

MODULE 33 – THE SECRET TASTE OF CHILLI

OBJECTIVES

After going through this module, students will be able to understand:

1. Origin and distribution of chilli.
2. Botanical characteristics and cultivation of chilli.
3. Reason for pungency of chilli.
4. Uses as spice and its medicinal values.

SUMMARY

Red pepper is the most common spice used to impart pungency to food in native of America but now naturalized in India. It add color as well as pungency to food stuffs. It has medicinal importance when used in proper quantity but excess is harmful.

TRANSCRIPTION

INTRODUCTION

Bright red, spicy chillies – the very thought of them makes one's mouth water. Neither snacks nor delicious meals can be prepared without this colourful spice. No wonder the chilli is known as the King of Spices.

Chillies ! it adds flavour and colour to the rich dishes served on a wealthy man's table – it will not be wrong to say that without the fiery chilli life would be pretty bland.

The use of chillies started a long time ago. In fact, 7500 years before Christ, chillies, both green and red were used in America to add flavours to dishes. Christopher Columbus was the first European to see the chillies and he named it "Pepper" after that only 'hot' spice he knew the black pepper.

Deigo Alvarez Chanca brought the chilli to Spain and studied its medicinal properties.

Gradually the chilli travelled from Mexico and reached the shores of India, China, Japan and Korea.

BOTANY

The botanical names for chilli are *Capsicum Anum* and *Capsicum Frutescence*. It is related to the Solenace family.

Chemically it is vanilyl amide of isodoconic acid, it is a cartenoid.

The nutritive value of 100 grams of chillies along with their stalks is as follows:

Nutritive Element	Quantity
Energy	40 KI cal

Carbohydrates	8.81 gms
Protein	0.44 gms
Total Fat	0.44 gms
cholesterol	0.00 gms.

The 'hotness' of chillies depends on the quantity of Capsaicin present in them.

The 'Bhoot Jholakia Chilli' cultivated in Nagaland and Assam are recorded as one of the hottest chillies in The Guinness Book OF World Records. It is called 'Ghost Chillies' in English. In 2010, the "Infinity Chillies" earned for itself the title of the hottest chillies in the world.

AGRICULTURE – 1

Chillies can be cultivated in any type of soil provided there is provision for good drainage. Loam soil with organic presence and plenty of carbonic elements is ideal. Chilli seeds do not germinate well in alkaline soil and even if they do their initial growth is stunted.

It can be cultivated right from sea level to altitudes reaching 2000 meters above sea level. Areas receiving 60-150 cm. of rain are suitable. The spicy chilli can be cultivated all through the year.

The best time to prepare the soil for sowing is between February and March. Whereas June and July are ideal for the autumn crop and in October November the land can be prepared for sowing the summer crop.

To get the healthy seeding. It is very important just to prepare the rest seed bed sized 3x1 meter and It should be above the land that is 6 to 7 inch above the ground level to avoid the water logging. The water logging is the major problem with the healthy chilly. There is a disease known as damping off. It is a very serious disease of chilly and this disease can be occurred during the kharif season. If there is a water logging followed by the warm climate. To avoid this problem there is a solution that the seed should be sworn after proper treatment. The treatment is very easy. The seed treatment can be done either wise thyrum or dythirum 45 at the rate of thirum per kg of seed by bewastine 1 to 1.5 gm/kg of seed.

AGRICULTURE - 2

Two to six weeks after the seeds are sown the plants should have grown to about 15-20 cm. in height or should be divided into rows 45-60 cm. apart and each plant should be planted 30-40 cm from one another.

Now methods of planting have come into prevalence. According to it the beds are prepared and then covered with polythene sheets which have perforations at regular intervals. The plants are planted in the holes and the field is provided with drip irrigation facility. These rules out the fear of root damage caused by water logging. And, if there is low rainfall then drip irrigation provides the necessary amount of water. The newly planted plants should be watered lightly.

The chilli crop can be damaged if the fields remain flooded for more than 18 hrs.

First weeding should be undertaken to remove unwanted plants and care should be taken not to dig deep as it can damage the roots of the chilli plants.

The chilli plants are affected by damping off, ticka disease, leaf curl, circular spots on the leaves, various types of fungus and diseases spread by bacteria and viruses. These should be treated under the guidance of agriculture scientists.

PRODUCTION

About a month or two after the fields have been planted the flowers began to appear. Green chillies are ready to be plucked from the plants a month later. Fruiting in chilly can be obtained after 2 month of transplanting and during the period the proper health of the plant should be mentioned. After fruiting, time to time picking is also essential to get regular fruiting.

Red chillies are harvested once or twice. When the ripe chillies turn partially or completely red in colour, they are plucked along with the stalks. After 10 or 15 days when the harvested chillies are completely red matured the diseased and damaged chillies are removed from the lots and the heaped in a shady place. In a day or two all the chillies are now bright, red in colour. They are then spread out dry in the sun on a clean surface or floor.

By the approved method or by the latest technique the drying can be done within 18 to 20 hours. For this purpose now a days the hot air blower, they are being developed and we are using.

Here they are segregated in different varieties, after drying, cleaning and segregating; the produce is ready for the market.

After the have been dried well, they are filled into gunny bags and stored in moisture free godowns when they are removed from cold storage within 24 hours they once again become as before.

Coimbatore 1, Coimbatore 2, Pusa Sadabahar, N.P.46 A, Jawahar Chilli 218 are some main varieties out of the several that are available. Jalwa, Roshni, Jhankar, Jwala are some popular commercial brands. Agriculture Scientist are working hard to develop new varieties of good quantity chillies.

COMMERCE

Chillies are grown in practically all countries. India of course takes the lead in this, followed by China, Mexico and Paistan. The chilli holds the 2nd position in the spices list, with a share of 16 percent.

As such chillies are cultivated in all the states across the country but the Guntur Market / Fair in Andhra Pradesh have the honour of being Asia's largest Chilli Market. In 2009 -10, 3.48 metric ton chillies were harvested from 61,492 hectares of land. The Guntur chilli is considered to be the best as it is 'hot' and has a natural brightness. Bedgi, a village in Karnataka also has a chilli variety named after it.

The Bediya local market wears a red hue when the chilli season comes. Jwala, Roshni, Jhankar, Nitya and other varieties rule the roost here and merchants from Delhi, Uttar Pradesh, Bareilly and other far off places arrive here to buy in bulk in order to sell them within the country and export them.

So you can see how various masalas are prepared using chilies you can witness the process right from the cleaning to packing.

USES

As far as Indian cuisine is concern it will be difficult to think any meal which can be prepared without using chili.

Chilies are integral part of Indian cuisine. We can't even think of a meal without chilies and spices. Right from breakfast, poha, upma omlette to lunch with dal, vegetable, salad. Chilies are used in that all right to dinner time. It's a absolutely necessary ingredient in the kitchen and apart from consuming chilies, dry chilies are used in preparing achars and pakodas and you may find it amusing but we even use chilies to ward- off the evil eyes from our children.

Today this crop is an important of the agriculture economic across the world. This is so because it is not only used to spice of our dishes but in other ways as well such as to extract oil, prepare souse to extract color, prepared medicine, pesticides and even chili bombs.

MEDICINAL APPLICATION

There are a lot of myths related with chilies, a lot of superstitious in our culture which have been related to these chilies. We feel that these chilies create a lot of problems in our digestion and in our health but research has proved it to be false. In fact medical research has proved that chilies are beneficial to health because it contains a lot of vitamins, especially A, B, C and E. in fact if we take oranges, chilies have 7 times more vitamin C than oranges. So it can be a very good source of vitamin in our diet. Next chilies have a chemical in them which is known as capsaicin. This capsaicin have multiple actions. It was an antioxidant whereby it removes the free radicals which are produced within the body. These free radicals are known to causes damage and disease that is diabetes arthrosclerosis that is basically buildup of cholesterol within the blood vessels which ultimately leads to heart attack and cybervascular accidents. So in fact by taking chilies you can reduce the incidents of heart attack and the incidents of strokes also. Next these chilies can also work as de-toxicants that is removes it the toxic substance from the blood. Thereby helping the over health of the person. When you give antibiotics to a person, these green chilies can help in the working of the antibiotics. That is the increase of blood supply to those organs which are infected. As a result once the blood flow increases. The natural defense mechanism of the body also increases. So these different mechanism helping us to fighting the infection. Another role with chilies that has been found through research that chilies release a lot of endorphins when they are taken from the brail. These endorphins once they are release from brail travel to those areas which generating pain signals within the body and as a result the pain signals are reduced. The use of this has been taken up in disease such as herpesroster, diabetic neuropathy, and other diseases back pain becomes a constant factor. For example- austio arthritis and rumatide arthritis.

It is not that chilies are all good, there are some bad points also. The main problem which we have with chilies are there can be burning in your chest and you can also complain of perennial burning in fact in people who have humored, this problem can increase and it can also lead to increase bleeding per acetum also. Another third thing which we have to remember is that, people who are very sensitive to chilies should not take it in large quantities because if they take in large quantities it can lead to falling blood pressure, decrease in pulse rate then ultimately lead to a shock like stage. So the over all what we have found in that chilies are beneficial to health when taken in moderate amount it can help and it can also prevent many disease and the same time it is also being use to treat certain diseases condition.

So now we have seen how useful chillies are. Its use has many advantages and practically no disadvantages. It occupies such an important place in our meals that it would not be off the mark to say ' chilli adds spice to life!'

GLOSSARY

- 1) Spice – aromatic pungent vegetable substance used as flavoring agent.
- 2) Native home – place of origin.
- 3) Navigator – sailor.
- 4) Transplantation – resettling elsewhere.
- 5) Condemeut – flavor added to food.
- 6) Pungent – having sharp or strong taste.
- 7) Vitamin - food ingredient essential for health and growth.
- 8) Capsanthin – carotene pigment responsible for red color of ripe chillies.
- 9) Capsaicin – chemical responsible for pungency of red pepper.
- 10) Mulching – water economy of soil.
- 11) Antioxidant – chemical which neutralizes free radicals which are otherwise harmful.
- 12) Harvesting – reaping.
- 13) Acidity – burning sensation in stomach due to secretion of acid.

F.A.Q.s

Q.1 What are different common names of red pepper?

A.1 Spanish pepper, chillies, cayenne pepper, capsicum fruit, fructus capsici.

Q.2 What is botanical name of red pepper?

A.2 Capsicum annum.

Q.3 Which country is the name of chilli?

A.3 America

Q.4 What are major countries where chilli is cultivated?

A.4 India, Japan, Pakistan, Southern Europe , Mexico, Africa and Sri Lanka.

Q.5 Which States in India are well known for the cultivation of chilli?

A.5 Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu, Madhya Pradesh, Punjab, Bihar and Rajasthan.

Q.6 To which family chilli belongs?

A.6 Solanacea

Q.7 What are other relatives of chilli belonging to the same family?

Q.7 Tomato, Brinjal and Potato.

Q.8 Who carried the name red pepper for chilli?

A.8 Columbus a European navigator who had discovered America. He carried the name red pepper on the lines of black pepper in view of pungency.

Q.9 Why raw chilli is green while ripe one is red in color?

A.9 Raw chilli is green due to dominance of chlorophyll while ripe one is red due to the pigment capsanthin.

Q.10 What is cause of pungency in red pepper?

A.10 Capsaicin which has maximum concentration in inner wall that's why the pulp of red pepper is more pungent.

Q.11 Which vitamins are filled in red pepper?

A.11 Vitamin A, Vitamin B1, B2, Vitamin C, Vitamin B5 and Vitamin E. Vitamin A & C are more in amount, vitamin C. It is much more than orange.

Q.12 Out of green chilli and red chilli which is more pungent?

A.12 Red chilli because amount of capsicum increases on ripening.

Q.13 Out of two spices of chilli i.e. capsicum annuum & C. frutesceus

Which is more pungent?

A.13 Capsicum frutesceas which is smaller in size but is more pungent.

Q.14 Does chilli cultivation requires house plantation?

A.14 Yes in the beginning seeds are sown in small beds. When seedlings are of 4 to 8 weeks they are house planted in fields at the distance of 45 to 60 cm from row to row and plant to plant. The height of seedling being 15 to 20 cm.

Q.15 In what way mulching is practiced in chilli cultivation?

A.15 By spreading polythene on soil field. The polythene has holes at distance of 4 to 6 cms where seedlings are house planted. Mulching is a device for water economy and for saving plant from diseases.

Q.16 How much time is required for fruit formation after plantation?

A.16. About three months.

Q.17 What is the sowing time for chillies in different parts of India?

A.17 From April to July

Q.18 What precautions should taken during harvest in order to obtain more yield?

A.18 Fruits should be plucked from time to time. If mature fruits are plucked new fruits are formed more and more.

Q.19 What are high yielding varieties of chilli?

A.19 Coimbatore 1, Coimbatore 2, Pusa sadabahar, NP46-A, Jawahar218 and jwala are high yielding varieties.

Q.20 How red pepper is dried?

A.20 By spreading on floor for 15-20 days or by hot air blow at 45° C within 18 to 20 hrs.

Q.21 What are important centers for chilli production in India?

A.21 Guntur in Andhra Pradesh and Bida in Madhya Pradesh.

Q.22 What is the medicinal importance of chilli?

A.22 Capsanthin, the pigment is antioxidant. It combats free radicals and saves from heart attack. It stimulates brain and it secretes endorphin which is a pain killer and gives relief in herpes zoster.

Q.23 How excess use of chilli is harmful?

A.23 It causes acidity and sometime blood pressure also falls down.