1. Vegetables are available only in their respective seasons and are not available during off season. During their respective season also there is a glut in the market due to which the prices go down. Hence, by increasing the period of availability, better market price can be obtained. This is possible by cold storage facilities.
2. If better cold storage facilities are made available it is easy to supply and hold a regular trade of vegetables.
3. Consumers will not be required to pay lower prices during glut and higher prices during off season if cold storage facilities are provided.
4. Some vegetables like turmeric, ginger, potato and sweet potatoes can be stored for two to three months even at room temperature and can be made available for that period. If these vegetables are stored in proper storage the period of availability will be increased by 6 to 8 months.

At present vegetables are stored in the following ways:

A. Home storage:

Under home conditions fruit and root vegetables of winter season can be stored for a week at room temperature while leafy vegetables cannot be stored for more than 2 to 3 days.

During summer season neither fruit vegetables nor leafy vegetables can be stored for more than two days. However, during summer season, potatoes may be stored over cool and dry floor provided with a few centimetres of sand layer. Onions can be stored for three to four months by putting them in thin layers over dry floor. Garlic can be stored for 4 to 6 months by hanging in bundles in dry huts. Ginger and turmeric can be stored by putting them in moist sand. Sweet potatoes, ripened squash and ripened pumpkin can be stored for few months by putting them on shelves or slated crates. Proper precaution from rats should be taken during the storage of these vegetables. Vegetables like colocasia, jimikand and yam etc. may be stored in pits under shade in or outside the home.

B. Cold storage:

This facility is available only in cities of our country. In these storages, temperature is reduced by refrigeration up to a desired level. There is a provision for controlling temperature and humidity at the desired point

Control Measure

- ❖ Spray crop with Dithane M-45 at the rate of 2 kg per hectare in 1000 litres of water.

INSECT PESTS AND THEIR CONTROL

Hairy caterpillar

It is one of the most important pest of cowpea crop. It causes severe damage to the crop by eating away green portions of leaves. The adult moth of this caterpillar lays eggs in large clusters and the young larvae are also congregated. They may damage the crop at seedling stage. Damage can be so severe that sometimes re-sowing may be necessary.

Control Measures

- ❖ Collect and destroy the eggs and young larvae.
- ❖ The young caterpillars can be killed by dusting 10 per cent BHC dust at the rate of 25-30 kg per hectare. For full grown caterpillars, spray 1.5 litre Endosulfan (35 EC) in 1000 litres of water per hectare. Trenches all around the field may be dug and 10 per cent BHC put in trenches to check migration of caterpillars to field.

Leaf hoppers, jassids and aphids

The adults and Mymphs of these pests suck the juice from the leaves and the damage is more severe when the plants are young. As a result of sucking up of the sap, the leaves turn brown and crumpled, and plants look sick.

Control Measures

- ❖ Spray the crop with 0.1% solution of Metasystox or 0.04 per cent solution of Monocrotophos (40 EC))
- ❖ Give basal application of Thimet 10% granules at the rate of 10 kg per hectare.

HARVESTING AND THRESHING

Green pods for use as vegetable can be harvested 45 to 90 days after sowing depending on the variety. Pods should be harvested while tender

types. Better growth and yield can be obtained only when the field is kept moist. Normally, the crop should be irrigated at an interval of 10 to 15 days and in total 6 to 8 irrigations are required. To avoid disease infection, proper drainage should also be provided.

WEED CONTROL

Better quality can only be obtained if the crop is kept weed free in early stage of growth. Normally, first weeding should be done 10-15 days after transplanting. Second weeding should be done 20 days after first weeding. Sometimes third weeding is also required in heavy infested fields.

DISEASES AND THEIR CONTROL

Downy mildew

It is caused by *Bremia actucae* fungus. During early stage of growth, light green or pale yellow spots appear on the upper surface of the leaves. On the reverse side a downy white growth is also seen. In later stages the entire leaf turns yellow and brown.

Control Measures

- ❖ Spray the crop with 0.2% solution of Dithane M-45 at an interval of 10 to 15 days.
- ❖ Grow resistant varieties like Imperial 17.

Mosaic

It is a very common disease of lettuce and sometimes causes considerable damage. The young leaves get distorted by inward rolling and mottling. The plants do not grow properly and turn yellow and discoloured.

Control Measures

- ❖ Use only disease-free seeds.
- ❖ Spray the crop with 0.15% solution of Metasystox to control the aphids which transmit this disease from plant to plant. The leaves should only be used 10 days after spraying.

Lettuce drop

It is caused by *Sclerotinia selerotiorum* fungus. The plants are affected at

shrubby perennial reaching a height of about 1.5 to 4.5 metres. It has large spreading long stalked leaves, palmately divided. The plant possesses tall, thick straight stem marked along the length by numerous scares indicating position from where the leaves have dropped off. It flowers and bears fruit containing three seeds. The valuable parts of the plant are large, fleshy, cylindrical, tapering roots which are formed in clusters at the base of the stem.

CLIMATIC REQUIREMENTS

It can be grown from sea-level to an elevation of about 900 metres and can withstand drought extremely well but does not tolerate stagnant water. It thrives best in tropical warm humid climate with well distributed rainfall of over 900 cm per annum.

SOIL AND ITS PREPARATION

The most favourable soils for tapioca cultivation are loose textured and well-drained soils. In poorly drained soils, such as clayey or heavy textured soils, the tubers are deformed, subject to growth cracks and often not attractive in appearance. The best quality tubers and yield is obtained in sandy loam, silt loam and peat soils. Field should be prepared by one deep ploughing followed by five to six harrowings. Planking should be done for making the soil loose, friable and porous.

VARIETIES

The tapioca varieties are classified as sweet and bitter, based on the content of cyanogenic glucoside. The varieties differ in duration, shape, size and colour of leaves, colour of stem and tubers. Following are the main varieties of tapioca.

Travancore Red: Tubers are slightly red in colour and ready to harvest after 275 days of planting. Stem is slightly pink.

Sree Prakash: It is recommended for Kerala and Tamil Nadu. Plants are 1 to 1.5 metre long. Tubers are medium in size and ready to harvest 7 to 8 months after planting.

Co-1: It is recommended for Tamil Nadu. Tubers are white in colour. Average yield is 300 to 360 quintal per hectare. It is ready to harvest 8 months after planting.

Co.2: It is also recommended for Tamil Nadu. Average yield is 300 to 350