatile as well as nonvolatile constituents of spices. Oleoresins are used mainly as a flavouring agent in the food processing industry. They are more economical to use and having standardised quality of the equivalent ground spice. The pungent taste of ginger is due to the principle constituent 'oleoresin' which is a viscous dark brown liquid containing the active ingredient-gingerol. Ginger oleoresin is commercially known as 'gingerin' manufactured on commercial scale in India. It is obtained by extraction of dried ginger powder with suitable solvents like alcohol, acetone, or ether. It is a combination of volatile and non-volatile oils forming the pungent principle of ginger. India is exporting oleoresins of ginger, chilli, cardamom, turmeric, paprika etc. Synthite, Plant Lipids are among the leading oleoresin producing companies in India.

Earlier Kerala was the major producer of Ginger in India but the increased cost of production, lack of availability of land and labour made Keralites to start ginger cultivation in Karnataka where land is available in plenty. Lower cost of production was another reason for the shift of Kerala farmers to Karnataka. They first started in Kudak district and later moved to places like Hassan, Shimoga, Periyapatna, HD Kotta etc. Keralites taught Karnataka people also the cultivation practices of ginger which made them also to start ginger farming. This has helped Karnataka to become one of the major producers of ginger in India. Rigodi, Chukku maran, Mahima and Himachal are the main ginger varieties used in Karnataka. In Hassan district majority of the people are cultivating Rigodi variety because of its increased productivity over other varieties. The cultivated ginger is mainly used as vegetable. It is being traded to Tamil Nadu, Uttar Pradesh, Maharashtra, Orissa etc. But the increased cost of cultivation, fall in prices has affected ginger cultivation in the area now a days.

The total spice production of Karnataka during 2013-14 is 381280 tonnes from 216260 hectares of land. (Department of Agriculture & Cooperation, 2014). Karnataka is the fourth

leading producer of ginger in India. Karnataka was produced around 52400 tonnes of ginger from 190000 hectares and stands in the fourth position (Spices board, 2015). In 2013-14 India has exported 11415 tonnes of spice oils and oleoresins of value Rs.173325 lakhs. U.S.A is the largest importer of Indian spice oils and oleoresins. The demand of Indian spice oils and oleoresins are increasing every year (Spices board, 2015).

1.1.2 Synthite Industries Limited

Synthite Industries Limited is the world's largest producer of value added spices. It was started in 1972 at Kolencherry, Ernakulam in the name Synthite Industrial Chemicals. Later, shifted to extraction of spice oleoresins with technical assistance from Central Food Technology Research Institute, Mysore. The Company was later renamed as Synthite Industries Ltd. The group has six units now viz EEZEE SPICE, NatXtra, Neaox and Necol brands from Bio-ingredients, which come under B2B segment. Kitchen Treasures is their B2C brand and today, they account for more than 30% share in the global Oleoresin market. They are preparing to make new forays, into the world of food ingredients also. Performance, fairness, innovation, commitment, communication and team work are the values on which they are working. Their portfolio of about 500 products, include spices in raw, sterilized and powdered form, spice oleoresins, organic extracts, health ingredients, essential oils, natural food colours, floral concentrates, absolutes and resinodis from spices like cardamom, pepper, ginger, turmeric, nutmeg, chilli etc.

Synthite Industries Ltd is the leading manufacturer of oleoresins and extracts from spices. They produce oleoresins from dried ginger. Ginger oleoresin has widespread use as a flavoring agent in foods, beverages and medicines and have high demand from food and medicine manufactures. Recently Synthite has started a direct ginger procurement program. It procured ginger from the farmers, small shops and commission agents of Hassan district of Karnataka where large areas are under ginger cultivation. Direct procurement is the act of acquiring raw materials and goods for production in large quantities from a pool of suppliers at the best possible cost, quality and reliability. Originally procurement started as a way to integrate purchasing into supply chain management during a time when most large companies were struggling to manage their operational costs. Direct procurement helps in avoiding the intermediaries and sourcing best quality raw materials from the farmers by giving more value to them.

The present study was aimed at studying the ginger direct procurement programme of Synthite Industries Ltd and its constraints and benefits.

1.2. Statement of the problem

Ginger cultivation is the major source of livelihood of farmers of Hassan district of Karnataka. It is a major center of ginger production. The trade of ginger is handled by the intermediaries like small traders, agents, big traders etc. Synthite is procuring dried ginger from Hassan. Synthite is procuring dried ginger for their factory located at Harihar, Karnataka having 5 MT processing capacity. They needed 2000 tonnes of dried ginger for the production of 130 tonnes of oleoresins in a year. Earlier Synthite used to procure dried ginger through vendor procurement. In procurement from vendors Synthite experienced some difficulties like unavailability of raw materials at the required time, bargaining and charging high prices by the suppliers, delivery of bad quality materials etc.

To overcome these problems Synthite started the dried ginger direct procurement programme at Alur, Hassan district of Karnataka. It aimed to procure dried ginger directly from farmers, commission agents and small traders. Direct procurement aimed to offer farmers with more prices by avoiding the commissions and profits enjoyed by the intermediaries under vendor procurement and to reduce the cost of procurement.

This study aimed to look into the direct ginger procurement programme of Synthite Industries Ltd at Hassan and with the following specific objectives.

1.3 Objectives

1. Analysis of the direct procurement programme of ginger by Synthite Industries Ltd in terms of genesis, functions and activities
2. Value chain analysis of ginger under different procurement methods in use
3. To explore the constraints and benefits of the ginger direct procurement programme.

1.4 Methodology

1.4.1 The period of the study

The period of the study was during the months of March to May 2016.

1.4.2 Location of the study

The location selected for the study was Alur village of Hassan district Karnataka where ginger is largely grown and direct procurement center of Synthite is located. Alur is a taluk of Hassan district where major crops cultivated are Ginger, Chilly, Maize, Coconut, Paddy etc. Hassan taluk is accounting more than 40% of the total ginger production of Hassan district. Alur is just 12 km away from the district headquarters and main city Hassan. Proximity to the city is the major reason behind starting direct procurement center at Alur. Alur is in equal distances from major ginger grown areas like Belur, Arakalgud, Sakleshpur etc. There is a lot of ginger traders are also located at Alur.

Fig.1.1. Map of Hassan District



Table: 1.1 Hassan taluk wise production of Ginger 2014-15

Sl. No.	Name of the Taluk	Area (acre)	Production (MT)	Yield (per acre)	Value (lakhs)	Production (%)
1	Alur	1337.00	16044.00	12.00	4011.00	9.10
2	Arakalgud	2002.00	22022.00	11.00	5835.83	12.49
3	Arasikere	1468.00	13946.00	9.50	3416.77	7.91
4	Belur	1443.00	15151.00	10.50	3939.39	8.60
5	Channarayapatna	707.00	7423.00	10.50	1855.88	4.21
6	Hassan	5924.00	71088.00	12.00	18696.44	40.33
7	Holenarsipur	2050.00	22550.00	11.00	5412.00	12.79
8	Sakleshpur	805.00	8050.00	10.00	2133.25	4.57
	Total	15736.00	176275.00	11.20	45301.00	100

Source: Dept. of Horticulture Hassan

As per the Table 1.1 the total production of Ginger in Hassan district during 2014-15 was 176275 tonnes of value Rs.45301 lakhs from an area of 15736 acres. Among the 8 taluks Hassan taluk is the leading producer with 71088 tonnes from 5924 acres of land. Hassan taluk constitutes 40.33% of the total ginger production in the Hassan district. Alur taluk is standing in the fourth position with 16044 tonnes of production of value Rs.4011 lakhs from 1337 acre of land. Alur taluk contributes 9.10 percent to the total production of the Hassan district.

1.4.3 Sources of the data

The study was conducted using primary and secondary data. The primary data was collected through a sample survey of the ginger cultivators and traders of Hassan district involved in the procurement program through questionnaires. Secondary data used included records and information from office records, publications, research reports, newspapers, internet sources articles, published thesis, journals etc.

1.4.4 Sampling frame

Thirty respondents who were involved in selling ginger under the Synthite direct procurement program were randomly selected from the list of suppliers for the study. The sample included 20 ginger farmers cum commission agents and 10 small traders. The selected respondents were interviewed using the schedule prepared for the purpose.

1.4.5 Data analysis

Appropriate statistical tools like percentage, mean, value chain mapping tools and SWOC analysis were used for data analysis.

1.4.5.1. Satisfaction Level of the respondents

Satisfaction Level of the respondents about the Synthite ginger direct procurement program collected on a five point scale. The five categories of responses were 'strongly agree', 'agree', 'no opinion', 'disagree' and 'strongly disagree' and the respective scores were 5,4,3,2 and 1. The cumulative score on each statement was computed by using the following formula:

$$\frac{(f1 \times 5) + (f2 \times 4) + (f3 \times 3) + (f4 \times 2) + (f1 \times 1)}{N \times 5} \times 100$$

$$N \times 5$$

Where f_1, f_2, \dots -number of respondents in each category of response and

N - Total number of respondents

$$\text{Overall Satisfaction index} = \left[\frac{\text{Sum total of the scores of all statements}}{\text{Maximum score} * \text{Number of statements} * N} \right] * 100$$

The responses obtained were interpreted as follows:

Index	Zone
80-100	Fairly satisfied
60-80	Satisfied
40-60	No specific opinion
20-40	Dissatisfied
0-20	Completely dissatisfied

1.5 Observations

1. Socio-economic profile of the respondents
2. Cost of procurement in vendor procurement
3. Product flow and processes of the programme
4. Quality standards for procurement
5. Ginger varieties used by farmers
6. Average yield
7. Cost of cultivation
8. Quantity of ginger procured over the months
9. Value chains under different procurement methods
10. Procurement prices over the months
11. Satisfaction of beneficiaries of the direct procurement programme
12. Constraints faced by the farmers in ginger cultivation

1.6 Scope of the study

The study helps to examine the effectiveness of the ginger direct sourcing programme of the Synthite Industries Ltd at Alur. It also helps to suggest measures for improving direct procurement from the farmers by eliminating intermediaries. It enables the company to cut the costs in procurement and ensure better values to the farmers.

1.7 Limitations of the study

The respondents might not have given reliable information because of fear to the local players. The language was a problem to communicate to the respondents because the native language of Alur is Kannada.

1.8 Chapterisation

The study has been designed into the following chapters:

Chapter I	--	Design of the Study
Chapter II	--	Review of literature
Chapter III	--	Industry profile
Chapter IV	--	Synthite Industries Limited – A Profile
Chapter V	--	Ginger Direct Procurement Programme – An Analysis
Chapter VI	--	Summary of Findings and Suggestions

Chapter - 2

Review of literature

Chapter - 2

REVIEW OF LITERATURE

2.1 Introduction

Review of literature is the critical examination of existing studies for making frame work for the new studies. The literature available on value chain management, ginger, oleoresins and direct procurement program includes books, papers, newspaper reports, reports by individuals, institutions, committees are reviewed in this chapter.

2.2 Value chain management

Charles et.al (1998) proposed the idea that the value chain, the value network are three distant generic value configuration model required to understand and analyze firm level value creation logic across a broad range of industries and firms. The value chain analysis is a method for decomposing the firm into strategically important activities and understanding their impact on cost and value. While the long linked technology delivers value by transforming input into products, the intensive technology delivers value by resolving unique customer problems, and the mediating technology delivers value by enabling direct and indirect exchange between customers. With the identification of alternative value creation technologies, value chain analysis is both sharpened and generalized into what they proposed as a value configuration analysis approach and to the diagnosis of competitive advantage. With the long linked technology and the corresponding value chain configuration model as benchmark, the paper reviews the distinctive logic and development models of the value shop and value network in terms of primary activity categories, drivers of the cost and value, and strategic positioning option.

Hobbs (2000) defines the value chain as on particular form of the supply chain. In this approach, the supply chain refers to the entire vertical chain of activities. From production on the farm, through processing, distribution and retailing to the consumer in other word the entire spectrum, from gate to plate, regardless of how it is organized or how it is function. Hobbs definition of supply chain is thus similar to Kaplinsky and Morris definition of value chain.

Hobbs et al defines the value chain as a vertical alliance or strategic network between a numbers of independent business organization within a supply chain.

2.3 Spices – Ginger

The Report of the Spice Enquiry Committee (1953) stated the immense value of spices in building the national economy and observed lack of organized efforts to improve their production and marketing as being done for other plantation crops like tea, coffee, rubber etc. The report also stressed the need for better planning, research and coordinated efforts for the proper development of all the spices. It reveals that the village merchants who deal in ginger realise about 80% of the value of the market price, The produce changes hands at least three or four times and with each change the margin of the producer is reduced. The number of links in the chain could be reduced if the sale is attempted by the producers themselves on a cooperative basis.

Lakshmanchar (1982) observed the marketing channels of ginger in India. It has been estimated that more than 70% of the produce is assembled by the village merchants and the rest is sold by the producers directly to the wholesalers at the assembling centers through commission agents.

Radha *et.al* (1997) described the normal channels of distribution of agricultural as well as industrial goods. In their opinion, the specific peculiarities of agricultural commodities make their distribution more difficult and so the normal channels followed for industrial products cannot be fully resorted for agricultural commodities. Multiplicity of intermediaries, loss of weight and volume in transit, lack of organization, forced village sales, perishable nature of the produces, multiplicity of market charges, adulteration and market malpractices, inadequate storage, transportation and communication facilities etc are noted as the other major problems in agricultural marketing.

Arya (2008) opined that an efficient, proper and reliable marketing system by itself can stipulate production of ginger while lack of it would lessen subdue and shrink the input of any number of developmental efforts. The high production potential of the ginger crop affects the orderly marketing in the absence of needed infrastructures such as assembling, processing, grading, transporting, storing, risk bearing and advancing credit.

Devadas (2010) reported that the farmers are very dissatisfied in the existing supply chain mechanism of Ginger. The dissatisfaction is mostly from high cost of cultivation is per marketing facilities. Absence of value addition, unavailability of skilled labour and high incidence of pests and diseases added to farmer dissatisfaction in ginger cultivation.

A Report on Hindu (2014) observed that farmers in Wayanad district are returning to Karnataka's ginger fields because of hike in prices which is giving ample inducement to rent swathes of land in the neighbouring district and try their luck again.

2.4 Ginger oleoresin

Meena (1988) studied the problems and prospects of exports of value added spices in general and spice oils and oleoresins in particular, in her project report named 'Problems and prospects of Exports of Spices Oils and Oleoresins From India'. The study has covered the processing of spices, oils, major market trends in *expro* problems, export incentives, review of the export volume of producing countries, and distribution problems of value added spices. The study gives some valuable indications about the future possibilities of spices relating to processing and value additions.

Daryono (2009) reported that use of ginger was growing commercially in processing that use appropriate technology. Refining of oil and ginger oleoresin from ginger rhizome growing to be a raw material in pharmaceutical companies manufactures drugs. Components of chemical compounds contained in ginger consists of oil evaporated, oil does not evaporate and starch.

Indian School of Business (2012) reported that Global oleoresin production (including all kinds of spices) in 2010-11 was about 9000 MT3 with Synthite's share at 35%. Spices Board of India estimated Indian exports of oils and oleoresins at 7,600 MT in 2010-114 with a compounded annual growth rate of 4.8% over the previous five years. It is estimated the pepper oleoresin market at 2000 MT with an annual growth rate of 3% - 4%. India had a virtual monopoly on the pepper oleoresin market, with Synthite supplying about 25% of the global demand.

Krishnakumar (2013) reported that India dominates the global market for spice oleoresin, which is in big demand from processed food and fragrance industries that now mostly prefer

natural colouring and flavouring agents to artificial ones as consumers become increasingly health conscious. India controls 60% of the 13,500-tonne global spice oleoresins market even as China has emerged as a strong contender in paprika oleoresin, the most in-demand spice oil.

Market Insider (2014) described the importance of essential oil crop production and distillation to small farm income and employment is often overlooked or not appreciated against the importance traditionally accorded to the major food staples and commodity cash crops. IFEAT (the International Federation of Essential Oils and Aroma Trades), the body representing the global industry, is working hard to provide factual information on the contribution that this sector makes to local economies and employment, and has established a Socio-Economic sub-committee to commission reports on (initially) 12 products. The Global spice oleoresin market is \$ 1 billion. The global requirement of various oleoresins – paprika, chilly, turmeric, pepper, ginger, and cardamom is about 15000 tonnes. India with its favourable climatic and soil conditions for growing spices and semi-tropical herbs is in the forefront among the spice producing countries. The Indian spice oleoresin market is about Rs.600 crores. India accounts for 70% of the world oleoresin production with competition from China, US, Lanka, South Africa and Latin America. Brazil, China and India are the market leaders. Kochi in Kerala with its spice farms is the hub of oleoresin manufacturing.

2.5 Procurement of raw materials

Vermeulen et.al (2010) reported that a wide range of institutions are employed to procure raw commodities for the South African agro-processing sector and that companies are increasingly moving away from the open market as a source of supply for raw commodities, and are utilising contractual arrangements instead. According to the main findings, 78.5% of the total volume of fruit and vegetables procured by agribusiness companies for processing is based on some form of contracting arrangement. The balance is procured through a combination of the open market, own estates, agents and imports. It is only in the case of potatoes, onions, beans and peanuts that a stronger reliance on the spot market is evident. South African retailers source 70% to 100% of their fresh produce directly from farmers (usually through growing programme). The procurement of meat, poultry and eggs appears to favour vertical integration (and in some cases own production), medium- to long-term contracts and long-term informal supply arrangements with selected groups of farmers.

2.6 Conclusion

From the literature review conducted as part of the study, it shall be noted that only limited studies has been conducted on the procurement of spices by the agribusiness companies. So the study about the procurement of spices by a reputed firm like Synthite would be worth. The literature review explained above helped the study in understanding about the value chains, marketing channels of ginger and ginger oleoresin.

2.7 References

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Chapter - 3
Industry profile

Chapter - 3

INDUSTRY PROFILE

3.1 Introduction

The history and destiny of our country, perhaps the whole world were influenced unbelievably by the spices. India commands a formidable position in the world spice trade with the spices exports expected to touch US\$3 billion by 2016-17. In value terms, India's spice market grew an average 8.8 percent annually between 2009-10 and 2014-15 (IBEF, 2014). It is home for over 52 spices under the Spices Board Act 1986. Pepper, cardamom, nutmeg, clove, ginger, turmeric etc. are the main spices produced in India.

Today, Indian spices are the most sought after globally because of its peculiar aroma, texture, taste and medicinal value. At present, production is around 3.2 million tonnes of different spices valued at approximately 4 billion US \$, and holds a prominent position in world spice production. Because of the varying climates - from tropical to sub-tropical to temperate - almost all spices grow splendidly in India. In reality almost all the states and union territories of India grow one or the other spices. However 109 spices are notified in the ISO list (Spices board, 2016). Trade of spices and value added products of it are a major source of foreign exchange earner for India. This chapter discusses about spices industry, ginger industry and oleoresin industry.

3.1.1 Spice wise Area and Production

Table 3.1 shows the spice wise area and production in India from the years 2011-12 to 2013-14.

Table 3.1 indicates that the total production of spices in India during 2013-14 was 5833870 tonnes from an area of 3145610 hectares. Chilli is the largest produced spice in India with 1376400 tonnes of production. Ginger production was 683160 tonnes from 138200 ha. It accounts for 11.71% of the total spice production in India during 2013-14.

Table 3.1: Spice wise Area and Production

Spices	2011-12		2012-13		2013- 14 (Est)	
	Area	Prodn.	Area	Prodn.	Area	Prodn.
Pepper	201381	43000	122500	65000	122400	37000
Cardamom(S)	71285	15000	69870	14000	69970	16000
Cardamom(L)	26460	3860	26060	4145	26060	4465
Chilli	793921	1448215	787530	1378400	791930	1376400
Ginger	125374	924417	134430	669350	138200	683160
Turmeric	251824	1398862	194330	986690	207570	1092630
Coriander	362148	428687	531070	503240	516070	496240
Cumin	843401	462645	593980	394330	690080	445030
Celery	4176	5271	4070	5510	4070	5510
Fennel	92446	144112	99610	142940	94070	135930
Fenugreek	96304	121775	93110	112870	90500	110530
Ajwan	45693	28050	39690	26620	39260	26610
Dill seed	20489	24448	21900	23632	21900	23632
Garlic	171800	898438	247430	1260210	238760	1221380
Tamarind	52788	182089	58300	189980	58720	191750
Clove	2100	1035	2060	1060	2060	1060
Nutmeg	18407	12138	18730	12730	18730	12730
Grand total including others	3541804	6324920	3172468	5801114	3145610	5833870

Source: Spices board

*Area in ha, Production in tonnes

3.1.2 Major state wise area and production of spices in India

The major state wise area and production of spices in India is depicted in the table 3.2

As indicated by the Table 3.2 the estimated total production of spices in India during 2013-14 was 5833870 tonnes from an area of 3145610 hectares. Gujarat is the top producer of spices in India with 848480 tonnes of production from 541810 hectares. Karnataka's estimated production was 333822.3 tonnes from the area of 191772 hectares. Karnataka contributes about 5.72% of the total spice production in India.

Table 3.2: Major state wise area and production of spices in India

States	2011-12		2012-13		2013-14(Est)	
	Area	Prod.	Area	Prod.	Area	Prod.
Andhra Pradesh	366281	1370759	298288	1246693	169660	775820
Telangana	-	-	-	-	134170	551470
Gujarat	542414	882141	551665	882141	541810	848480
Rajasthan	973493	950876	720645	860889	821504	674832
Karnataka	211462	423333	213750	370070	191772	333822.3
Tamil Nadu	162225	466448	124380	279674	165995	554509
Uttar Pradesh	61151	227031	60173	212305	61656	244022
West Bengal	115154	214665	97555	207662	97555	207720
Odisha	281610	530170	123924	181500	123324	181500
Kerala	170947	13541	166353	119689	166948	114049
Maharashtra	65515	357821	120760	109040	120760	109040
Total (Incl. Others)	3541804	6324920	3172468	5801114	3145610	5833870

Source: Spices board

3.1.3 Major item/country-wise export of spices from India

The major item or country wise export of spices from India is shown in the Table 3.3

Table 3.3 shows that India has exported 817250 tonnes of spices of value Rs. 1376274.36 lakhs during 2013-14. Chilli was the most exported spice. During 2013-14 India has exported 312500 tonnes of chilli of value 272227 lakhs. The export of spices from India is showing an increasing trend. The quantity of spices exported during 2011-12 was 575270 tonnes. It has increased by 26% in 2012-13 and reached 726613 tonnes and the value earned was also increased by 24% from Rs.978342 lakhs to Rs.1211276 lakhs. During 2013-14 the quantity increased by 12% to 817250 tonnes and the value earned also increased by 14% to Rs.137627436 lakhs.

Table 3.3: Major item/country-wise export of spices from India

Major item/country-wise export of spices from India (qty in tonnes; value in Rs.lakhs)						
	2011 – 12		2012-13		2013-14	
Spices	Quantity	Value	Quantity	Value	Quantity	Value
Pepper	26699.7	87813.4	15363	63810.3	21250	94002.3
Cardamom(small)	4649.71	36322.3	2371.59	21215	3600	28380.9
Cardamom(large)	934.91	6829.99	1217.22	6254.63	1110	7969.15
Chilli	241000	214408	301000	238061	312500	272227
Ginger	21550.2	20419.9	22207.5	18725.2	23300	25614.3
Turmeric	79499.8	73434.4	88513	55487.7	77500	66675.9
Coriander	28100	16401.8	35902.1	20182.6	45750	37185.7
Cumin	45499.7	64442	85601.9	115307	121500	160006
Celery	3650.44	2340.06	5171.06	2977.31	5600	3661.48
Fennel	8099.99	7209.22	13810.9	10466.1	17300	16001.4
Fenugreek	21800.4	7275.18	29622.2	10488.1	35575	13378.4
Garlic	2199.77	1415.76	22872.4	6868.12	25650	8387.05
Nutmeg & mace	3620.41	24097.5	3230.88	22591.9	4450	26285.6
Curry powder /mixture	17000.3	25208.3	17436.5	27515.7	23750	40132
Spice oils & oleoresins	7265	130438	9515.44	155888	11415	173325
Mint products	14749.9	222372	20039.2	394050	24500	343042
Grand total	575270	978342	726613	1211276	817250	1376274.36

Source: Spices board

3.2 Ginger

Ginger (*Zingiber officinale* Rosc.) is an important commercial crop grown for its aromatic rhizomes which is used both as a spice and a medicine. Ginger of commerce is the dried rhizome. The various value added forms of ginger are raw ginger, dry ginger, bleached dry ginger, ginger powder, ginger oil, ginger oleoresin, gingerale, ginger candy, ginger beer, brined ginger, ginger wine, ginger squash, ginger flakes etc. Ginger is the rhizome of *Zingiber officinale* Rosc., a herbaceous perennial belonging to Zingiberaceae, and is believed to be native of south-eastern Asia. It is propagated through rhizomes. The rhizomes put forth erect, leafy stems, 30-90 cm in height. Ginger is commonly used as a cooking spice and a medicinal plant throughout the world. The ginger plant has a long history of cultivation, known to have originated in Asia and then spread to India, Southeast Asia, West Africa, and the Caribbean. Ginger products, such as essential oil and oleoresin, are internationally commercialized for use in food and pharmaceutical processing.

3.2.1 India Position in Production of Ginger among the Asian Countries (2013)

India's position in production of ginger among the Asian countries and World are depicted in the Table 3.4 as follows.

Table 3.4: India position in production of ginger among the Asian countries (2013)

Rank	Top 10 Countries	Production (in tonnes)
1	India	683000
2	China	425000
3	Nepal	235033
4	Indonesia	232669
5	Thailand	140000
6	Bangladesh	69000
	Other Asian Countries	17817
	All Asian Countries	1937645
	World	2140451

Source: Food and Agriculture Organization (FAO)

From the Table 3.4 it can be understood that India is the largest producer and exporter of ginger in the world. India's ginger production during 2013 was 683000 tonnes and the global production was 2140451 tonnes. The total production of ginger by all the Asian countries was 1937645 tonnes. India accounts for 31.91% of the total global ginger production and 35.25% in the total ginger production of Asia.

3.2.2 Area, Production and Yield of Ginger in India

Following Table 3.5 displays the area, production and yield of ginger in India from the year 2006 -07 to 2015-16.

Table 3.5: Area, production and yield of ginger in India

Years	Area In '000 ha	Production In '000 tonnes	Yield MT/ha
2006-07	106.1	393.4	3.7
2007-08	104.1	382.6	3.7
2008-09	143.9	610.4	4.2
2009-10	142.1	679.3	4.8
2010-11	167.4	702.0	4.2
2011-12	155.1	755.6	4.9
2012-13	136.3	682.6	5.0
2013-14	132.6	655.1	4.9
2014-15	141.7	760.3	5.4
2015-16#	142	760.0	5.4

Note: #: 1st Advance Estimates.

Source: Ministry of Agriculture, Govt. of India.

The Table 3.5 shows that during 2014-15 the production of ginger was 760300 tonnes from 141700 ha of land area and the productivity was 5.4 tonnes from a ha. It is estimated that in 2015 - 16 the Ginger production will be 760000 tonnes from an area of 142000 ha and the productivity per ha will be 5.4 tonnes. It means the area of cultivation slightly will increase but the production will slightly decrease.

3.2.3 Selected State wise Area, Production and Productivity of Ginger in India

Table 3.6 shows the selected state wise area, production and productivity of ginger in India in the year 2012-13 to 2014-15 as follows.

Table 3.6: Selected State wise Area, Production and Productivity of Ginger in India

States/UTs	Area (In ' 000 hectare)			Production (In ' 000 MT)			Productivity (In MT/hectare)		
	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
Andaman and Nicobar Islands	0.20	0.20	0.20	1.90	1.90	1.90	8.70	8.70	8.70
Andhra Pradesh	2.30	0.40	0.40	20.00	1.40	1.20	8.60	3.80	2.80
Arunachal Pradesh	7.00	7.00	7.00	57.00	57.00	57.00	8.10	8.10	8.10
Assam	17.80	15.70	18.20	136.80	122.30	160.00	7.70	7.80	8.80
Bihar	0.60	0.60	0.60	0.80	0.80	0.80	1.50	1.50	1.50
Chhattisgarh	1.90	1.60	1.70	2.30	1.80	2.10	1.20	1.10	1.20
Gujarat	4.40	4.40	5.90	70.70	70.70	118.20	16.10	16.10	20.10
Haryana	0.50	0.50	0.50	5.70	5.70	5.70	12.60	12.60	12.60
Himachal Pradesh	2.10	3.20	2.30	3.70	7.60	15.80	1.80	2.40	6.9
Jammu and Kashmir	-	-	-	-	-	-	1.30	1.30	1.30
Jharkhand	-	15.70	-	-	50.10	-	-	3.20	-
Karnataka	16.50	4.40	19.00	57.80	21.30	52.40	3.50	4.80	2.80
Kerala	6.40	9.00	4.80	33.80	15.00	23.00	5.30	1.70	4.80
Lakshadweep	-	-	-	-	-	-	-	-	-

Madhya Pradesh	9.00	1.10	10.70	15.00	1.00	20.70	1.70	1.00	1.90
Maharashtra	1.10	9.60	1.10	1.00	63.00	1.00	1.00	6.50	1.00
Manipur	2.40	7.30	2.40	3.80	28.40	3.80	1.60	3.90	1.60
Meghalaya	9.40	5.30	9.60	56.80	36.00	63.00	6.00	6.80	6.50
Mizoram	7.30	15.80	7.70	28.40	35.00	31.20	3.90	2.20	4.10
Nagaland	5.30	-	5.30	36.00	-	36.00	6.80	-	6.80
Odisha	15.80	-	15.80	35.00	-	35.00	2.20	-	2.20
Punjab	-	-	-	-	-	-	-	-	-
Rajasthan	0.20	0.10	0.10	0.30	0.30	0.20	1.90	2.10	1.90
Sikkim	9.30	9.30	9.30	51.60	52.10	52.10	5.60	5.60	5.60
Tamil Nadu	0.30	0.70	0.30	4.10	7.00	2.10	12.40	9.60	7.10
Telangana	-	1.80	2.20	-	12.70	16.50	-	7.20	7.60
Tripura	1.80	1.80	1.80	7.60	7.60	7.60	4.20	4.20	4.20
Uttar Pradesh	0.80	0.80	0.90	4.00	4.20	4.40	4.90	5.10	4.60
Uttarakhand	2.40	2.40	2.40	23.40	23.40	23.40	9.90	9.90	9.90
West Bengal	11.50	11.50	11.50	25.00	25.00	25.00	2.20	2.20	2.20
India	136.3	132.60	141.70	682.60	655.10	760.30	5.00	4.90	5.40
	0								

Source: Spices Board, India

As per Table 3.6 during the year 2014-15 Assam was the top producer of ginger in India which contributed about 21.04% of the total Indian ginger production of 760300 tonnes. They produced around 160000 tonnes of ginger from 18200 hectares. The productivity per ha was 8.80 tonnes. Karnataka was produced around 52400 tonnes of ginger from 190000 ha and stands in the fourth position with 7% of the total production. Their productivity was only 2.80 tonnes per ha.

3.2.4 Ginger Varieties cultivated in Karnataka

There are mainly four varieties of ginger is being cultivated in Karnataka. The varieties and its productivities are showed in the table 3.7 as follows.

Table 3.7: Ginger varieties cultivating in Karnataka and its productivities

Variety	Productivity kg/ha
Rigodi	45000
Chukkumaran	18000
Mahima	27000
Himachal	30000

Source: Dept. of Horticulture, Hassan

In the Table 3.7 it is understood that the main ginger varieties cultivating in Karnataka are Rigodi, Chukkumaran, Mahima and Himachal. Among this Rigodi variety is having the highest productivity per ha (45000 kg). Himachal yields 30000 kg per ha. 27000 kg per ha is the productivity of the Mahima variety of ginger. Chukkumaran produces only 18000 kg per ha.

3.2.5 Cultivation Practices

Ginger is a ten month crop starts its cultivation practices in the months December – January. The first activity is the land preparation by ploughing the land completely three times and will be kept for drying the soil completely. After that seeds for planting are being selected, bought and sown in the months February and March. Irrigation starts immediately after the planting and appropriate manures are given. If any diseases are found appropriate fertilizers or pesticides should be given. Ginger becomes mature within ten months and can be harvested from the month November. It becomes full mature in 17 months and can be harvested up to that. At that time the oleoresin yield is in the maximum.

3.2.6 Uses of Ginger

The various uses of ginger are

As food: Ginger is mainly used for seasoning food to give an agreeable flavour and aroma (piquancy or tang) to otherwise dull, monotonous and insipid food. Ginger is a well-known appetizer and is considered essential in the culinary art all world over. The aroma of ginger is pleasant, spice and flavour penetrating and slightly biting due to antiseptic and pungent compounds present in it, which makes it indispensable in the manufacture of a number of food products like ginger bread, confectionery, ginger ale, curry powder, certain curried meats, table sauces, in pickling and in the manufacture of certain soft drinks like cordials, ginger cocktails, carbonated drinks, bitters, etc. It also possesses anti-oxidant properties. It stimulates the appetite and increase the flow of gastric juices and are accordingly called 'adjuncts'; camouflage the unpleasant taste of many dried meats; and increase the rate of perspiration thus producing cooling effect on the body. Ginger is also used for the manufacture of ginger oil, oleoresin, essence and tincture (Arya, 2008).

Used in vegetables: Ginger in fresh or dry form is used in all the vegetables and other preparation to makes it tastier.

As a salad: Immature fresh ginger after careful peeling/scraping is also consumed along with other salad by cutting small thin slices.

As spices: Ginger is valued for its spicy properties. Ginger as product of plant origin is specifically used as spices. As a spice, it is extensively used in preparation of different types of condiments and in cooking vegetables. Spice and ground ginger is a constituent of curry powder, mincemeat spice and other flavouring and seasoning mixtures.

Ginger candy and preserve: Ginger preserve is used mainly in confectionery. Chocolate manufacturers utilize the preserve for enrobing. It is also used in jams and marmalades (Arya, 2008).

Use in Pickling: Fresh ginger is an ingredient in the preparation of various pickles, soups, sauces etc.

Source of essential oils: The pungent principle / essence in ginger is due to gingerols, zingerine, and shogaols which are used for different uses like as flavourant, pharmaceutical uses, ayurvedic uses, used in beverages etc.

Alcoholic Beverages: A number of alcoholic beverages are prepared from ginger in foreign countries such as ginger brandy, ginger wine, ginger beer etc.

Medicinal properties: Ginger has many medicinal properties and it is useful in gastritis, dyspepsia, flatulence, and in cold and cough as an expectorant. Ginger is stimulant, carminative, and stomachic and therefore, extremely valuable in colic, vomiting, spasms and other painful affections of the stomach and the bowels (Arya, 2008).

Value added products: The various value added products prepared from ginger are ginger oil, oleoresin, candy, preserve, ginger powder, ginger brandy, ginger beer, ginger wine, medicinal beverages etc.

3.3 Oleoresins

Spice oleoresins represent the complete flavour profile of the spice. It contains the volatile as well as nonvolatile constituents of spices. Oleoresins can be defined as the true essence of the spices and can replace whole/ground spices without impairing any flavour and aroma characteristic. Oleoresins are used mainly as a flavouring agent in the food processing industry. They are more economical to use, consistent quality and cleaner than the equivalent ground spices. Oleoresins provide flavour profiles characteristic of the ground spice or herb with a more rapid flavour release. Oleoresins are obtained from spices by extraction with a non-aqueous solvent followed by removal of the solvent by evaporation. Spice oleoresins guarantee superior quality of flavour and aroma.

They are complete and balanced, consistent and standardised. They ensure storage stability in the final product and are free from contamination. Custom made blends are also offered to suit the specific requirement of the buyer. Spice oleoresins are mainly used in processed meat, fish and vegetables, soups, sauces, chutneys and dressings, cheeses and other dairy products, baked foods, confectionery, snacks and beverages.

India enjoys the distinction of being the single largest supplier of spice oleoresins to the world. Instead of exporting raw spices, it is advisable to export value-added products. India is exporting oleoresins of ginger, chilli, cardamom, turmeric, paprika etc.

3.3.1 Benefits of Oleoresins

Achieving efficient and consistent results using ground spices is a challenging task. Oleoresins can replace the original ground spice with a standardized taste and aroma that can be tailored as per the requirement of the product. They are economical, with easier quality control, and require lesser storage space. They have a longer shelf life, are cleaner (no bacterial contamination) and are a convenient substitute for ground spices.

3.3.2 Market potential

Oleoresins and spice oils have large domestic as well as export markets. They are consumed by a broad spectrum of manufacturers like confectionary, noodles, beverages, sauces, canned meat, soup powders, curries, poultry products and so on. Most of the end use industries are growing steadily and demand is bound to increase. With increasing preference for quality products, use of spices is rapidly replaced with oleoresins and spice oils. Exports of these processed products, instead of raw spices, would also result in considerable value addition.

3.3.3 Major item/country-wise export of spice oils & oleoresins from India

Table 3.8 shows the major item or country wise export of spice oils and oleoresins from India are as follows.

Table 3.8: Major item/country-wise export of spice oils & oleoresins from India

Major Country	2011 – 12		2012-13		2013-14	
	Quantity	Value	Quantity	Value	Quantity	Value
U.S.A	1679.02	31941.1	1988.83	36816.4	3143.14	48531.9
China	363.73	4191.25	1946.41	21036.3	1760.16	15449.6
Germany	765.07	14410.4	811.1	15602	607.87	11018
U.K	451.46	8784.18	443.2	8086.88	607.68	9332.47
Korea(south)	309.02	4879.77	343.46	4874.94	643.39	8530.61
Japan	128.47	6121.64	120.57	4851.04	125.62	5528.34
Hongkong	103.35	1847.42	146.3	2129.82	274.58	5487.7
Netherlands	129.98	2883.9	110.8	3048.43	275.08	5183.07
Indonesia	190.34	1909.7	467.73	4426.74	485.25	4497.09

South Africa	254.8	4160.31	247.1	4106.69	277.89	4065.14
Spain	251.7	2515.19	202	3451.53	427.13	3941.54
Thailand	312.88	3055.56	205.38	2963.11	357.9	3484.38
Total(incl.others)	7265	130438	9515.44	155888	11415	173325

*qty in tonnes; value in Rs.lakhs

Source: Spices Board

Table 3.8 reveals that in 2013-14 India has exported 11415 tonnes of spice oils and oleoresins of value Rs.173325 lakhs. U.S.A is the largest importer of Indian spice oils and oleoresins. In India during 2011-12 the export was 7265 tonnes has increased by 31% to Rs.9515.44 lakhs in 2012-13. The value of the export was increased by 20% from Rs.130438 lakhs during the same period. In 2013-14 the quantity exported increased by 20% and value increased by 11%.

3.4 Conclusion

India handles the lion share of the spice trade the world. The demand of value added products of spices are increasing rapidly in every year than the raw spices. The value added spices is economical and giving enhanced shelf life without losing the original properties of the ground spices.

Chapter – 4

Synthite Industries Limited – A profile

Chapter - 4

SYNTHITE INDUSTRIES LIMITED – A PROFILE

4.1 Introduction

Synthite Industries Limited (Synthite) is the world's largest producer of value added spices, supplying ingredients to the major food, fragrance and flavour houses. The company is based in Kolencherry, Ernakulam. Today, they account for more than 30% share in the global Oleoresin market and they are preparing to make new forays, set off on new expeditions into the world of food ingredients. The company was established in 1972 with 20 employees in the name Synthite Industrial Chemicals. It was founded by C.V. Jacob, who started the company after working in civil construction for two decades. Initially it produced industrial chemicals before shifting to oleoresins. Later, it shifted to extraction of spice oleoresins with technical assistance from Central Food Technology Research Institute, Mysore. The Company was later renamed as Synthite Industries Ltd. However, the technology developed was not yet mature, and it took several years of additional research and development by Synthite to make the technology viable. It took another four years before they convinced food producers that they could produce quality products on time.

Synthite's portfolio of about 500 products, include spices in raw, sterilized and powdered form, spice oleoresins, organic extracts, health ingredients, essential oils, natural food colours, floral concentrates, absolutes and resinodis from spices like cardamom, pepper, ginger, turmeric, nutmeg, chilli etc. It had manufacturing facilities in seven locations in India and two in China. Synthite sold its products in over 100 countries and had offices in U.S., China and Sri Lanka and warehouses in Rotterdam and Buffalo, U.S. The company also had interests in diverse fields including bio ingredients, hospitality, spices, farm technology, real estate, and wind energy. By 2008 Synthite had grown to 450 crore and 1200 employees, with a 2012 goal of 1,000 crore. The company achieved this goal, with a total of 2,000 employees. Now the company having vision 2020 to reach Rs.3000 crore turn over by 2020. The company only began selling directly to consumers in its native India in 2014. Some of its major clients include Nestle, Bacardi and Pepsi.

4.2 The story of the evolution of Synthite

Synthite started in 1972. In 1980 government of India recognized Synthite as an export house. They have launched Herbal Isolates (P) Ltd. for the manufacture of dehydrated green pepper, pepper in brine, sterilized spices and essential oils. They became the first Indian company in the food sector to obtain ISO 9002 certification from BSI UK.in 1994. In 2000 Synthite launched Synthite Exports Ltd. They have diversified into wind mill business in 2003 by setting up wind mills at Udumalpettu, Tamil Nadu. In 2007 they installed super critical CO2 extraction plant for solvent free extracts. Synthite went international by setting up establishments in US and China in 2010. In 2012 they commissioned their first overseas production facility in Xinjiang, China for the production of Paprika. The new innovations and developments in Synthite is going forward.

4.3 Company profile

Chairman : C.V Jacob

Managing Director : George Paul

Deputy Managing Director : Dr. Viju Jacob

Chief Operating Officer : K. Njana Vadivel

Address : Synthite Valley, Kadayiruppu Kolenchery, Kochi, Kerala 682311

: Phone: 0484 305 1200

4.4 Vision, Mission and Values

4.4.1 Vision

"By consistently delivering the ingredients of success for the most exciting food, health and fragrance solutions, we will be the partner of choice to our clients worldwide."

4.4.2 Mission

1. **Sustainable Growth:** Grow smart, grow fast, grow together.
2. **Innovation:** Operational excellence powered by innovation.
3. **Customer Service:** Cultivate customers, care more.
4. **Enhance Value:** For all stakeholders.
5. **Making it a great place to work:** Winning people through collaboration.

4.4.3 Values

Values are the bedrock of an organisation. They form the basis of the behavior of its members. At Synthite, they strive to find the perfect balance between individual and organizational values. As an organization, Synthite has always insisted on a strong sense of business ethics and moral values. They believe in motivating and encouraging, instead of conditioning or enforcing. And it is this value-system that defines the way they function, as an organization and as a family.

1. Performance

They are constantly looking to improve their performance and better the quality of life, by improving the quality of food. They are replacing synthetic additives, colours and flavourings with natural alternatives. This ensures better health for their consumers and a better world to live in.

2. Fairness

At Synthite, they have always given due credit to the value of fairness. And they have always expected and offered this quality in all their business transactions. Synthite has been consistent and principled in every relationship. Be it with their clients, their employees, or their stakeholders.

3. Innovation

Synthite believes that their technology combined with their acumen for innovation, has always helped them to address even the most challenging customer requirements. So, they strive to achieve the highest level of scientific excellence and then innovate further to enhance the value that it provides to their final consumers.

4. Commitment

They are accountable to the customers they serve, to the employees they work with, and to the environment in which they exist. Synthite honours its commitments to all of the above, and works symbiotically with them, pledging to give back more than what it takes.

5. Communication

At Synthite they believe open communication to be the driving force for upholding their core values at all levels for achieving their mission and realizing their vision.

6. Teamwork

As they moved up the ranks as an organization, their employees have moved up with them. This teamwork is the essence of their work culture.

4.5 Synthite Industries Ltd. - Divisions

The divisions of Synthite are as follows

4.5.1 Bio Ingredients

Synthite's Bio Ingredients division processes raw spices to extract oleoresins while retaining all their original characteristics.

4.5.2 Spices

The Spice Division located at Synthite Taste Park, a state-of-the art, ISO certified and HACCP compliant processing facility, manned by a team of well-trained personnel with stellar technical and scientific knowledge. This Division offers whole, powdered and even processed spices that meet global food safety standards. Synthite's range of powdered and sterilised spices conform to the stringent European Commission directives for microbial load, pesticide residues, aflatoxin and other contaminants.

4.5.3 Symega Savoury

SYMEGA's focus is to develop and manufacture savoury seasonings and ingredients for the food industry. Over this short span, they have created a delightful niche in the food industry providing innovative solutions to its ever increasing demands. Their products add relish to snack foods, noodles, soups, oats, marinades and other processed foods. A savoury powerhouse manufacturing savoury flavour seasonings and packaged savories.

4.5.4 Symega Flavours

Designing and producing sweet and savoury flavour solutions for the global food, beverage and pharmaceutical industries.

4.5.5 Herbal Isolates

The Green Pepper and Hydrolyzed Vegetable Proteins specialists. Herbal isolates is today a top resource for Pepper products such as Dehydrated Green Pepper (crushed and whole), Green Pepper in Brine, Red Pepper in Brine and a host of subsidiary products like Hydrolyzed Vegetable Proteins.

4.5.6 Farm Tech

At Synthite, they have integrated backwards. Farmtech, their raw material sustainability initiative, works closely with the local farmers and provides them full education and support. Farmtech maintains the farmer data and follows a coding system for their produce. This allows Synthite to extend their control over the quality of the raw ingredients and maintain complete traceability.

4.5.7 Realty

Synthite introduced Synthite Realty, to cater to the luxury homes and apartments seekers in Kerala. They started off in the realty business, in 1992, with the opening of the Riviera Retreat on the Thevara waterfront in Cochin.

4.5.8 Hospitality

Ramada Cochin and Riviera Suites, two waterfront properties, are the epitome of luxury sojourns in Cochin.

4.5.9 Wind Energy

As part of its value optimization strategy, Synthite exploits non-conventional energy as a power source for its manufacturing. Synthite is committed to promoting and using clean energy and has commissioned two windmill generators. These windmills are located in the high wind density area of Udumalpet, Tamil Nadu and the electricity generated is even coupled to the Tamil Nadu State electricity board distribution grid.

4.6 Synthites Products

Synthite's product portfolio includes industrial products, industrial services and consumer products.

4.6.1 Industrial Products

1. Oleoresins
2. Essential Oils
3. Lutein and Marigold
4. Green Spice Extracts
5. Herbal Extracts
6. Tea & Coffee Extracts
7. Oleoresins
8. Essential Oils
9. Lutein and Marigold
10. Green Spice Extracts
11. Herbal Extracts
12. Tea & Coffee Extracts
13. Granules & Beadlets
14. Encapsulated & Spray Dried
15. Supercritical CO2 Extracts
16. Resinoids
17. Phytochemicals
18. Health & Nutrition
19. Liquid Seasonings
20. Floral Extracts
21. Vanilla Extracts
22. Dried Fruit Extracts
23. Natural Colours
24. Natural Antioxidants
25. Natural Flavours
26. Roasted and Fried Flavours

4.6.2 Industrial Services

1. Analytic Solutions
2. Sensory Solutions
3. Application Solutions

4.6.3 Consumer Products

1. Sprig
2. Kitchen Treasures
3. NatXtra

4.7. Bio- Ingredients Division

The story of Synthite begins with the manufacturing of Oleoresin Black Pepper. Over the last forty years, Synthite has become the leader in the manufacturing of all spice Oleoresins. Bio-ingredients division is the largest division of Synthite.

Today, they are also a leading force in a variety of botanical extracts such as tea, coffee, vanilla and lutein. They process raw spices at their state-of-the-art plants and labs; where they extract Oleoresins retaining all the original characteristics such as flavour, colour and taste of the starting natural raw material. Some of these value-added products are unique to Synthite; which is why they are the global leaders in this line of business.

4.7.1 Bio ingredients division comprises of 9 manufacturing plants:

- Synthite Industries Ltd Kolenchery, Kerala
- Synthite Industries Ltd Pancode, Kerala
- Synthite Industries Ltd, Coimbatore, Tamilnadu
- Synthite Industries Ltd, Khammam, Andhra Pradesh
- Synthite Industries Ltd, Ongole, Andhra Pradesh
- Synthite (Xinjiang) Biotech Co. Ltd., Korla; Xinjiang, China
- Synthite Industries Ltd, Beijing, China
- Synthite Industries Ltd, Teligi, Karnataka
- Synthite Industries Ltd, Harihar, Karnataka

All their plants work 24 x7, throughout the year. Their convenient plant locations also ensure optimum levels of productivity, as their material sources are always readily available. The total installed capacity for Oleoresins is about 290 metric tons per day. And major spices like Chilli, Turmeric, Pepper, and Cardamom are processed in dedicated plants. Additionally, other spices like Nutmeg, Ginger, Mace, Coriander, Cumin, Fennel, Fenugreek, Celery, etc can be produced at any of the plants available, based on the quantity required.

As an integral part of the business, the New product Development and the Sales Application divisions provide support to clients in developing and fine-tuning the products and their applications as per their requirements.

4.7.2 Technology

Other than conventional solvent extraction, specialised technologies like Supercritical CO₂ Extraction and Centritherm® are also used to obtain higher quality products. The advantage of CO₂ Extraction is that it yields a superior quality product due to low thermal impact and absence of solvents. Centritherm is a brand new technology which gives them the capability to process heat sensitive materials like fruits and vegetables to obtain concentrates which can also be spray dried.

4.7.3 Departments

1. Raw material procurement
2. Logistics
3. Sales
4. Operational procurement
5. Quality Control
6. Finance
7. Planning
8. HR
9. Engineering
10. Environmental health and safety

4.7.4 Spices handling

The range of spices processed by the bio-ingredients division to produce oleoresins and essential oils includes the following.

1. Black Pepper
2. Capsicum
3. Cardamom
4. Cassia
5. Celery
6. Clove
7. Cocoa
8. Coriander

9. Cumin
10. Decalepis
11. Dill seed
12. Garlic
13. Ginger
14. Mace
15. Mustard
16. Nutmeg
17. Onion
18. Pimento
19. Paprika
20. Rosemary
21. Tamarind
22. Turmeric
23. White Pepper

4.7.5 Raw material direct procurement centers

At present bio ingredients division of Synthite having direct procurement of four types of spices such as

1. Nutmeg : Kalady, Kerala
2. Chilli : Guntur, Andhra Pradesh
3. Turmeric : Gundalpet, Karnataka
4. Ginger : Alur, Hassan, Karnataka

Chapter - 5

*Ginger Direct Procurement Programme –
An Analysis*

Chapter - 5

GINGER DIRECT PROCUREMENT PROGRAMME – AN ANALYSIS

This chapter presents the results of the data collected through the survey of 30 respondents including 20 ginger farmers cum commission agents and 10 small traders which were analysed and tabulated in terms of specific objectives of the study. The results are presented in the following subheads.

5.1 Socio – economic profile of the respondents

5.2 Genesis, functions and activities of ginger direct procurement programme of Synthite

5.3 Value chain of ginger under different procurement methods

5.4 Constraints and benefits of the ginger direct procurement programme

5.5 Conclusion

5.1 Socio-economic profile of the respondents

Socio economic characteristics of the farmer cum commission agents and traders involved in ginger direct procurement programme are presented in Table 5.1.

Table 5.1 Socio-economic profile of the respondents

Sl.No.	Variables	Farmer cum commission agents (%)	Traders (%)
1	Nativity		
	Domicile	80	100
	From other states	20	Nil
2	Educational level		
	Below 10 th standard	20	10
	10 th standard	40	40
	Plus Two	25	30
	Graduation	15	20

3	Income(Rs.)		
	Below 1,00,000	5	Nil
	1,00,000-5,00,000	10	Nil
	5,00,000-10,00,000	25	Nil
	Above Rs.10,00,000	60	100
4	Primary occupation		
	Agriculture	35	Nil
	Business	60	Nil
	Others	5	100
5	Experience in cultivation / procurement		
	One year	15	Nil
	1-5 years	20	100
	5-10 years	25	Nil
	Above 10 years	40	Nil
6	Area under ginger cultivation	45	-
	Below 1 ha (marginal)	15	-
	Between 1 & 2 ha (small)	40	-
	Above 2 ha (large)		
7	Land ownership status		
	Own	45	-
	Lease	50	-
	Own & Lease	5	-

Source: Primary data

Results of Table 5.1 indicated that majority (80%) of the ginger farmers cum commission agents were natives of Karnataka and 20% were from other states mostly Kerala. Education level of most of the farmer cum commission agents (40%) was tenth standard. It also had members with education level of plus two (25%), below tenth standard 20% and graduation 15%. Majority (60%) were having annual income more than Rs.10,00,000 and the rest (40%) had annual income below Rs.10,00,000 that ranged between Rs.10,00,000 and Rs.1,00,000. Primary

occupation of the majority (60%) was business. Farmer cum commission agents who had agriculture as primary occupation was 35% and employment was 5 percent. Most (40%) of the farmer cum commission agents had more than ten years of experience in ginger cultivation. It also had members with 5-10 years (25%), 1-5 years (20%) and rest 15% had one year experience in ginger cultivation. Most (45%) of the farmer cum commission agents were marginal farmers. The large and small farmers were 40% and 15% respectively. Majority (50%) of the farmer cum commission agents cultivated used leased lands. Remaining 45% cultivated in own land and 5 percent used both own and leased lands for cultivation.

Similarly the socio-economic profile of traders in the Table 5.1 indicated that all of them were domicile to Karnataka. The education status varied from graduation (20%) and tenth standard (40%). A few of them had plus two education (30%) and 10% had schooling below tenth standard. All traders had annual income more than Rs.10,00,000. It can be inferred from the table that primary occupation of all the traders (100%) was business. All the traders had 1- 5 year experience in dry ginger trade.

5.2 Genesis, Functions & Activities of Ginger direct procurement programme of Synthite

The genesis, functions and activities of ginger direct procurement programme of Synthite Industries Ltd are presented under the following subheads.

5.2.1 Genesis of ginger direct procurement programme of Synthite

Synthite Industries Ltd. is the leading manufacturer of oleoresins and extracts from spices since 1972. Pepsi, Coco cola, ITC etc are some of its major customers. Synthite produces 130 tonnes of ginger oleoresins in a year. It needs 2000 tonnes of dried ginger in a season for producing oleoresins. Tsunami quality which is the second grade ginger coming as waste after the sale of the fresh ginger of Rigodi variety was collected for oleoresin extraction by the company. This was attributed to the high oleoresin content of the variety. Normally Synthite used to procure the dried ginger from the direct supplying vendors. Vendors are the large suppliers who deliver dried ginger at specified price, quantity and quality as stipulated in the purchase orders issued to them by the company. In procurement from vendors Synthite experienced some difficulties like unavailability of raw materials at the required time, bargaining and charging high prices by the suppliers, delivery of bad quality materials etc. As a solution for

this dried ginger direct procurement programme was launched by Synthite Industries Ltd from the year 2015 – 16.

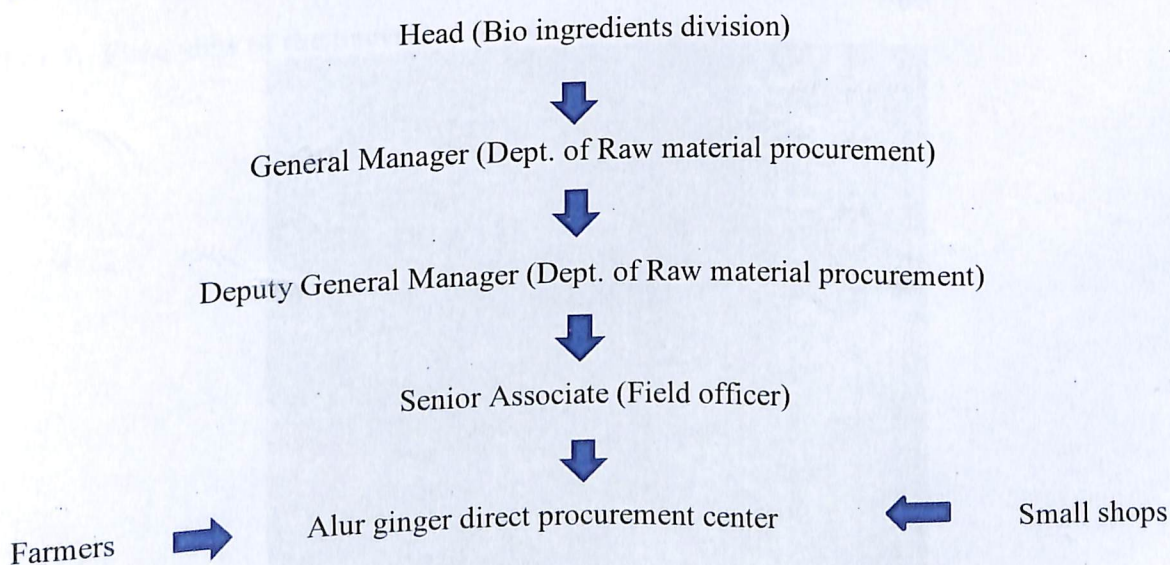
5.2.2 Dried ginger direct procurement programme of Synthite Industries Ltd

Synthite Industries Ltd selected ginger direct procurement center at Alur, Hassan district of Karnataka. The main reason for selection of the center was that Hassan district is the major producer of ginger in Karnataka where almost all farmers cultivated Rigodi variety. The procurement under ginger direct procurement programme was officially launched on 7th February 2016. The purpose of this programme is to procure dried ginger directly from farmers, commission agents and small traders by offering them with better values without the influence of the intermediaries. This is aimed at reducing the cost of procurement and to ensure better prices to farmers. Synthite collected more than 750 tonnes of dried ginger through direct procurement during current harvest season of its launch from 165 beneficiaries.

5.2.3 Organizational structure of the ginger direct procurement programme

The direct procurement center of dried ginger at Alur comes under the raw material procurement department of the bio ingredients division of the Synthite Industries Ltd. The organizational hierarchy of the center is given as Fig 5.1.

Fig 5.1 Organizational structure of direct procurement programme



One of the senior associates of raw material procurement department is managing the dried ginger direct procurement programme at Alur center. He reports to the Deputy General Manager of the department.

5.2.4 Major processes and activities under ginger direct procurement programme

Under direct procurement programme only dried ginger is procured either from farmers, commission agents or small shops. The product flow and major processes under ginger direct programme of Synthite Industries Ltd depicted is depicted as Fig 5.2.

There were three major actors in the product flow of dried ginger under ginger direct procurement programme of Synthite Industries Ltd. The major players and their activities are discussed as follows.

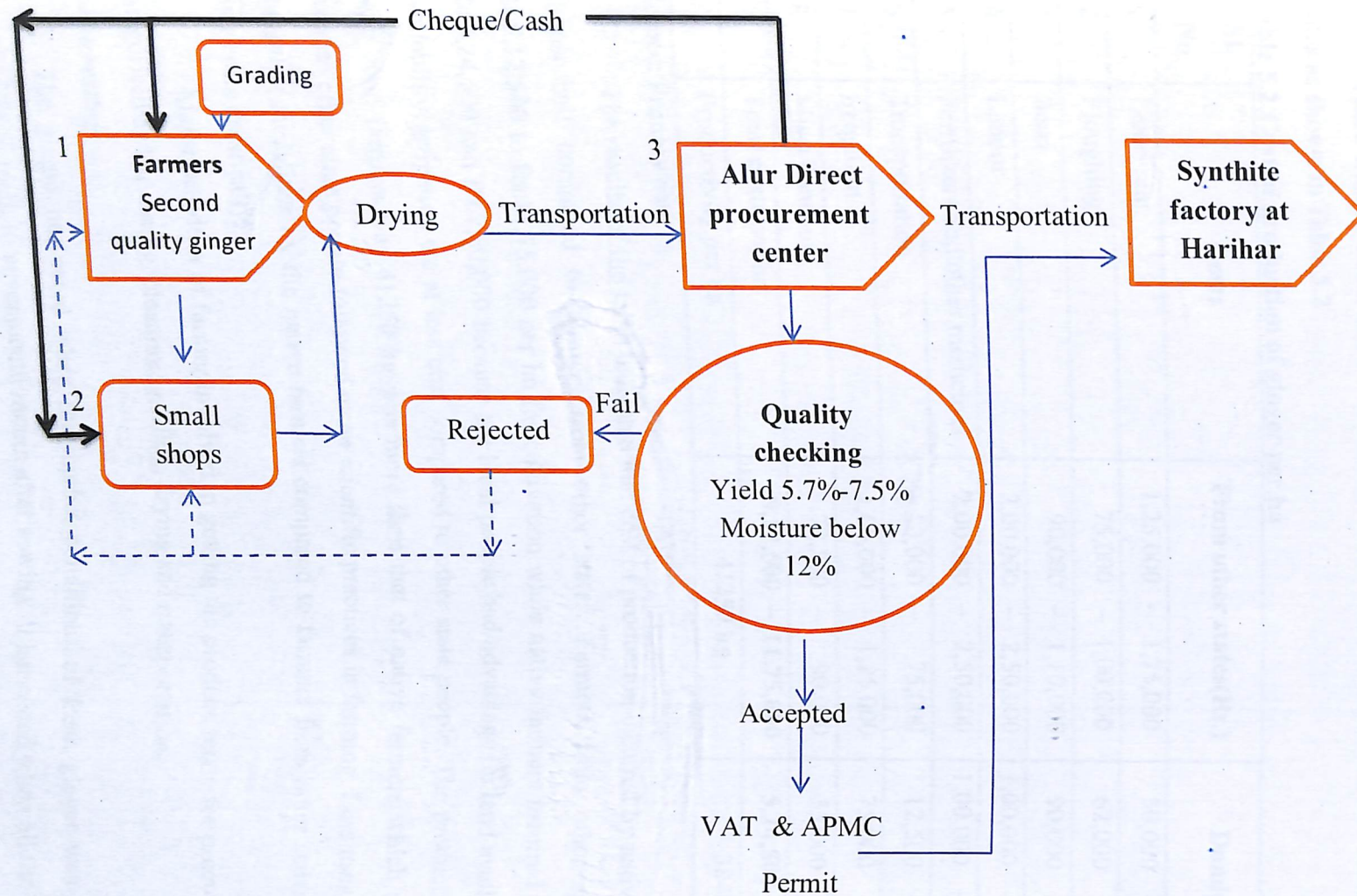
5.2.4.1 Farmer / small shop owner

The basic unit of the ginger direct procurement programme is the farmer. Rigodi was the most popular ginger variety cultivated by the farmers in Alur. It had high productivity and better tolerance to pests and diseases. The productivity of the Rigodi was 39865 kg per ha. All the respondents of the study used the same variety for cultivation. A field view of the harvested Rigodi variety ginger is presented as Plate 1.

Plate 1. Field view of the harvested Rigodi variety ginger



Fig 5.2 Product flow and major processes of the ginger direct procurement programme of Synthite



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Forward product flow

Return product flow of Rejects

Money flow

There was variation in cost of cultivation between native farmer and farmers from other states as shown in Table 5.2

Table 5.2 Cost of production of ginger per ha

Sl. No	Costs	From other states(Rs.)	Domicile (Rs)
1	Lease rent	1,25,000 – 1,75,000	50,000 – 1,00,000
2	Ploughing	75,000 – 1,00,000	62,000 – 75,000
3	Seed	90,000 – 1,10,000	90,000 – 1,12,500
4	Labour	2,00,000 – 2,50,000	1,00,000 – 1,75,000
5	Fertilizers and other medicines	2,00,000 – 2,50,000	1,00,000 – 1,25,000
6	Transportation	50,000 – 75,000	12,500 – 17,500
7	Irrigation	1,00,000 – 1,25,000	75,000 – 1,25,000
8	Miscellaneous	72,500 – 90,000	35,000 – 50,000
	Total costs per ha	9,12,500 – 11,75,000	5,24,500 – 7,80,000
	Productivity per ha	41250 kg	38480 kg

Source: Primary data

The results of the table indicated that cost of production incurred by native farmers was almost half compared to farmers from other states. Farmers from other states incurred Rs.9,12,500 to Rs.11,75,000 per ha for cultivation while native farmers incurred costs between Rs.5,24,500 and Rs.7,80,000 because the local people had advantage on land availability, labour availability, irrigation etc at less cost compared to other state people. The productivity per ha of other state farmers was 41250 kg was more than that of native farmers which was 38480 kg because other state people followed more scientific practices in farming. Less usage of fertilizers and other medicines by the native farmers compared to farmers from other states was reduced their costs drastically.

Major activities of farmer involved in getting the produce ready for procurement can be categorised as harvesting, cleaning, grading, drying and transportation.

i).Harvesting

The ginger harvested when the market conditions of fresh ginger was good. Ginger harvested from tenth to seventeenth month after sowing. It harvested when all the aerial parts of leaf turned yellow. It is earthen up and cleaned and graded at the farm itself.

ii). Grading

Harvested ginger is cleaned and graded at the farm itself and first quality sold as fresh ginger to the traders. Farmers who sell as fresh ginger separate the second quality and sell it to small farmers or commission agents.

iii). Drying

Those farmers who sell directly to the procurement get the produce sundried for 15 - 20 days to retain the moisture at minimum level of 12%. Commission agents and small shops who procured fresh ginger from farmers also sundries it to meet the programme specifications.

iv). Transportation

The dried ginger is transported to the direct procurement center located at Alur by the farmers or commission agents or small shops.

5.2.4.2 Ginger direct procurement center, Alur

The major activities of the procurement center are quality checking of the produce and payment. The quality checked by physical examination by the concerned staff. The samples of the material arrived was checked for quality and dryness by cracking with hands. The rejected material returned to the respective supplier. Accepted material was stored in the godown. The ginger direct procurement center paid APMC fee and took APMC and VAT permits. APMC fee was 1.5% of the value of the ginger procured. Payment to the supplier was by means of cash or cheque. This was the advantage of the programme to the farmers. The dried ginger procured at Ginger direct procurement center Alur was transported to the Synthite factory at Harihar for the production of oleoresin.

5.2.5 Quality specifications and pricing of dried ginger

Dried ginger procured by Synthite was of Rigodi variety. The second quality of Rigodi variety ginger is popularly known as Tsunami. The yield of oleoresin from Tsunami quality is 5.7% to 7.5% which is more than that of other varieties of ginger. The program stipulated to procure fully dried ginger with the moisture level below 12%.

The pricing of dried ginger was fixed on the basis of the cost of drying and market rates. Conversion ratio of fresh ginger to dried ginger is 5:1. Cost of drying which included labour costs, cost of transportation and packing was estimated to be Rs. 82.5 at farmer level and Rs.87.5

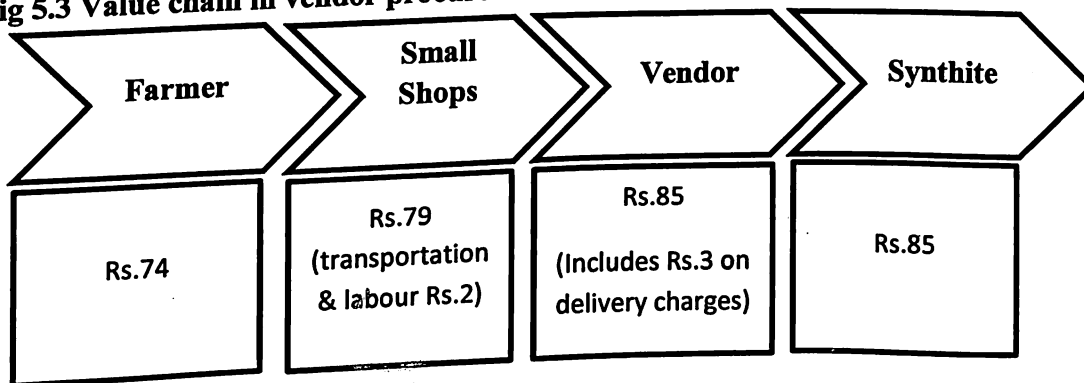
at small shop level respectively. The average procurement price in the current season was Rs.97.5.

5.3 Value chain of ginger under different procurement methods

Synthite procured dried ginger in two ways. One through vendor procurement and the other through the direct procurement programme. Vendors supplied quantities against the purchase order given by the company. Comparison of value chain of dried ginger under the two procurement methods followed by the company is presented.

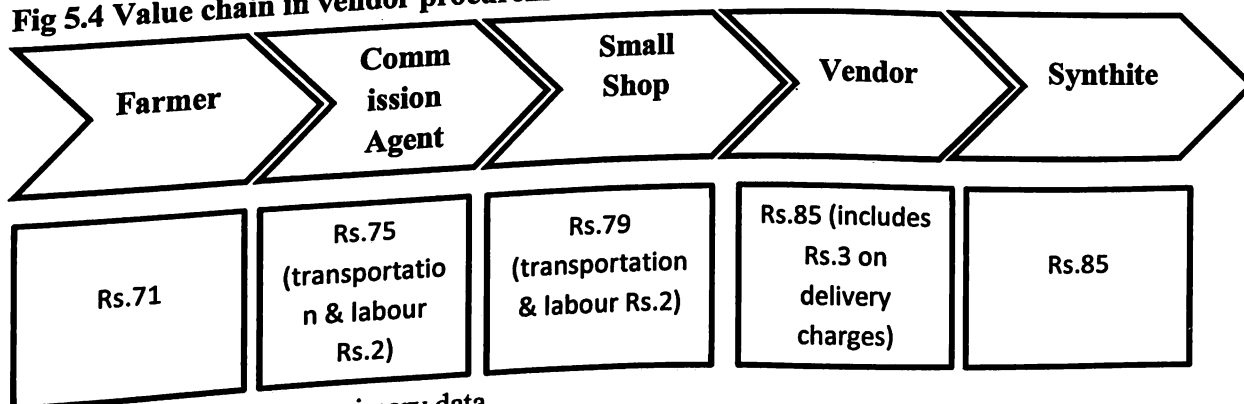
5.3.1 Vendor procurement

Fig 5.3 Value chain in vendor procurement – channel 1



Source: Compiled from primary data

Fig 5.4 Value chain in vendor procurement – channel 2



Source: Compiled from primary data

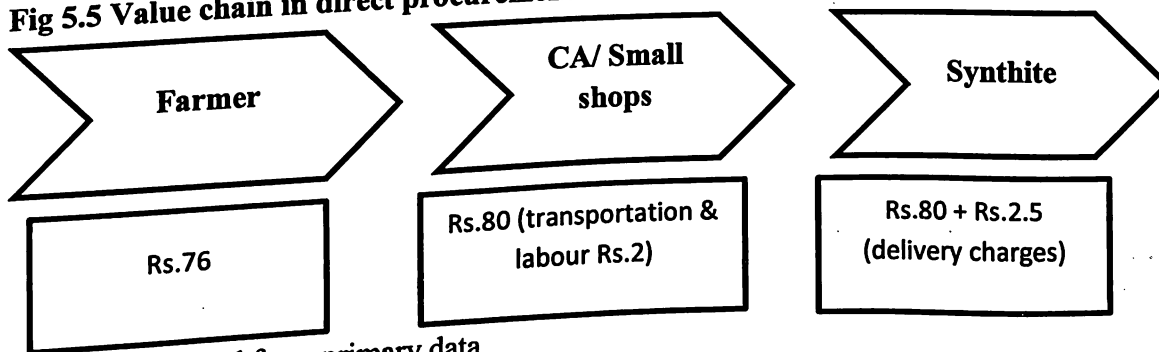
In vendor procurement two different material flow channels are identified. In that most popular procurement process as given in Fig 5.3, the farmer sells dried graded second quality

Rigodi ginger to small shops which sells it to the company through a vendor. Under another less practiced procurement mode, presented as Fig 5.4, between the farmer and small shop there is an intermediary called commission agent. This increases the value chain length which reduces the net benefit of farmers. The identified loss was Rs.3 per kg on procured ginger to farmers. The intermediaries enjoyed Rs.11 to Rs.14 per kg.

5.3.2 Direct procurement

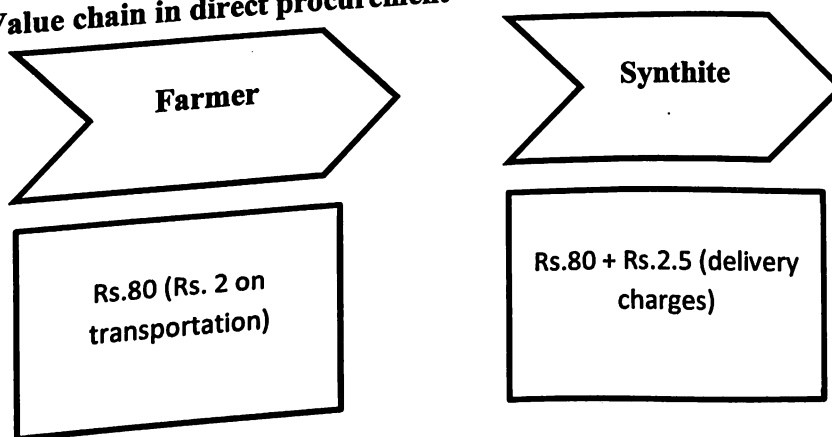
The value chains of two different material flows in ginger direct procurement programme when the price offered to the suppliers was Rs.80 per kg of dried ginger depicted in the Fig 5.5 and Fig 5.6.

Fig 5.5 Value chain in direct procurement – channel 1



Source: Compiled from primary data

Fig 5.6 Value chain in direct procurement – channel 2



Source: Compiled from primary data

In direct procurement two different material flow channels are identified. In that most popular procurement process as given in Fig 5.5, the farmer sells dried graded second quality

Rigodi ginger to the company through small shops or commission agents. Under another less practiced procurement mode, presented as Fig 5.6 farmer sells directly to the company without any intermediaries. The identified gain was Rs.4 per kg on procured ginger to farmers. The intermediaries took Rs.4 per kg when farmer sold through them. But only few farmers were only directly sold to Synthite. Most of the farmers had only few quantities which made it more expensive to bring it to Synthite because of high costs in transportation and labour.

Under vendor procurement the farmer got only Rs.71- Rs.74 compared to Rs.76 – Rs.80 in direct procurement. For farmers the gain from ginger direct procurement program was Rs.2 – Rs.9 on a kg. Direct procurement enhanced the relationship between the Synthite and the farmers/small traders. It also reduced the influence and bargaining power of big traders and big suppliers by reduced number of intermediaries.

5.4 Constraints and benefits of the ginger direct procurement programme

Synthite procured 1404 tonnes of dried ginger in the current harvest season from February 2016 to April 2016. Out of which 54% was through direct procurement and 46% was through vendor procurement. The constraints and benefits of the ginger direct procurement programme was analysed and presented under the following subheads.

5.4.1 Awareness on Synthite's direct procurement programme

The source from which the respondents came to know about Synthite's direct procurement programme was studied and the results are showed in the Table 5.3.

Table: 5.3 Awareness on Synthite's direct procurement

Source of information	Percent
Synthite staff	23.3
Small shops	33.3
Farmers	6.7
Commission agents	36.7
Total	100.0

Source: Primary data

It was inferred from the Table 5.3 that most of the respondents (36.7%) got to know about Synthite's direct procurement of dried ginger was from commission agents. Other sources of information about the programme were small shops (33.3%), Synthite staff (23.3%) and farmers (6.7%).

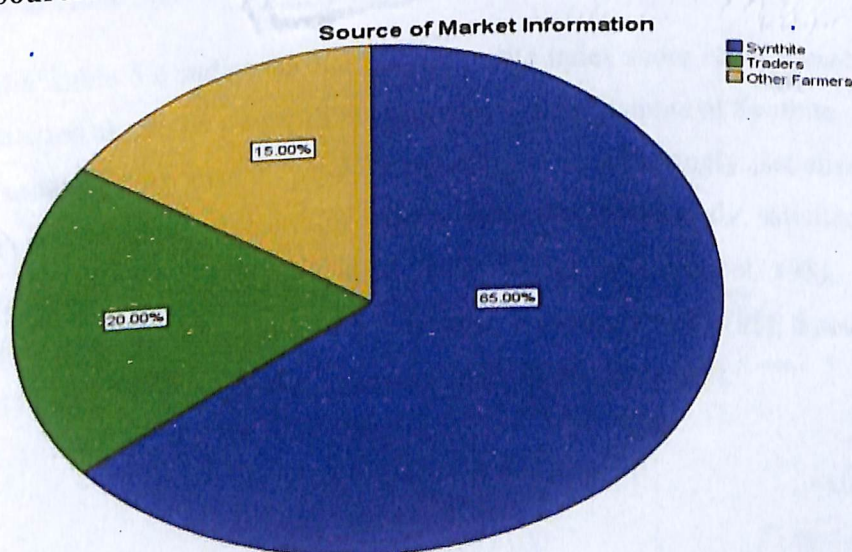
Table 5.4: Attributes of Synthite direct procurement programme preferred by the respondents

Preferred attributes	Percent
Spot payment of prices	53.3
Year round procurement	3.3
Flexible procurement quantity	6.7
Better prices	33.3
Easy transportation	3.3
Total	100.0

Source: Primary data

Table 5.4 showed that majority of the respondents (53.3%) opined that they preferred ginger direct procurement programme because of its attribute spot payment of prices. Other respondents preferred it because better prices (33.3%), flexible procurement quantity (6.7%) year round procurement (3.3%) and easy transportation (3.3%).

Fig 5.7: Sources of Market Information



Source: Primary data

As per Fig 5.7, majority (65%) of the respondents got market information from Synthite ginger direct procurement center. Other sources of information were traders (20%) and farmers (15%).

Table 5.5: Preferred payment mode

Payment mode	Extent of preference (%)
Cash	66.7
Cheque	20.0
Cheque and cash	13.3
Total	100.0

Source: Primary data

From the Table 5.5 it can be understood that majority of the respondents (66.7%) opted for cash as payment mode. Cheque demanded by 20%. 13.3% preferred both cheque and cash as payment.

5.4.2 Satisfaction of respondents towards Synthite's ginger direct procurement programme

An attempt was made to quantify the satisfaction level of the respondents towards the ginger direct procurement programme of the Synthite Industries Ltd using satisfaction index is presented in Table 5.6.

The Table 5.6 indicated that the composite index score of 96 meant that suppliers were highly satisfied about the ginger direct procurement programme of Synthite. Prompt payment got highest index (100) meant whole respondents were strongly satisfied to ginger direct procurement's prompt payment of prices. Respondents strongly satisfied to the statements reliability about price payments (98), year round procurement (98), high flexibility in procurement quantity (98), fair quality checking while purchasing (96), Synthite is offering good prices (91) and Synthite provides accurate market information (89).

Table 5.6: Satisfaction of respondents towards Synthite’s ginger direct procurement programme

SI No.	Statements	Total Score	Index (score*100/total score)	Zone
1	Synthite is offering good prices	136	91	SS
2	Reliability about price payments	147	98	SS
3	Prompt payments	150	100	SS
4	Year round procurement	147	98	SS
5	High flexibility in procurement quantity	147	98	SS
6	Provides accurate information	133	89	SS
7	Fair quality checking while purchasing	144	96	SS
	Total score and composite index	1004	96	SS

Source: Primary data

SS – Strongly Satisfied, S – Satisfied, NO – No Specific Opinion, D – Dissatisfied,
CD – Completely Dissatisfied

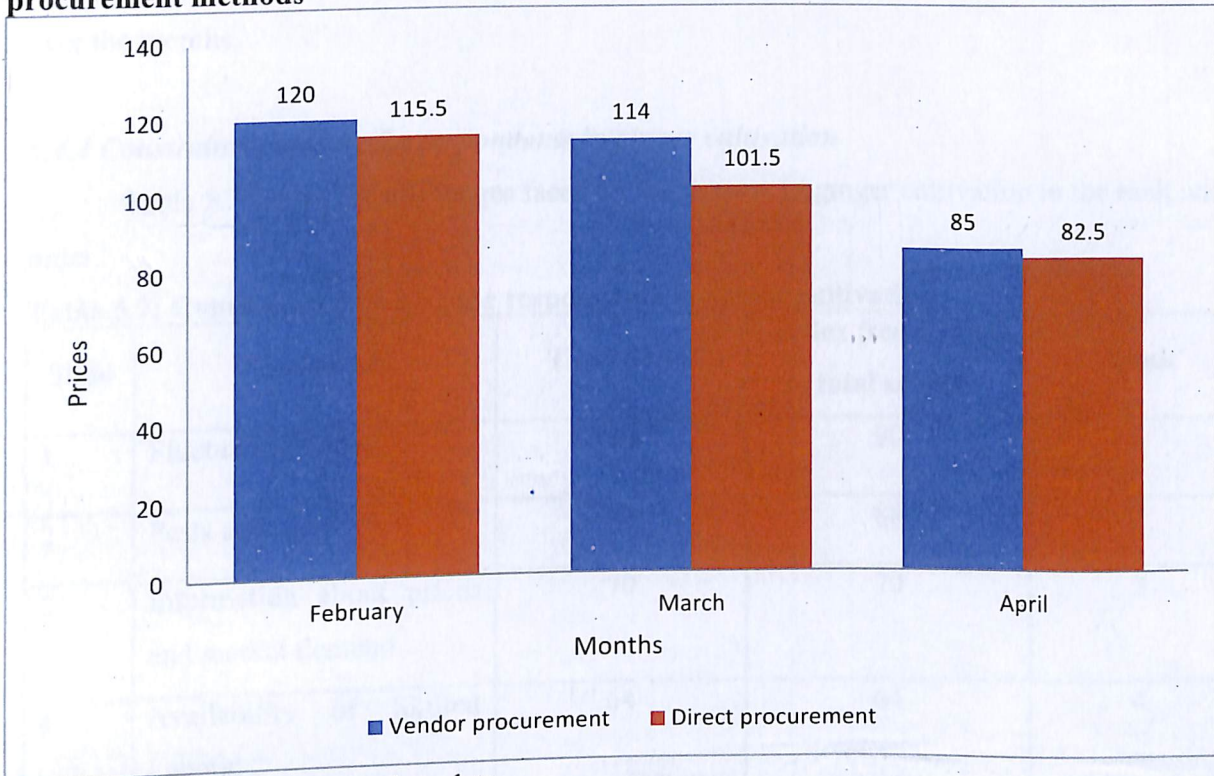
5.4.3. Cost of procurement of incurred by Synthite over the months under different procurement methods.

The average cost of procurement incurred by Synthite under different procurement methods over the months are depicted in the Fig 5.8.



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Fig 5.8 Cost of procurement of incurred by Synthite over the months under different procurement methods



Source: Compiled from secondary data

It can be understood from the Fig 5.8 that the average cost of procurement incurred by the Synthite under vendor procurement was Rs.120 in February, Rs.114 in March and Rs.85 in April. The same under direct procurement was Rs.115.5 in February, Rs.101.5 in March and Rs.82.5 in April. Under direct procurement Synthite has to incur Rs.2.5 additional on the actual prices paid per kg to the suppliers includes labour charges, transportation charges and APMC charges. Hence the difference in cost of procurement was Rs.4.5 in January, Rs.12.5 in February and Rs.2.5 in March. The average cost of procurement under vendor procurement was Rs.106 and in ginger direct procurement programme was Rs.100. The net benefit of Synthite in the cost of procurement per kg procured is Rs.6.

Synthite procured dried ginger through direct procurement programme at market rate but vendors charged more prices than the market rate existed. Better prices and spot payment attracted farmers and small traders to Synthite's direct procurement programme which forced vendors to cut their profits by reduction of prices charged on Synthite without affecting the

farmers much. As a result the price difference between two procurement methods became lesser over the months.

5.4.4 Constraints faced by the respondents in ginger cultivation

Table 5.7 shows the challenges faced by the farmers in ginger cultivation in the rank wise order.

Table 5.7: Constraints faced by the respondents in ginger cultivation

Sl.no	Statements	Total Score	Index (score*100/ total score)	Rank
1	Fluctuating prices	90	90	1
2	Pests and diseases	88	88	2
3	Information about prices and market demand	70	70	3
4	Availability of Skilled Labour	64	64	4
5	Exploitation by the intermediaries	63	63	5
6	Rural infrastructure	58	58	6
7	Availability of quality planting material	49	49	7
8	Irrigation	48	48	8
9	Availability & quality of other input	45	45	9
10	Land availability	44	44	10

Source: Primary data

From the Table 5.7 it was evident that fluctuating prices was the major constraint faced by the ginger cultivators. The other major constraints high ranks were pests and diseases, information about prices and market demand, availability of skilled labour, exploitation by the intermediaries and rural infrastructure. The availability of quality planting material, irrigation,

availability & quality of other input and land availability were got lower ranks meant that were not much affecting the respondents.

5.4.5 SWOC analysis of ginger direct procurement at Alur

SWOC analysis was used to analyse the constraints and benefits of the ginger direct procurement programme of Synthite and the results are presented below.

i). Strengths

1. Price controller as a large player in the market.
2. Reduced cost of procurement.
3. Enhanced relationship with small traders and farmers.
4. Reduced the influence and bargaining power of intermediaries in the ginger trading by offering better prices.
5. Instant payment via cheque or cash attracts customers.
6. Deals small as well as large quantities.
7. High popularity among farmers / traders as reflected in the increase in high quantity procured rate.
8. Consistent increase in the number of suppliers over the months.

ii). Weakness

1. Inefficient infrastructure especially godown. Height of the godown is less makes heat increases inside the go down and it makes sinkage higher.
2. Complete elimination of intermediaries was not effected because farmers with small quantities had to rely on them as they involved high cost on labour and transportation under the programme.

iii). Opportunities

1. Increasing suppliers demand helps to procure required quantity in full in future.
2. Procurement as fresh ginger will make the programme more inclusive and cost efficient.
3. Increasing demand of oleoresin market.

iv).Challenges

1. Dealing of small quantities brought by the farmers was time consuming.
2. Procured ginger included both good and bad quality which made quality checking cumbersome.
3. Entrance of companies having similar products in the market may increase the cost of procurement.
4. Lack of availability of local skilled labour.
5. Threats from big traders.

5.5 Conclusion

The present chapter made an attempt to analyse the effectiveness of the ginger direct procurement programme of the Synthite Industries Ltd based on genesis, functions and activities, value chains of dried ginger under different procurement modes and constraints and benefits of the programme. The programme procured more materials at less procurement cost than the existing procurement methods in the initial year itself shows that ginger direct procurement programme is successful. The suppliers are also satisfied to the ginger direct procurement programme.

Chapter - 6

Summary of Findings and Suggestions

Chapter - 6

SUMMARY OF FINDINGS AND SUGGESTIONS

6.1. Introduction

Studying about the effectiveness of the Synthite's ginger direct procurement programme which was the new initiative by the company in raw material procurement is relevant and necessary to decide whether it can be continued or not. The programme offers better value to the ultimate farmers by cutting the number of intermediaries between the company and the farmers. Reduced influence of the intermediaries made cost of procurement also less for the company than the existing procurement methods.

The present study entitled "Ginger direct procurement programme of Synthite Industries Limited – A study on direct sourcing" has done with the objectives; analysis of the direct procurement programme of ginger by Synthite Industries Ltd in terms of genesis, functions and activities, value chain analysis of ginger under different procurement methods and to explore the constraints and benefits of the ginger direct procurement programme. The study was conducted in Alur, Hassan district of Karnataka where the direct procurement center of Synthite is located. To analyse these objectives primary data were collected from 30 samples through questionnaires covered both farmer cum commission agents and small traders from the selected study area. The respondents were selected randomly from the list of suppliers to the procurement programme. Secondary data were also used for the study purpose.

The major findings, suggestions and conclusions are summarised in the succeeding sections.

6.2. Major findings

6.2.1 Profile of the suppliers

1. Major suppliers in the direct procurement programme were farmers, commission agents and small shops.
2. The socio economic data of the respondents which included farmers cum commission agents and traders indicated that in respect to nativity 80% of the farmer cum commission

- agents was Karnataka and remaining 20% were from other states mostly like Kerala. But the nativity status of all the respondents in trader category was Karnataka.
3. The education level of most (40%) of respondents of both farmer cum commission agents and trader category were tenth standard.
 4. In case of respondents of farmer cum commission agents majority (60%) were having annual income more than Rs.10,00,000 whereas in trader category all respondents had annual income more than Rs.10,00,000.
 5. Primary occupation of the majority (60%) farmer cum commission agents category respondents was business. But primary occupation of all the trader respondents was business.
 6. In the case of farmer cum commission agents category of respondents most (40%) of them had more than ten years of experience in ginger cultivation.
 7. All the respondents in trader category had 1- 5 year experience in dry ginger trade.
 8. Most (45%) of the respondents in farmer cum commission agents category were marginal farmers.
 9. Majority (50%) of the respondents in farmer cum commission agents cultivated ginger in leased lands.

6.2.2 Synthite ginger direct procurement programme

1. The procurement under ginger direct procurement programme was officially launched on 7th February 2016. Synthite collected more than 750 tonnes of dried ginger through direct procurement during current harvest season from 165 beneficiaries in its initial year.
2. The ginger direct procurement programme comes under the control of head of Bio-ingredients division of the Synthite Industries Ltd. Senior associate who is the field officer manages the direct procurement center and reports to the Deputy General Manager of the raw material procurement department.
3. Major actors in the direct procurement programme were farmers, commission agents, small shops and Alur ginger direct procurement center.
4. There was great variation in the cost of cultivation between farmers from Karnataka and farmers from other states. The cost of cultivation per ha of native farmers was

Rs.5,24,500 to Rs.7,80,000 but that of farmers from other states were Rs.9,12,500 to Rs.11,75,000. The reasons for variation was local people had advantage on land availability, labour availability, transportation, irrigation etc at less cost compared to other state farmers.

5. The productivity per ha of farmers from Karnataka was 38480 kg which was less than that of farmers from other states which was 41250 kg per ha. It was because other state farmers followed more scientific practices in farming. Less usage of fertilizers and other medicines by the native farmers than other state farmers was also a reason of cost variation between them.
6. Synthite procured dried ginger with strict adherence to quality specifications under the ginger direct procurement programme. The procured quality was Tsunami which gives 5.7% to 7.5% yield of oleoresins. The moisture level was below 12%.
7. The pricing of dried ginger was fixed on the basis of the cost of drying and market rates. Conversion ratio of fresh ginger to dried ginger is 5:1. Cost of drying which included labour costs, cost of transportation and packing was estimated to be Rs.82.5 at farmer level and Rs.87.5 at small shop level respectively. The average procurement price in the current season was Rs.97.5.

6.2.3 Value chain of dried ginger under different procurement methods

1. In vendor procurement two different material flow channels are identified. In that most popular procurement process, the farmer sells dried graded second quality Rigodi ginger to small shops which sells it to the company through a vendor. Under the second material flow channel, between the farmer and small shop there is an intermediary called commission agent. This increases the value chain length which reduces the net benefit of farmers. The identified loss was Rs.3 per kg on procured ginger to farmers. The intermediaries enjoyed Rs.11 to Rs.14 per kg.
2. In direct procurement also two different material flow channels are identified. In that most popular procurement process, the farmer sells dried graded second quality Rigodi ginger to the company through small shops or commission agents. Under another material flow channel, farmer sells directly to the company without any intermediaries. The identified gain was Rs.4 per kg on procured ginger to farmers. The intermediaries

took Rs.4 per kg when farmer sold through them. But only few farmers were only directly sold to Synthite. Most of the farmers had only few quantities which made it more expensive to bring it to Synthite because of high costs in transportation and labour.

3. Under vendor procurement the farmer got only Rs.71- Rs.74 compared to Rs.76 – Rs.80 in direct procurement. For farmers the gain from ginger direct procurement programme was Rs.2 – Rs.9 on a kg. Direct procurement enhanced the relationship between the Synthite and the farmers/small traders. It also reduced the influence and bargaining power of big traders and big suppliers by reduced number of intermediaries.

6.2.4 Constraints and benefits of the ginger direct procurement programme.

1. Majority of the respondents (53.3%) opined that they preferred ginger direct procurement programme because of its attribute spot payment of prices.
2. The suppliers were highly satisfied about the ginger direct procurement programme of Synthite.
3. The average cost of procurement incurred under vendor procurement was Rs.106 and under ginger direct procurement programme was Rs.100. The net benefit in cost of procurement per kg from direct procurement was Rs.6.
4. The strengths of the ginger direct procurement programme were price controller, reduced cost of procurement, enhanced relationship with the suppliers, reduced the influence and bargaining power of intermediaries, instant payment attracts customers, deals small as well as large quantities, constant increase in quantity procured rate and consistent increase in the number of suppliers over the months.
5. The weaknesses identified were inefficient infrastructure increases the loss due to sinkage and complete elimination of intermediaries was not effected because farmers with small quantities had to rely on them as they involved high cost on labour and transportation under the programme.
6. The opportunities were increasing suppliers demand helps to procure required quantity in full in future, collecting of fresh ginger and drying will again reduce the cost of procurement and increasing demand of oleoresin market.
7. The challenges experienced by the ginger direct procurement programme were dealing of small quantities brought by the farmers was time consuming, procured ginger included

both good and bad quality which made quality checking cumbersome, entrance of similar companies may increase the cost of procurement, lack of availability of local skilled labour and threats from big traders.

8. Fluctuating prices was the major constraint faced by the ginger cultivators in the ginger cultivation. The other major constraints were pests and diseases, information about prices and market demand, availability of skilled labour, exploitation by the intermediaries, rural infrastructure, availability of quality planting material, irrigation, availability & quality of other input and land availability. ...

6.2. Major suggestions

1. Implement supplier registration to suppliers adhering to quality specifications. This will ensure the suppliers are complying with the quality specifications stipulated by the company.
2. The intermediaries can be totally eliminated by forming farmer networks. The farmers who were having small quantities can be pooled together through that network and sell directly to the ginger direct procurement center of Synthite. This will reduce the costs in transportation and labour. This will also give additional income to the farmers and ensures large quantities to Synthite.
3. Including programme for collecting second quality fresh ginger directly from the farmers and drying it by Synthite will reduce the cost of procurement and widens the coverage of programme to include area and small farmers.
4. Infrastructure development to ensure better godown to reduce the loss due to the sinkage of materials.

6.3. Conclusion

From the study it can be concluded that the ginger direct procurement programme was a successful initiative of Synthite Industries Ltd. Even though it started in 2016 it procured more quantities of dried ginger than the vendor procurement which was the conventional procurement source for the company. Out of the total requirement of 2000 tonnes of dried ginger in a season, Synthite could procure around 54% of its requirement through direct procurement programme. The direct procurement programme reduced the influence of the intermediaries and made the prices under control. This programme also offered more value to the ultimate farmers and ensured continuous supply of required materials for the production of oleoresins in time to the company.

Spot payment, year round procurement, flexible quantity, good prices were the key attractions of the direct procurement. It attracted more small suppliers to the direct procurement programme. The cost of procurement also reduced by Rs.6 per kg compared to the vendor procurement. The aim of the program was to collect dried ginger directly from the farmers but it was not effected completely because majority of the farmers having small quantities of produce. Transportation and labour costs involved made the programme unattractive to them. If farmer networks are formed, the farmers can pool the quantities together and sell in large quantities to the Synthite without any intermediaries. This will increase their income. This will make the whole procurement through the direct procurement programme only in the future.

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Appendix

APPENDIX

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

KAU, VELLANIKKARA

GINGER DIRECT PROCUREMENT PROGRAMME OF SYNTHITE INDUSTRIES
LIMITED – A STUDY ON DIRECT SOURCING

QUESTIONNAIRE

1. Name :
2. Address :
3. Age :
4. Mob No:
5. Type of supplier
Farmer Farmers and Commission agents Small traders
6. Educational Qualification
Below 10th std. 10th std Plus Two Graduation
PG Others Illiterate
7. Annual income
Below Rs.1,00,000 Between Rs.1,00,000- Rs.5,00,000
Between Rs.5,00,000- Rs.10,00,000 Above Rs.10,00,000
8. Primary occupation
Agriculture Business Profession Employment Others
Specify.....
9. Number of experience in ginger cultivation/procurement.....
One year 1-5 years 5-10 years Above 10 years

To be filled by the farmers

10. Land holding
 - a) Area owned.....
 - b) Area Leased out.....
 - c) Area Leased in.....
 - d) Net sown area.....

11. Do you know for what purpose your product is being bought?

Yes No

If yes, what are they?.....

12. Crop varieties used for cultivation

Sl No.	Crop variety name	Acerage cultivation	Production Quantity
		...	

13. Sowing to harvesting activities & costs

Cultivation practices.....

Seasons.....

Climatic conditions.....

14. Financing

Own Loan Money lenders NBFCs

15. Cost of cultivation per ha

Sl. No.	Inputs	Costs
1.	Lease rent	
2.	Seed	
3	Ploughing	
4.	Fertilizers and other medicines	
5.	Irrigation	
6.	Transportation	
7.	Labour charges	
8.	Miscellaneous	

16. Are you aware of any value addition techniques? If yes what are they?

Yes No

17. Are you doing any value addition

Yes No

18. Do you have any storage facility

Yes No Others

Selling

19. To whom you are selling your produces?

Small traders

Commission Agents

Big traders

Direct procurement of companies

Others.....

20. Are you satisfied in the present prices

SA A NO DA SDA

21. From where did you get the market information

Newspapers TV Internet Radio

Traders Other Farmers Brokers

22. What are the challenges you are facing in ginger cultivation?

Determination factor	SA	A	NO	DA	SDA
Availability quality of planting material					
Availability & quality of other input					
Land					
Irrigation					
Rural infrastructure					
Skill and knowhow					
Pests and diseases					
Information about prices and market demand					
Exploitation by the					

intermediaries					
Fluctuations in prices					

(SA- Strongly Agree, A- Agree, NO- No specific Opinion, DA- Disagree, SDA- Strongly Disagree)

To be filled by the Farmers and Traders

23. How do you got information about Synthite's direct sourcing

From Staff of Synthite Small shops Farmers
 Commission agents

24. Why do you changed towards direct procurement programme of Synthite

Spot payment of prices
 Year round procurement
 Flexible procurement quantity
 Better prices
 Easy transportation

25. Preferred payment mode

Cash Cheque Both

26. Are you satisfied in the present prices?

SA A NO DA SDA

27. Level of satisfaction towards Synthite's direct procurement.

Sl.No	Statements	SS	S	NO	D	CD
1	Synthite is offering good prices					
2	Reliability about price payments.					
3	Prompt payments					
4	Year round procurement					
5	High flexibility in procurement quantity					
6	Provides accurate					



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	information					
7	Fair quality checking while purchasing					

SS – Strongly Satisfied, S – Satisfied, NO – No Specific Opinion, D – Dissatisfied,
 CD – Completely Dissatisfied

28. Quantity sold under Synthite’s direct procurement programme and to other traders.

Synthite’s direct procurement		Other traders	
Quantity	Price got per kg	Quantity	Price got per kg

29. At what price you are purchasing dried ginger from farmers?

30. What are the costs incurred upto selling?

31. Marketing channel used earlier

Small shops Commission agents Big traders

32. Modes of transportation

Lorry Pick up Auto Bike Car Others.....

Costs.....

33. If the possibility would be there , would you willing to sell in larger quantities

Yes No

34. Suggestions.