MANUAL ON
GOOD AGRICULTURAL MARKETING PRACTICES FOR CHILLI

सत्यमेव जयते

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PREFACE

The Inter- Ministerial Task Force on Agricultural Marketing Reforms in their Report in May 2002, suggested several measures for undertaking various reforms in the Agricultural Marketing System in the country. In consideration of the keen competition in the domestic, as well as export markets, it has become imperative to launch awareness programme vigorously to up date and up-grade the technical know-how of various stakeholders involved in the marketing of farm produce in multidimensional aspects of agricultural marketing system.

Chillies are integral and the most important ingredient in many different cuisines around the world as it adds pungency, taste, flavour and color to the dishes. Indian chilli is considered to be world famous for two important commercial qualities—its colour and pungency levels. Some varieties are famous for the red colour because of the pigment **Capsanthin** and others are known for biting pungency attributed to **capsaicin**. The other quality parameters in chilli are length, width and skin thickness.

Considering it's importance, an attempt has been made to draft a comprehensive and educative manual covering various aspects of it's post-harvest managerial measures. Accordingly, the present ***Manual on Good Agricultural Marketing Practices for Chilli*** has been drafted by **Dr. Rajendra R. Karpate, Marketing Officer** under guidance of Shri Rakesh Saxena, Dy. Agricultural Marketing Adviser, Branch Head Office, Nagpur.

The Government of India should not be regarded as assuming the responsibility for any of the statements contained in this manual. However, any creative suggestion to bring about further improvement in the manual would be most welcome.

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CHILLI

Family : Solanaceae

Genus : capsicum

Species : *annuum* and *frutecens*

1.0 INTRODUCTION

Chilli is one of the most important commercial crops of India. It is grown almost throughout the country. There are more than 400 different varieties of chillies found all over the world. It is also called as *hot pepper, cayenne pepper, sweet pepper, bell pepper, etc.* It's botanical name is "***Capsicum annuum***". The **world's hottest chilli "Naga Jolokia"** is cultivated in hilly terrain of Assam in a small town Tezpur, India. Different varieties are grown for vegetables, spices, condiments, sauces and pickles. Chilli occupies an important place in Indian diet. It is an indispensable item in the kitchen, as it is consumed daily as a condiment in one form or the other. Among the spices consumed per head, dried chilli fruits constitute a major share. Currently, chillies are used throughout the world as a spice and also in the making of beverages and medicines. If some varieties of chillies are famous for red colour because of the pigment 'capsanthin,' others are known for biting pungency attributed to 'capsaicin.' India is the only country which is rich in many varieties with different quality factors. Chillies are rich in vitamins, especially in vitamin A and C. They are also packed with potassium, magnesium and iron. Chillies have long been used for pain relief as they are known to inhibit pain messengers, extracts of chilli peppers are used for alleviating the pain of arthritis, headaches, burns and neuralgia. It is also claimed that they have the power to boost immune system and lower cholesterol. They are also helpful in getting rid of parasites of gut.

The fruit of chilli or *Capsicum* plants have a variety of names depending on place and type. It is commonly called chilli pepper, red or green pepper, or sweet pepper in Britain, and typically just capsicum in Australian and Indian English. The large mild form is called bell pepper in the US and Canada. It is called paprika in some other countries (although paprika can also refer to the powdered spice made from various capsicum fruit). The original Mexican term, *chilli* (now *chile* in Mexico) came from the Nahuatl word *chilli* or *xilli*, referring to a larger *Capsicum* variety cultivated since 3000 BC, as evidenced by remains found in pottery from Puebla and Oaxacahttp://en.wikipedia.org/wiki/Capsicum -

cite_note-0#cite_note-0. It is universally called by different names such as Pimenton, Puvre de Guinee, Filfil Ahmar, Paprika, Spaanse Peper, Peperone, Pimento, Struchkovy pyeret, Togarashi, Hesiung Yali chiao, Lal-mirch,etc.

In Indian subcontinent, chillies are produced throughout the year. Two crops are produced in kharif and rabi seasons in the country. Chilli grows best at 20–30°C. Growth and yields suffer when temperatures exceed 30°C or drops below 15°C for extended periods. The crop can be grown over a wide range of altitudes from sea level upto nearly 2100 meter.

Utilization:

Processed products such as dehydrated chilli, pickle, powder, paste, sauce, etc., can be prepared for higher returns. Generally growers sell chilli directly even though real return can come only from processed products. Hence, farmers must be educated in the processing of chilli for value addition. Juice of chilli brings a warming flush to the skin and eased soreness. Capsicum has a tonic and carminative effect and is especially useful in a tonic dyspepsia. Pungent types of chillies are used by the pharmaceutical industry in the preparation of stimulant and counter irritant balms and in stomach ache, carminative and stimulant formulation.

The pungency in chilli is due to the alkaloid capsaicin contained in the pericarp and placenta of fruits. Capsaicin is a key ingredient in many liniments and together with other chemical compounds found in chilli peppers is prescribed in the treatment of rheumatism and bruises. It is also used to treat stomach aches involves poor functioning of stomach muscles. Capsaicins are also being used in clearing the lungs and sinuses, enhance the flow of digestive juices, which trigger the brain to release endorphins (natural pain killers), help to neutralize cavity causing acids, protect the body against cancer through anti oxidant activity. Because of capsaicin's specific excitatory and neurotoxic properties on c-fibres, capsaicin has been extensively used for relieving pain and thermo regulation. Capsicum is administered in the form of powder, tincture, lineament, plaster, ointment, medicated roll etc. Two types of pain relief products are currently being marketed including cream containing 0.75 percent capsaicin (eg. Zostrice- TM) and plaster containing three percent oleoresin (Vorwek-TM). It also corrects bowel disorders and it prevents the formation of puss in the wound and because the red-hot chilli pepper is an inhospitable place for bacteria, its extracts have been used as antibacterial agents.

Oleoresin is a viscous liquid, possessing aroma and flavor, is also extracted from finely ground chilli powder. Capsicum oleoresin is used in medicine internally as a powerful stimulant and carminative and externally as a counter irritant in the treatment of diseases such as rheumatism.

- Swallowing seeds of chillies with hot water are helpful in reducing stomach ache due to cold.
- Capsicum has a powerful action on the mucous membrane and a gargle made of chillies and tannin is found to be beneficial in sore throat.
- An infusion with cinnamon and sugar is a valuable drink for patients suffering from delirium tremens. The same preparation is also used as a rubefacient for the tonsils in tonsillitis.
- Drinking of hot water containing one spoonful of powdered chilli and one spoonful of salt is beneficial for cholera.
- Capsicum with a plaster of garlic, pepper and liquid amber is an efficient stimulant in chronic lumbago.
- In addition to this, applying a decoction of powered red chilli in the part affected by a dog bite or snakebite minimizes the affect of the poison.
- In Homeopathy, chillies are being used for curing homesick, sleeplessness, head ache or coughing, eye pain, burning pain in the muscles membranes, male impotence etc.

Capsicum is well known for their health benefits but excessive use of chillies is harmful.

2.0 ZONE-WISE MAJOR COMMERCIAL VARIETIES

Sl. No.	State	Variety
I	**SOUTH ZONE**	
1	Andhra Pradesh	Jwala, X-235, G-1, G-2, G-3, G-4, G-5, LCA-205, 206, 235, Karakulu, Sannalu, Dippayerupu, Punasa, Maduru, Pottibudaga, Hybrid, Bharat, Aparna, Pottikayalu, Cullakayalu, Barak, Mota, Chapta, Desi Sindu, Kiran, Chikkaballapur (Lavangi), Sapota.
2.	Karnataka	Jwala, Bayadgi, G-1, G-2, G-3, G-4, G-5, Pusa Jwala
3.	Kerala	Jwala, Sadabahar, Champa, CO-1, Nandan, K-1

4.	Pondicherry	K-1, K-2, CO-1, CO-2
5.	Tamil Nadu	K-1, K-2, CO-1, CO-2, CO-3, PMK-1, PMK-2, Borma Wonder, Sannam, Palam
II	**NORTH ZONE**	
6.	Bihar	Rori, Moti Mirchi, Chittee
7.	Haryana	NP-46-A, Pusa Jwala, Pusa Summer
8.	Himachal Pradesh	Solan Yellow, Hot Portugal, Pachad Yellow, Sweet Banana, Hungarian Wax, Punjab Lal
9.	Jammu & Kashmir	NP-46-A, Ratna Red, California Wonder
10.	Punjab	CH-1, Sanauri
11.	Uttar Pradesh	NP-46, Jwala Pant C-1, Desh, Pahadi, Kalyanpur, Chaman and Chanchal.
III	**EAST ZONE**	
12.	Assam	NP64-Am Pusa Jwala, Surya Mukhi, Krishna, Balijuri
13.	Tripura	Jwala, Suryamukhi, Krisha, Balijwai
14.	West Bengal	Siti and Suti, Akashi, Kajari, Bow, Dhani, Bullet, Dhala.
IV	**WESTERN ZONE**	
15.	Goa	Cacana, harmal, Tanvati, Lavangi
16.	Gujarat	K-2, Pant C-1, Jawahar-218, NP-46-A, Jwala.
17.	Rajashtan	CH-1, NP-46-A, Jwala, Pant C-1, G-3, G-5
IV	**CENTRAL ZONE**	
18.	Madhya Pradesh	Pusa Jwala, Sona-21, Jawahar, Sadabahar, Agni.
19.	Maharashtra	Pathori, Bugayati, Dhobri, Black seed, Chaski, Bhiwapuri
20.	Orissa	Jwala, Deshi, Sadabahar.

3.0 PRE HARVESTING AND POST HARVEST CARE:-

i) Harvesting should be done during early mornings, It should be avoided during rains or just after rains.

ii) While harvesting fruits, care should be taken to hold stalks firmly and fruit should be pulled upward gently, breaking the base of the stalk.

iii) For dry chillies, care should be taken that the fruit should not be ripened or over ripened.

iv) The harvesting should not be delayed as delayed harvesting gives poor quality produce.

v) The harvested fruits should be heaped indoor for 2-3 days, so that the partially ripe fruits, allows the whole produce to develop a uniform red colour.

vi) The best temperature for ripening is 22-25^{o} C and direct sunlight is to be avoided since this can result in development of white patches.

vii) The ripen pods should be dried in the sun spreading them on clean dry polythene sheets, cemented drying yard.

viii) The moisture content of dry pods should be kept at 8-10%

ix) Reverting solar dryer are used for drying helps in reducing of drying time.

x) Chillies should be stack at 50 to 60 cms. away from the wall.

xi) Periodic fumigations during storage with methyl bromide and phosphine is useful to control insects.

xii) The product should not be stored for longer period except in case of cold storage with moisture proof plastic liners (polythene bags) preferably between 0-10^{o} C with 65 to 70 percent humidity.

xiii) If possible while transporting from field; plastic field crates in places of sacks may be used to avoid mechanical damage.

4.0 GRADING :

Grading is pre-requisite for development of the modern marketing, trade and economy of any commodity. The Indian chillies are graded mostly by farmers on the basis of colour and size, before they are brought in the market. The damaged discoloured and immature pods are removed depending on market demand. However, at traders level the other important quality parameter are moisture and stalks. Excess moisture add weight to the pods but give room to various fungi to grow. Similarly, if the stalk of the pods is broken, exposing the seeds entirely, the seeds may fall out. On the other hand in absence of optimum moisture the pods may break and let off the seeds. Thus the seed and pod ratio in a lot is also a valuable parameter of grade.

Apart from the apparent characters of colour, size, moisture and stalk of the pods, the following features also have weightage in grading chillies.

a) Seed and fruit (pod) ratio
b) Seed size and hardness
c) Thickness of the skin of the pod and
d) Pungency.

For different purposes, the varieties of chillies are chosen by the end user. End users are mainly of two types. Such as domestic retail users and industrial wholesale users. Industrial users who prepares Chilli powder gives preference for colour-pungency, fleshly skin and less seeds. Whereas, the domestic users prefer all varieties for different occasions. There are several local and conventional grades followed by the farmers, village merchants and itinerant merchants. The visual assessment of grades by seeing the lots/heaps and by picking hand full of pods and analyzing them to enable the traders to adequate and assess the prices both in open and closed auction.

5.0 PACKAGING :

Packaging is an important function for every produce and so is in marketing of Chilli. It is a practice to protect the produce from any damage during storage, transportation and other marketing aspects. It is required at every stage of marketing from the producer to the consumer. In recent years, packaging plays an important role in marketing of produce. Good packaging of chilli not only facilitates convenience in transportation and storage but also attracts consumer to pay more. The packaging reduces the marketing cost and protects the quality.

Packaging materials

The good packaging material must posses the following qualities:

- ✓ It must protect quality and quantity.
- ✓ It must prevent spoilage during transit and storage.
- ✓ It must tell information about quality, variety, date of packing, weight and price etc.
- ✓ It must be convenient in handling operations.
- ✓ It must be convenient to stack.
- ✓ It must be cheap, clean and attractive.
- ✓ It must be biodegradable.
- ✓ It must free from adverse chemicals.
- ✓ It should be useful after the first use.

Method Of Packing :

In India Chillies are packed mostly in gunny bags and rarely in bamboo baskets (North eastern states). It is found that there is no uniformity in the packing size of chillies in the country. Packing material used and the capacity of packages are different in different states. The capacity of gunny bags is generally 20-25 kgs. in North Eastern States and in Punjab. In Andhra Pradesh and Tamil Nadu, the pack size is more than 40 kg. & in Andhra Pradesh the pack size is even 100 kg. (Prakasam district). In case of basket packing the capacity is 20-30 kg. In Maharashtra Chillies are transported by the farmers in bulk on bullock carts with gunny cloth. Such packing is known as "GONT" with 400-500 kg. capacity. Generally all the farmers use old gunny bags to pack chillies before selling. Only the exporters repack them into good new gunny bags and some times with polythene liner inside. Chillies are also packed in polythene bags. In some states like Kerala, Maharashtra, Andhra Pradesh and Tamil Nadu, the pack size varies from district to district.

As per the capacity, the size of the bags also vary accordingly. Packing in 3000 gauge low density polyethylene film pouches are also done for 100 g. consumer unit packs to give a shelf – life of 3 to 6 months. Under tropical conditions, 200 – gauge low and high density polyethylene films are suitable for packing of whole chilli in units of 250 g. each. Such packs can be stored at a cool, dark, dry place for about a year.

6.0 TRANSPORTATION:

Transport is vital for the economic development of a country, since every commodity produced requires to be transport from producing area and distribution stages. Quick, cheap reliable and convenient mean of transport are essential for boosting production and trade.

Chillies are mainly transported in gunny bags (old or new) and some times in bamboo baskets. Transport of Chillies is broadly divided into two phase's i.e. (i) from farm to Assembling Market and (ii) from assembling market to consuming markets/places. In the first phase, the producers and village/ itinerant merchants are involved and in the second phase wholesalers and processors are involved. Head loads, cartloads and tractor loads are generally used depending on the economic status and land holdings by the Chilli producers in the area. Of course, this does not have any bearing on the dispatches of chillies from the market places.

There are different modes of transport used in Chilli transportation. Road and Rail transport is normally used for internal markets; however, for export and import mainly Sea transport is used. The most common modes of transportation are:-

1) Road Transportation: Road transport is the most pre-dominant mode of transport used in the movement of chilli right from the producing fields to the ultimate consumer. The means of road transport are used in different parts of the country to transport chillies: are Head load, Cant, Tractor, Trolly, Bus etc.

2) Railway: Railway is one of the most important means of transportation of chillies. Railway is cheaper than road transport and it is more suitable for longer distance, as well as for large quantity. The tariff charges for the transport of chillies depends on distance, quantity, etc. Railway transportation requires more handling cost as it requires loading and unloading charges and local transportation cost.

3) Water Transport: It is the oldest and cheapest mode of transport. It includes river, canal and sea transport. However negligible quantity of chillies is transported through internal waterways. The export and import of chillies is mainly done by sea transport. This transport system is slow but cheap and suitable for carrying large quantity of chillies.

- **Selection of Mode of Transportation:**

Following points should be considered for the selection of mode of transportation:

- The mode of transportation should be cheaper among available alternatives.
- It should be convenient during loading and unloading of Chilli.
- It must protect Chilli during transportation from adverse weather conditions.
- It must deliver Chilli to consignee in stipulated period as the price changes every day.
- It should be easily available particularly during post harvest period.

7.0 STORAGE:

Storage is a very important component of marketing which has a direct impact on the prices. Adequate storage facilities will help in effectively distributing and marketing at all times and in all places. Storage function thus is responsible for balancing supply and demand situation.

In India, different states follow different methods of storage. In some states the chillies are stored in markets with the commission agents in their shops for 5 to 30 days. The farmer also stored chilli in the houses for about 5 to 15 days. The chillies are mostly

stored in gunny bags by the producers, wholesaler and exporters for a period of 1 to 6 months depending upon the market conditions. In places like Orai chillies are stored by producers in earthen pots even for one year. In cities like Murshidabad & Jalpaiguri of West Bengal chillies are stored in Bamboo basket by the farmers in their own house.

The farm level storage capacity among the Chilli growers is not adequate in the country. Well maintained storage units in the market yards with low and uniform storage charges would encourage more farmers to store Chillies in the market places and improve their bargaining capacity.

Major storage pests and their control measures:

Dried chillies when stored are, often attacked by drugstore beettle. Stegobium paniceum (Linn) and the cigarette beettle Lasioderma serricorne. The Artbrodeis species also feed on chillies, though the loss caused by them is negligible. Spreading chillies in thin layers and exposing them to sunlight will eliminates the infection if infested by storage pest. If large quantities are infested with these pests, fumigation is the only remedy.

Storage Structures:

These facilities are used to store products, which can be any one of the following:

Containers: These may be gunny sacks, plastic bags, glass jars, or any other type of containers made of metallic slate, earthen pots, etc.

Open Spaces: This may be a drying floor, or any open space near the house, etc.

Shelves: These are any shelves in the house or barn, which can be used to place products for storage.

Underground Storage Chambers: These are chambers built underground either to save space or for other reasons, e.g. lower temperatures, ease in protection against rodents and birds, etc.

Storage Facilities

Storage facilities are of three types, namely

(i) Farmer storage, /Producers storage
(ii) Community storage (Rural Godowns/Mandi Godowns), and

(iii) Commercial storage (Central warehousing/State Warehousing Corporations):

Farmer Storage: This is made up of locally available materials. The produce is stored in heaps on the ground for periods varying from a few days to a month or more after which it is transferred to temporary structures

Community Storage: These are storage facilities owned by farmers' cooperatives, farmer groups, or any other types of community establishments.

Commercial Storage: These are storage facilities owned by middlemen, millers, exporters, or manufacturers (of certain industrial products) for their own commercial benefit. Generally speaking, this type of storage is more modern than the first two types such as having better construction materials and layout, with fumigation facilities. The capacity is also much larger than the first two types. The use of broad-spectrum synthetic pesticides has been popularized and practiced in commercial storage facilities. Commercial storage facilities mainly includes Rural Godowns, Mandi Gowdown, Central & State Warehousing corporation, etc.

8.0 IMPORTANT ASSEMBLING MARKETS:

The following are the major assembling markets for chilli producing states in the country.

Major markets of Chilli producing states

States	Important markets
Andhra Pradesh	Guntur, Warangal, Khammam, Krishna, Prakasham, Hyderabad, Pundur Nizamabad, Cuddpah, Rajamundry, Nellore, Srikakulam, Vijaynagaram, , Paddapallim, Eluru, Tadepalligudem, Pittapuram, Jagital and Prakasam.
Assam	Silchar, Kamarup, Guwahati, Barapeta, Karbi
Goa	Maragoan, Ponda, Mapua, sattri, bicholim
Karnataka	Dharwad, Mysore, Hasan, Bangalore, Bellary, Ranibennur, Hubli, Gadag, Byadgi
Madhya Pradesh	Indore, Khargone, Jabalpur, Katni, chindwara, Khandwa, Gwalior, Morena, Bhind, Bhopal
Maharashtra	Nagpur, Nasik, Ahmednagar, Sholapur, Aurangabad Nanded Lasalgaon Amravati, Dhulia, Chandrapur, JalgaonAnjangaon,

	Morshi, Dandaichi, Chimur, Amainer, Achalpur and Sangli.
Punjab	Amristar, Nabha, Patiala, Sunam
Rajasthan	Jodhpur, Ajmer, Bhilwara, Pali, Sikar, Bharatpur, Swaimadhopur
Tamil Nadu	Coimbatore, Ramanathapuram, Tuticorin, Tirunelveli, Virudunagar, Kanayakumari, Salem, Trichi, Villupuram, Cuddalore Pollachi, Arialur, Madurai, Theni, Podukottai, Pattukottai, Tanjaur, Pollachi, Thindivaram, and Virudhachalam.
Uttar Pradesh	Orai, Jhansi, Ramnagar, Ujhani, Lucknow Bareily, Khurja.
West Bengal	Coochbehar, Haldibari, Dinhata, Mathabhanga, 24 paraganas Gonheta, Amalgora, Salboni, Sat Bankura, Maynaguri, Falakata Dhupguri Dinajpur and Jhargram.
Orissa	Bhubaneswar, Jagat Singhapur, Cuttack, Jaleswar and Baripada.
Gujrat	Dahod, Jhalod, Gonded, Banankanta, Rajkot

9.0 MARKETING CHANNELS:

Marketing channels have great influence on marketing costs which includes transport, commission charges, etc. and market margins received by the intermediaries such as trader, commission agent, wholesaler and retailer. Thus the price to be paid by the consumer and share of it received by the farmer producer is decided by the market channel involved. Channel is considered as good or efficient which makes the produce available to the consumer at the cheapest price and also ensures the highest share to the producer.

Following are the marketing channels through which Chillies are marketed in India:

Channel I :- Producer ▸ Village Merchant ▸ Middle Men ▸ Commission agent ▸ Whole seller ▸ Retailer ▸ Consumer

Channel II :- Producer ▸ Retailer ▸ Consumer

Channel III :- Producer ▸ Pre harvest contractor ▸ Wholesaler ▸ Retailer ▸ Consumer

Channel IV :- Producer ▸ Commission agent/ Wholesaler ▸ Retailer ▸ Consumer

Channel V :- Producer ▸ Commission agent ▸ Retailer ▸ Consumer

Criteria for selection of channels:

There are many marketing channels involved in marketing of chilli. The following are the criteria for the selection of efficient marketing channels.

- Channel which ensures reasonable return to producer,
- Transportation cost in the channel are minimized .
- Commission charges and market margins received by the intermediaries, such as trader, commission agent, wholesaler and retailer are relatively low.
- Short channel with minimum market cost.

10.0 MARKETING INFORMATION AND EXTENSION

Marketing information:

Marketing information is important tool for decision making at all the stages right from farm production to ultimate consumption for all the participants in marketing channel. Marketing information is essential for producers in market led production. It is equally important for other market participants for trading and also for consumers. Government of India has launched Agricultural Marketing Research and Information Network Scheme through Directorate of Marketing & Inspection (DMI) to bring out improvement in the present market information scenario by linking all Agricultural Produce Wholesale markets in the States and Union Territories in a phased manner. The data received from markets is being displayed on the website **www.agmarknet.nic.in**

Marketing extension:

Market extension is a vital service to enlighten the farmers about proper marketing and improving their awareness in various aspects of post-harvest management for efficient and cost effective marketing.

Benefits :

- ✶ Provides the up-to-date information on the arrivals and prices of agricultural commodities of different markets.
- ✶ Helps the producers to take right decision, when, where and how much to produce and market the same efficiently.
- ✶ Educates the producers/traders about the post-harvest management i.e.
  a) Harvesting care
  b) Techniques to minimize losses during post-harvest period.

c) Value addition to the produce by proper cleaning, processing, packaging, storage and transportation.

- Orients the producers/traders/consumers about price trends, demand and supply situation etc.
- Orients the producer regarding the importance of grading, proper storage, co-operative/group marketing, direct marketing, contract farming, future trading etc.
- Provides the information about the sources of credit availability, various Govt. schemes, policies, rules and regulations etc.

Sources:

The following are the sources of marketing information available in the country:

1.Directorate of Marketing and Inspection (DMI), NH-IV, CGO Complex, Faridabad.

Website: www.agmarknet.nic.in

2. Spices Board (Ministry of Commerce & Industry, Govt. of India) 'Sugandha Bhavan" N.H.By Pass, Palarivattom.P.O Cochin – 682025, Kerala, India
Phone : 91-484-2333610 – 616 Fax : 91-484-2334429, 2331429
E Mail: spicesboard@vsnl.com

3.National Horticulture Board Ministry of Agriculture, Govt of India, 85, Institutional Area,Sector – 18 Gurgoan - 122015 (Haryana) Website : www.nhb.gov.in

4.Directorate of Economics and Statistics, Shastri Bhavan, New Delhi.

Website: www.agricoop.nic.in

5. Directorate General of Commercial Intelligence and Statistics (DGCIS),

1, Council House Street, Kolkata-1Website: www.dgciskol.nic.in

6. Agricultural Produce Market Committees (APMC),

7. State Agricultural Marketing Boards, at different state capital

8. Federation of Indian Export Organisations (FIEO), PHQ House(3rd Floor) Opp. Asian Games, New Delhi-110016

9. Kisan Call Centers

10. Agricultural & Processed Food Products Export Development Authority (APEDA), NCUI Building 3, Siri Institutional Area, August Kranti Marg,

New Delhi - 110 016 Website: www.apeda.com

11. Different websites on Agricultural Marketing Information

11.0 ALTERNATIVE SYSTEMS OF MARKETING:

Role of Government in managing markets is on decline worldwide. It is not easy to bring major changes in the traditional marketing system. The only way to modernize marketing is to promote alternative marketing system and that may operate parallel to and in addition to present marketing system. The purpose of the proposed alternative marketing is to promote modern trade practices, which in turn will pave way for transparency and efficiency in market.

Various forms of alternate marketing like (a) direct marketing, (b) marketing through farmers interest group, (c) setting up of terminal markets, (d) forward and future market, (e) e-commerce, (f) setting up of mega markets, (g) negotiable warehouse receipt system etc. have been suggested by Expert Committee on Agricultural marketing headed by Shankarlal Guru

Direct Marketing:

Direct marketing is an innovative concept, which involves marketing of produce by the farmer directly to the consumers/processors without any middlemen. Direct marketing enables producers and processors and other bulk buyers to economize on transportation cost and improve price realization. It also provides incentive to large scale marketing companies i.e. processors and exporters to purchase directly from producing areas. Direct marketing by farmers to the consumers has been experimented in the country through *Apni Mandis* in Punjab and Haryana. The concept with certain improvements has been popularised in Andhra Pradesh through *Rythu Bazars.* In these markets, alongwith fruits and vegetables other commodities are marketed.

Benefits:

- It increases profit of the producer.
- It helps in market oriented production.
- It helps in better marketing of chilli.
- It minimizes marketing cost.
- It encourages distribution efficiency.
- It promotes employment to the producer.
- Direct marketing enhances the consumer satisfaction-since the farmer bring the produce in a manner acceptable to consumer.
- It provides better marketing techniques to producers.

- It encourages direct contact between producers and consumers.
- It encourages the farmers for retail sale of their produce.

Contract Farming:

Contract farming is a system of farming, where selected crop is grown for marketing by farmers under a 'buy-back' agreement with an agency (entrepreneur or trader or processor or manufacturer). In the wake of economic liberalization, it has gained momentum as the national and multinational companies enter into contracts for marketing of agricultural produce. They also provide technical guidance, capital and input supply to contracted farmers. Contract farming ensures continuous supply of quality produce at pre-determined price to contracting agencies, as well as ensures timely marketing of the produce. Contract farming is beneficial to both the parties i.e. farmers and the contracting agencies.

Advantages to farmers: -

- Price stability ensuring fair return of produce.
- Assured marketing and free from involvement of middlemen.
- Prompt and assured payments.
- Proper production planning.
- Technical advice in the field of production till harvesting.
- Fair trade practices.
- Credit facility.
- Crop insurance.
- Exposure to new technology and best practices.

Advantages to contracting agency: -

- Assured supply of produce (raw materials).
- Control on need based production/post-harvest handling.
- Control on quality of produce.
- Stability in price as per mutually agreed contract terms and conditions.
- Opportunities to acquire and introduce desired varieties of crop.
- Help in meeting specific customer needs/choice.
- Better control on logistics.
- Strengthen producer-buyer relationship.

Co-operative Marketing:

"Co-operative marketing" is the system of marketing in which a group of producers join together and register them under respective State Co-operative Societies Act to market their produce jointly. The members also deal in a number of co-operative marketing activities i.e. purchasing of produce, grading, packing, processing, storage, transport, finance, etc. The co-operative marketing means selling of the member's produce directly in the market, which fetches remunerative prices. Co-operative societies market the member's produce collectively and secure advantages of economy of scale to its members. It also provides fair trade practices and protect against manipulations / malpractices. The main objectives of co-operative marketing are to ensure remunerative prices to the producers, reduction in the cost of marketing and monopoly of traders.

Forward And Future Markets :

Forward and future markets are important tools of price stabilization and risk management. Extension of future markets to all major agro-commodities was reflected in the National Agricultural Policy of Government of India announced in the year 2002 and the budget speech of the Finance Minister (2002-2003)

Commodity future markets in the country are regulated under Forward Contracts (Regulation) Act, 1952. The Forward Markets Commission under provisions of Section-3 of the Act performs advisory, monitoring, supervisory and regulatory functions in futures and forward trading. The exchanges are owned by the associations registered under the Act. At present, about 103 commodity exchanges are operating.

Broadly, three types of derivative transactions are being transacted **(i) Forward Contracts (a) Non-Transferable Specific Delivery Contract (NTSD) and (b) Transferable Specific Delivery Contract (TSD)**. The exchanges are specifically allowed for NTSD, forward contracts are not permitted. If the exchange is allowed for hedge contracts can not undertake NTSD / TSD, unless it is specifically permitted. Thus, there is compartmentalization between commodity exchanges and financial derivative exchanges. **(ii) Ready Delivery Contract -** In such cases, quality, quantity, place of delivery and time are standardized. Only, rate is negotiable. Delivery of goods and payment thereof is completed within eleven days of contract. Such contracts are outside the Act. **(iii) Option in Goods –** An agreement for the purchase of sale or a right to buy or sale. Options in goods are totally prohibited under the Act.

Benefits of Forward Marketing:

- **Price discovery mechanism –** Producer can get an idea of future pricing and thus select suitable beneficial commodities.
- **Price Risk Management –** It helps the exporter in quoting a realistic price and facility of hedging or insurance to producer or dealers
- **Price Stabilization –** In times of violent price fluctuation, future markets help in price stabilization

12.0 INSTITUTIONAL CREDIT FACILITIES :

Institutional credit facilities are the vital factor in agricultural development. The main emphasis is laid down on adequate and timely credit support to the farmers, particularly small and marginal farmers for encouraging adoption of modern technology and improved agricultural practices.

The institutional credit to agriculture is offered in the form of short term, medium term and long term credit facilities:

Short term and medium term loans:

1. Crop Loan

2.Produce Marketing Loan (PML)

3. Kisan Credit Card Scheme

4. Modified National Agricultural Insurance Scheme

Long term loans:

Agricultural Term Loan

13.0 Organisations / Agencies Providing Marketing Services:

1. Directorate of Marketing and Inspection (DMI) NH-IV, CGO Complex Faridabad Website: www.agmarknet.nic.in

2. Agricultural and Processed Food Products Export Development Authority (APEDA) NCUI Building, 3, Siri Institutional Area, August Kranti Marg, New Delhi-110016 Website: www.apeda.com

3. National Horticulture Board Ministry of Agriculture, Govt of India 85, Institutional Area, Sector – 18 Gurgoan - 122015 (Haryana) Website : www.nhb.gov.in

4. National Co-operative Development Corporation (NCDC),

4, Siri Institutional Area, New Delhi-110016 Website: www.ncdc.nic.in

5. Director General of Foreign Trade (DGFT), Udyog Bhavan, New Delhi. Website: www.nic.in/eximpol

6. State Agricultural Marketing Board (SAMBs),

14.0 DOS AND DONTS

January

a) Irrigate once in 20-25 days in black soils & 10-15 days in red loamy soils
b) Apply N.P.V @ 200 litres/acre or monocrotophos 2 ml/litres/to control pod borers
c) Change the lure of pheromone traps for monitoring pod borers (Spodoptera litura, Heliothis armigera)
d) Spray captain 1.5 g or maaancozeb 2.5 g or copper oxychloride 3 g/litres of water to control die back & fruit rot diseases.
a) Apply fertilizer @ 50:25 kg/ha of nitrogen & potash

February

a) Irrigate once in 20-25 days in black soils & 10-15 days in red loamy soils
b) Apply N.P.V @ 200 lr. Per acre or monocrotophos 2 ml/liter to control pod borers
c) Change the lure of pheromone traps for monitoring pod borers (spodoptera litura, heliothis armigera)
d) Spray captain 1.5 grams or mancozeb 2.5 grams or copper oxychloride 3 g/liter of water to control die back and fruit rot diseases
e) After second picking of chilli, the produce is exposed to sun for 10-15 days. Spreading on open yards leads to contamination, discoloration. To avoid this use mechanical chilli drier/ solar drier wherever possible.
f) Always dry in polythene sheets/ or clean drying yards.
g) The moisture content of drying pods is to be kept 8-10 per cent.

March

Irrigation to be continued based on necessity and soil type

a) Collection of egg masses/early instar larvae of caterpillars found in-groups may be done manually and destroy them.
b) Erect pheromone traps for monitoring pod borers 6" above crop level @ 5 per ha. Change the pheromone cards once in 15 days for better results

c) Spray Neem Seed Kernel Extract (NSKE) 5% or Bacillus thringiansis var kurstaki (bio control agent) @ 500 g/ha. for control of early instar larvae of pod borers.

Harvest and Post harvest Management:

a) Harvest the ripe chilli fruits and dry in clean concrete floor, polythene sheets or cement yards with intermittent turnings.

b) The optimum moisture content of dried produce 10 per cent for safe storage without developing any mould problem.
c) Wherever possible use mechanical chilli drier or solar chilli drier to avoid any contamination likely to arise on open drying.

April

a) Avoid application of pesticides just before picking
b) Do not allow the pods to over ripe/dry on the plant itself. Periodical picking improve the yield land quality.
c) Dry the harvested chillies on clean polythene sheets or cement floors to avoid aflatoxin contamination
d) Dry the produce till the moisture content reaches 10-11 per cent
e) Prevent contamination with dust and other foreign material. While drying keep the dogs, cats and poultry away from the drying floor
f) Store the produce in clean and dry gunny bags and stake them on wooden plank 40-60 cms away from the walls to prevent produce from moisture

May & June

a) On completion of harvesting green manuring can be practiced by sowing pulse crops (pillipesara, cowpea or sunhemp) in the land proposed for next season cultivation
b) Wherever chilli is intercropped with cotton, dried chilli and cotton plants (after harvest are to be uprooted and cut into small pieces and incorporated into the soil for enhancing the fertility and water holding capacity of the soil.)
c) If needed soil testing can be taken up during the month.

July

a) On completion of harvesting, the main field is either kept fallow or green manuring can be practiced by sowing pulse
b) Crops (pillipesara, cowpea or sunhemp) proposed for next season cultivation
c) Wherever sufficient rains are received sowing of seeds may be taken up in the nursery.

August

a) Green manure crop flowered and ready, it can be incorporated in the fields
b) Transplant seedlings to the main field
c) If moisture inadequate in the main field irrigation may be taken up
d) 50 percent of the recommended dose of fertilizer (i.e. NPK 100:50:50 kg/ha.) may be applied at the time of transplanting
e) Bio-fertilizers can also be applied.

September

a) Irrigate chilli fields once in 7-10 days based on rainfall and soil type
b) The filed should be kept weed free till the crop almost covers the land area
c) Organic manure/ bio fertilizers can be applied

d) Triacontanol can be sprayed @ 1.25 ppm (2.5 l;ml of Vipul dissolved in 10 litres of water) on 20th day of transplanting to increase photosynthetic activity of plants
e) Application of carbofuran granuales @ 10-12 kg/ha may be done after transplanting to control problems like nematodes

October

a) Apply first dose of fertilizer in transplanted field (Nitrogen and Potash @ 50:20 kg/ha.
b) Erect pheromone traps for monitoring pod borer 6" above the crop level @ four – five numbers per acre
c) Erect bird perches to control pod borers @ 10 numbers per acre
d) Spray monocrotophos 1.6 ml or acephate one gram or phosolone 3 ml per litre of water to control thrips
e) Open trenches between the rows with the help of plough to support the plants and for irrigation
f) Weeding may be done if required.

November

a) Spray copper oxychloride 3 g/litre of water to control die back & fruit rot diseases
b) Change the lure of pheromone traps for monitoring pod borers
c) N.P.V @ 200 L.E. per acre or acephate 1 g/ha. also can be applied to control pod bores
d) Apply second dose of fertilizer (i.e. 50:20 kg/ha. of nitrogen & potash)
e) Apply wettable sulphur 3 g. or micronised sulphur 2.5 g.or dicofol 5 ml/1. water to control aphids.
f) Irrigate once in 20-25 days in black soils and 10-15 days in red loamy soils.

December

a Apply fertilizer @ 50:25 kg/ha of nitrogen and potash
b Irrigate once in 20-25 days in black soils and 10-15 days in red loamy soils
c Spray captain 1.5 grams or mancozeb 2.5 g., or copper oxychloride 3 gr. Per litre of water to control die back and fruit rot diseases.
d For monitoring pod borers change the hire of Pheromone traps and apply NPV @ 200 per acre or acephate 1 gr. Per litre.