Chapter Two
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The literature available on ginger includes papers, published and unpublished, and a few reports by individuals, institutions, and committees or commissions. Since the literature on ginger is scanty studies on other major spices and similar crops are also scanned to get an insight into certain aspects of this study.

Gunther identifies the important ginger producing region as Jamaica, South India, West Africa, Southern China and Japan. He is of the opinion that Jamaica produces the finest grade possessing the most delicate aroma and flavour. The Cochin quality exhibits a characteristic lemon like by-note, for which reason some experts prefer the Cochin ginger even to that from Jamaica. West African ginger is usually considered to rank third of all ginger grades, but it gives the highest yield of essential oil.

The Report of the Spice Enquiry Committee 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
Rosengarten, a well known writer on spices, examines the history of spices. He finds that a number of spices have long been known in India even before 1000 B.C. Ginger is one of the first oriental spices known to Europe, having been obtained by the Greeks and Romans from Arab traders. During the Middle Ages ginger was usually delivered to Europe from the Far East in the form of living rhizomes, so that it is logical that ginger was the first of the oriental spices to be introduced in the New World.

Purthi identifies seven different types of ginger, namely, (i) Jamaican ginger, (ii) Indian ginger, (iii) West African or Nigerian ginger, (iv) Sierra Leone ginger, (v) Japanese ginger, (vi) Rio-de-janeiro ginger and (vii) Chinese ginger. The composition of ginger varies with type or variety, region, agro-climatic conditions, method of curing, drying, packaging and storage.

It is stated in Wealth of India that the crop is grown either pure or as an intercrop with coconut, young coffee and oranges. It is cultivated on highlands as a regular crop once in three years.

Das highlights the broad aspects of marketing as supply, demand and price trend of ginger in India for the period 1970-71 to 1979-80. The year to year variation in the export figures are very much pronounced and no single exporting country is found to be free from the problem of fluctuating trends in ginger. The wholesale prices of Indian ginger being dependent upon world market, the period of high prices of ginger in Calicut and Cochin market obviously coincides with the peak period of export.
George and Velappan throw light on the trends in ginger production in India for the period 1968-69 to 1978-79. They find that ginger production has shown an increasing trend during this period. Till 1977-78 Kerala accounted for about 70% of the country's production. But with the development of ginger cultivation in Meghalaya, Kerala's share came down to about 40% in 1978-79.

Lakshmanchar observes 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 centres through commission agents.

Sivaraman Nair explains the cultivation practices of ginger. The better time of planting is found to affect the yield of ginger much. The application of leaf mulch during planting and six weeks later using a total of 20 tonnes of green leaves per hectare resulted in 200% increase in yield over non-mulched crops.

Tewari et al. make an analytical study of the various aspects of ginger cultivation in Himachal Pradesh. The study is confined to Sirmaur district as it is the largest ginger producing district. They observe that decline in the area, production and productivity of this crop in the district is due to lack of technical know-how, lack of irrigation facilities, non-availability of disease free seed material and weak financial condition. They also find that production efficiency is the highest on medium farms followed by small and marginal farms.

Devakaran is of the opinion that the price obtained for the produce is the deciding factor for planting in the next season. In International market
Indian ginger is facing stiff competition from China.

Thampi observes the competitive position of Indian ginger in world market. The cutting of price by the Chinese traders has resulted in principal buyers like the United States shifting to that country.

P. George examines the proposition that increased labour cost is responsible for reduced profitability of agriculture in Kerala. The findings reveal that the percentage increase in labour cost per hectare in 1984-85 over the 1980-81 cost is less than the percentage increase in output value per hectare during the same period for paddy, coconut, tapioca, arecanut and ginger.

Purseglove et al. examines history, cultivation practices, factors influencing quality and characteristics of ginger in different countries. Jamaican dried ginger is generally considered superior to those from other sources owing to its good appearance and to its delicate aroma and flavour. Nigerian dried ginger resembles Jamaican ginger in aroma and flavour but it is of a lower quality and it is in much demand for oil distillation and oleoresin extraction. Sierra Leone dried ginger bears more resemblance to the Indian spice than that from Jamaica. The quality of Australian dried ginger is generally considered to be intermediate between those of Jamaica and Sierra Leone. China is best known as a supplier of preserved ginger.

Bisen and Barholia suggest improved cultivation practices for ginger. The most suitable soil for ginger cultivation is sandy loams having good drainage and rich in humus content. Good tillage is essential for bumper harvest.

Paul observes that India, the 'home of spices' has established its su-
premacy in the manufacture and export of spices oils and oleoresins. Indian oleoresin industry is competing with manufactures in the developed countries.

Sharma, Oberoi and Moorti estimate the cost and returns of ginger production in Himachal Pradesh. They conducted the analysis for the two major vegetable growing blocks of Kangra district. They find that the gross return and net returns per hectare from ginger considerably decrease with the increase in the size of farms. It is due to better management and input use per hectare on small farms than large farms.

Andrews is of the opinion that the availability of exportable variety of ginger has always been a problem. On the other hand, domestic consumption is also rising because of its popularity in culinary preparations and increased applications in medicine, confectioneries and nonalcoholic beverages.

Balakrishnan reports that ginger from the states of North East faces a problem of high fibre content. This is mainly on account of the fact that this zone receives continuous rainfall and there is lack of enough sunshine which prevents the ginger from getting completely dried. This variety of ginger is normally not finding any markets either with in the country or outside both in the fresh form and dried form.

Khan in his study for the period 1970-71 to 1986-87 analyses the trends in area, production and productivity of ginger in the country as a whole and state-wise. Meghalaya stands first in maintaining higher level of productivity and the average yield per hectare is the lowest in Orissa.

Raveendran and Aiyaswamy attempt to study the factors influencing the
export of turmeric and to analyse the variation in the export prices of turmeric. They conclude that the flow of turmeric into the export market depends upon the export price relative to domestic price. The larger this ratio the more will be exported and vice-versa.

Narayana et al. highlight the trends and fluctuations in the price of small cardamom for the period 1971-72 to 1980-81 in India. They find that the cyclical fluctuations in prices are to a very large extent due to the very definite conditions of supply, viz., the increase in output through new planting and replanting becoming effective after a significant time lag. They relate the changes in output to upswing and downswing in prices.

Murthy and Naidu conduct the study in Guntur district of Andhra Pradesh with the objective to estimate the break-even output for marginal, small and large farms of turmeric. They find that the turmeric growers are able to cross the break-even point in the production.

Jeromi and Ramanatha throw light on the instability in world pepper market. Their study reveals that fluctuations in international price of pepper is mainly due to the change in the supply conditions rather than demand factor. The competitive power of pepper in the international market is closely related to the unit cost of production.

Oommen in his study of existing cropping pattern of Kerala, indicates the lines of some reallocation in order to optimise the agricultural income and output in the country. The climate, topography and soil structure of Kerala make it eminently suitable for the production of several commercial crops like
pepper, cardamom, coconut, arecanut, ginger and lemongrass. He is of the opinion that a specialisation strictly on the basis of comparative advantage would lead to the best utilisation of agricultural resources of the State.

Sankaranarayanan and Karunakaran outline the distinctive features of the agricultural sector of Kerala. In the first place, Kerala surpasses all the other states of India in respect of the high pressure of population on land. Secondly, on account of a large number of valuable cash crops, the agricultural sector is more commercialised in the state than elsewhere. Thirdly, food production has always fallen far short of Kerala's requirements.

Pillai brings out the two serious issues relating to agricultural development in Kerala. The first is the crisis faced by the two most important crops of the state, paddy and coconut particularly since 1975-76 manifested through the steep decline in the area under rice on one hand and steep decline in productivity of coconut on the other. The second and more disturbing is the tendency among the farmers for shifting the area under food crops in favour of cash or plantation crops.

Prakash also indicates that the area under paddy has fallen below the level that existed in 1961 and more than 80% of the food grain requirements of Kerala in 1991 was met through the imports from other parts of India. The major structural changes that have occurred in the Kerala economy are a decline in the sectoral share of the primary sector and an increase in the tertiary sector.

Sivanadan argues that Kerala has to devise its own strategy for agricul-
tural development keeping in view its topography, cropping pattern and relative advantages of the predominance of high value cash crops.

The supply response or acreage response of agricultural crop is one of the important procedural tools of crop production. A number of researchers assessed the farmer's response to price changes in allocating the area for different crops under different agro-climatic conditions in India. In most of the farmers' response studies Nerlovian model has been used either as such or with minor modification.

Beauer and Yamey analyse response to price of major agricultural commodities in Nigeria. Their findings show clearly the producers' awareness of economic opportunities and their readiness and eagerness to take advantage of them. Whenever higher prices are announced or even generally anticipated for the following season, producers and intermediaries withheld supplies in the closing months of the previous season, while supplies are rushed forward when a reduction is announced or anticipated.

Krishna in his study of Punjab region examines the widely prevalent notion that peasants in poor countries respond very little or negatively to price movements. He estimates short-run and long-run elasticities of supply of agricultural commodities derived from time series data. Nerlovian adjustment model is used for the study. The results reveal that relative price movements have systematic and significant marginal effects on crop patterns. He also finds that the rapidity of adjustments of the acreage of crops by the peasants in response to changing circumstances are not very different from that of the
United States.

H. Singh brings out the reasons for the introduction of groundnut crop in Madhya Pradesh. The information for the study is gathered through a field survey. Relative economic advantage is the most important factor leading to increase in groundnut acreage, availability of seed comes next in terms of importance.

The study of Falcon in West Pakistan provides a number of insights into farmer response to price changes in underdeveloped areas. The analysis reveals that while there have been significant short-run acreage shifts in response to changed relative prices there has been little responsiveness in the allocation of non-land factors. He is of the opinion that this limited price responsiveness does not imply automatically that farmers do not respond to economic incentives. For, they must be given opportunity to react, before they can be labeled as unresponsive. The policy conclusion is that unless there is a thorough going reforms in the services and facilities made available to farmers, higher prices alone can have little effect on increasing yield per acre.

Jakhade and Majumdar find that it is very difficult to isolate the impact of the price factor on production or acreage. In an economy like India where production is dependent to a considerable extent on climatic factors, response is reflected more directly on acreage. Their investigation shows that the area under jute is influenced by the relative prices of jute and rice. The price of rice may be considered largely to determine the opportunity cost of using land for jute production because normally rice production has to be forgone in order to
grow jute.

In an econometric study on acreage response to prices in respect of wheat in Uttar Pradesh during 1950-51 to 1962-63 Rao and Jaikrishna have employed twelve different price expectation models. Out of the various price expectation models, two models - one based on the average of prices in all preceding years and the other based on predicted price from the linear trend in the realised prices - are found to be consistently good.

M. George examines price structure and relative changes in acreage under different crops during 1952-53 to 1961-62. Six commodities, viz., paddy, coconut, sugarcane, tapioca, cashewnut and rubber which cover 73% of the cropped area of Kerala are selected. The study reveals that there is a close correspondence between changes in relative prices and acreages of competing crops. The policy conclusion is that it is necessary to stabilise the relative prices of food crops in terms of the other agricultural commodities produced in the State.

Devi and Rajagopalan in their study make an attempt to find out the relationship between the acreage under groundnut and the acreages under competing crops. The study is conducted in North Arcot district of Tamil Nadu. The year to year fluctuations in the acreage of these two has been worked out and it is seen that there is an inverse relationship between the two. They observe that the influence of relative prices on production is mainly through shifts in acreage between competing crops and not through changes in productivity. They also conclude that for accelerated growth in agricultural produc-
tion a price policy for an individual crop would not help, for, the prices of its competing crops do influence its production.

Mellor (The Functions of Agricultural Prices in Economic Development) discusses three main functions of agricultural prices. They are to serve (i) as an allocator of resources, signaling to both producers and consumers regarding the level of agricultural production and consumption (ii) as a distributor of income and (iii) as an influence on capital formation.

Kahlon and Lalitha have conducted the study in Punjab to gauge the impact of price changes on the farmers decision to allocate land to different crops. They find that the acreage allocation under wheat is affected considerably by wheat price. Since wheat and gram are competing crops, relatively higher wheat prices are bound to increase the acreage under wheat and decrease the area under gram.

Kaul and Sindu attempt to obtain the best estimates of the response of Punjab farmers to prices while making a decision about acreage allocation to major crops, viz., wheat, paddy, maize, groundnut and cotton. Harvest prices are taken for analysis and provides economic justification for such a selection. In Punjab 70 to 95% of the produce is sold in the market within two months after harvest. They are of the opinion that one of the important problems is to get an unbiased estimate of response of the farmers to risk elements involved in different crop enterprises. The study demonstrates that maize, groundnut and desi-cotton are relatively high risk crops where as paddy and wheat are relatively low risk crops mentioned in the descending order of risk.
Maji et al. are of the opinion that given a stable production technology, the acreage response functions may be used for projection of supply. But in times of changing technology the acreage elasticity estimates based upon time series may be widely different from the actual current estimates. In such situations the price elasticity of output rather than acreage should be more meaningful.

Madhavan makes an acreage response analysis with respect to relative price, yield per acre and rainfall for major cereal and commercial crops grown in Tamil Nadu. The results indicate that the farmer's response to variations in product price and yield per acre is almost equal to or greater than those acreage elasticities reported in earlier studies. However, there is no single variable which is equally important in all the crops.

Misra conducts the study in Gujarat for the period 1949-50 to 1968-69 with the objective to examine the average response to relative prices for cotton, groundnut and bajra crops. The study reveals that in most of the districts farmers are quite responsive to relative price changes in their acreage allocation under cotton whereas in the case of groundnut it is per acre gross return that differentiates its substitute crops.

R. Singh, D. Singh and Rao in their study examine three methodological issues, i.e., (i) whether the Nerlovian adjustment lag model can prove itself to be better than the traditional model as claimed by Nerlove and others; (ii) which of the prices enters the farmers' expectations most vitally in their resource allocation decisions and (iii) how can the effect of inter regional charac-
teristic be quantified and incorporated in the macro model to yield some meaningful results.

I. Singh and Kumar highlight the farmers' responsiveness to the changing price levels and other factors affecting the output supply for wheat, rice and bajara in Haryana state over the period of 1960-61 to 1972-73. The values of Nerlovian coefficient adjustment are found low which meant that although the farmers are adjusting to the changing levels of price, price variability and yield, yet the adjustment is not rapid.

D. Sidhu examines the impact of changes in wheat and fertilizer prices on wheat yields in Punjab. The results indicate that wheat fertilizer price ratio significantly influence the use of fertilizers. This in turn affects substantially the wheat yields.

In another study relating to response of sugarcane producers in Uttar Pradesh Jagadishlal emphasises that the prices of competing crops must be taken into account while evolving a suitable price structure for sugarcane.

Ninan analyses the growth behaviour and factors influencing supply of oil seed in India. He concludes that both technological and price factors are important variables influencing the supply response of edible oilseeds. Hence the strategy for boosting the country's edible oilseed output should lay emphasis on both technological and price factors.

J. Sidhu and R Sidhu outline the factors determining area under crops like cotton, sugarcane, oilseeds and potato in Punjab. They find that the introduction of new seed irrigation fertilizer technology supported by remunera-
ative price policy encouraged the farmers to put more area under the two most profitable cereal crops, i.e., paddy and wheat.

The study of Reddy brings out the fact that favourable price alone may not induce the farmers to increase paddy output in order to attain a desired target. In addition to price incentives non-price incentives like provision of assured irrigation on high yielding variety seeds are equally important in achieving the targets of paddy output.

Raju and Sreekumar in their study for the period 1970-71 to 1987-88 analyse supply response and trends in area, production and productivity of ginger in India. The study reveals that area, production and productivity of ginger in the country have increased considerably during the period under study. The farmers are comparatively less responsive to price in making their planting decisions.

Choudhary, K. Singh and R. Singh examine the growth rates and the factors affecting area, production and productivity of important pulse crops in Bihar. The study shows that area and production of pulse crops is a function of various factors such as annual rainfall, area under irrigation, current and lagged year prices of the crop and its various substitutes and consumption of fertilizers.

The study of Ram and Kumar in Gujarat reveals that cotton has contributed towards the increase of area under groundnut. They find that the area under cotton has decreased with an increase in area under groundnut.

Shetti et al. evaluate the supply behaviour of Jowar in Karnataka. The
study reveals that the higher expected yield generally stimulates the farmers to allocate smaller portion of land, than before to the crop, with the farmers' anticipation that their own farm consumption requirements generally fixed would not be disrupted. They conclude that with the favourable yield expectations, farmers sought to divert some area from jowar to some other crop that would fetch higher monetary returns.

Janaiah et al. analyse the farmers' response to price changes in allocating area for major commercial crops in Andhra Pradesh for the period 1956-57 to 1985-86. They find that the area allocating decision of the farmers for commercial crops is predominantly influenced by changes in farm harvest prices of selected crops and their competing crops.

Goyal examines the effect of farm prices on resource allocation, income and poverty on Haryana farms. The study reveals that the average income from all the crops taken together declined due to relatively more increase in input prices.

Marketing is essential to complete the process of production. An efficient marketing system is one of the key components of enhancing agricultural productivity which encourages the farmers by giving them fair return for their produce. The agricultural producer in India is said to suffer by way of not getting the due prices for his produce. Studies on price spread of various crops indicate that the difference between the price paid by the consumer and that received by the producer consists of marketing cost and marketing margin.

Merh examines the cost of marketing the cotton crop in Karnataka. He
is of the opinion that the growers of cotton realise a better share than those of any other agricultural commodity in India. Cotton growers secure a better percentage of the consumers' price due to (i) keen competition in cotton trade, (ii) regulated markets and (iii) cooperative marketing.

Pavaskar and Radhakrishnan examine the performance of the marketing system of cotton in Maharashtra with reference to the cost of marketing. The study is confined to only two years, viz., 1962-63 and 1967-68. The results reveal that in the marketing of raw cotton, the farmers' share in market price is as high as 90%. The evidence suggests that the existing system of cotton marketing is by far more economical than is often believed by its critics.

Patel tries to find out how the rising groundnut oil prices have been divided among farmer, miller, wholesaler and retailer during 1965-66 to 1967-68. The study reveals that within the price spread, while the percentage shares of retailer and wholesaler have fallen, the miller has taken a larger and larger slice of the price spread. Thus the miller has gained continuously at the cost of the farmer and other intermediaries.

Thakur (Pricing Efficiency of the Indian Apple Market) analyses the pricing efficiency of the Indian apples. The study shows that the cost of marketing apple is high enough and the apple grower gets generally less than 50% of the consumers' price. It is more profitable to sell apple in the distant markets in the country than in markets situated near the production area.

Joshi and Sharma attempt to measure the retail farm price spread of rice for the period 1960-61 to 1973-74. The study is conducted in six major rice
growing states, namely, Andhra Pradesh, Bihar, Karnataka, Orissa, Tamil Nadu and West Bengal. The results indicate that there exists wide seasonal as well as spatial variabilities in the price spread. They suggest that the magnitude and direction of these factors must be kept in view while formulating a sound price policy that will take care of the welfare of the farmers and the consumers.

Sinha et al. make an attempt to survey the two markets in Bihar to determine the costs and margins and the consequent price spread of important food grains, namely, rice, wheat and maize. The study indicates higher marketing costs and large price spread are largely on account of handling and storage losses, high transport charges, higher costs of weighing, loading and unloading and high commission charges charged by intermediaries.

Suryaprakash et al. demonstrated the number of intermediaries for selected agricultural commodities in Karnataka and estimate the margins realised by various intermediaries. They find that there is no unique channel in the marketing of agricultural commodities. The price spread varied from commodity to commodity and again for each commodity according to the number of intermediaries or the type of marketing channel involved.

Swarup et al. estimate the price spread and marketing margins of Himachal apples in North India. It is hypothesised that the producers' share is not increasing despite the sharp increase in the price of apples. The rise or fall in the producer's share is not proportional to the rate of rise or fall in the price level.

C. Singh and Vasisht examine the changes in producers' share in the
consumer’s rupee of agricultural commodity in India. There exists wide re­
gional disparities in the producer’s share in consumer’s rupee. They find that
marketing margins are inversely related to market arrivals of agricultural prod­
ucts.

In the study of marketing efficiency Rajagopal identifies different paddy
marketing channels in Madhya Pradesh. The results reveal that the farmers get
the highest benefit if they sell their produce through the cooperatives market­
ing and processing units. He suggests that the cooperative should be given
more incentives by the Government to enable them to perform the marketing
activities in the village more efficiently giving the farmers their highest share.

Sreekumar, Haridasan and Rajashekharan use concurrent margin method
for the computation of price spread of natural rubber for 1985-86. They
conducted the study in Kottayam district of Kerala. It is found that the share
of producer in the consumer’s price is 88% of the price paid by the consumer.
It is suggested that efforts should be made by the cooperative societies to give
financial and other assistance to growers so that they may be attracted to sell
their produce through the societies.

Saini et al. examine the efficiency of various ginger marketing channels
in Himachal Pradesh and identify different constraints in the marketing of gin­
ger. The study reveals that the marketing channel comprising those of the
producer, primary wholesaler, secondary wholesaler, retailer and consumer is
the most efficient one both from the view point of the producers and the con­
sumers. The main bottlenecks of marketing as identified by the study are
nonpayment of sale proceeds at the time of sale, non-availability of scientific storage facilities, inadequate information relating to market prices and market arrivals.

Bhusan discusses the structural weakness of agricultural marketing in India. Agricultural markets in India are dominated by brokers, commission agents, and middlemen. As a result of in-built chain of these functionaries, there exists big gap between the farm gate price and consumer price. The market mechanism of agriculture is not in perfect competitive order due to complicated marketing channels which benefit neither the growers nor the consumers. It is therefore suggested that creation of basic infrastructure for the development of modern marketing system is very crucial for strengthening the competitiveness of Indian agriculture in the global market.

From the literature reviewed above, it is clear that no study has been conducted to provide a detailed information about all the aspects of ginger cultivation in Kerala.