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Nutritional and Health Benefits of Chow-Chow

(*Bhavna[1] and Ashwini Uikey[2])
[1]Department of Horticulture (Vegetable Science), College of Horticulture, Mandsaur
[2]Department of Horticulture (Fruit Science), College of Agriculture, Gwalior
(Rajmata Vijayaraje Scindia Krishi Vishwa Vidaylaya, Gwalior-474011, MP, India)
*Corresponding Author's email: bhavnasirsam2017@gmail.com


Chow - chow (*Sechium edule*) belongs to the family cucurbitaceous. It is an importance parts of dietary system of tribal's of North East Regions. Chow –Chow is a single seeded fruit of Cucurbitaceous family having chromosome number 2n=28.. It subtropical and tropical regions, it produces large edible tuberous roots. Chow – Chow is a herbaceous perennial creeper (Choudhary, 1967). It has a viviparous type of germination. It was introduced into the Antilles and South America between the 18th and 19th centuries. It is the popular vegetable in northeast hilly region commonly called squash. Technically, chow –chow is a fruit; but most often used as a vegetable. It is often used in the place of potato. The plants edible parts are its fruits, tender shoots, young leaves and tuners roots. It is grown throughout the world in tropical and subtropical area. Chow– Chow is a semi perennial plant remaining economically viable up to 5 years.

Health Benefits of *Sechium edule*

- **Uses of chayote for protects Heart :** Rich in phytochemicals, Chayote plays a major role in improving blood flow, thus regulating high blood pressure. Add this vegetable to your daily diet for protecting the health of your most vital organ, the heart.
- **Improves Liver Function:** A fatty liver is a dangerous, and it can happen in non – alcoholics as well. This vegetable considerably bring down the fatty deposits in liver and also reduce the level of bad cholesterol. Regular intake of Chow – Chow triggers metabolic activity improves the livers ability in processing fats.
- **Regulates Blood Sugar:** Chow – chow should be the part of a diabetic diet plant. Studies reveal that the presence of certain chemical compounds in Chow-chow improves insulin sensitivity.
- **Prevent Cancer:** Chow – chow being rich in antioxidants fights against free redicals thus slowing down the progression of cancer cells, especially in those suffering from leukaemia and cervical cancer. It is stroghly recommended in to the diet chart of the cancer patients.
- **Slows Down Aging :** This super vegetable can effectively reduce oxidative stress, which mat have a negative impact on the body cells, thus making skin look like dull and pole. Thus protect the body from cell damage, making the skin glow from within.

Climate and Soil

Climate – Chow – Chow is a warm – season crop preferably grown in cooler climate conditions with good humidity. The optimum temperature for growth in 18-22℃. it grown under moderate temperature during winter season. Temperature below 4.4 c causes plant injury and temperature above 29 c causes flower drops and result in small – misshapen fruit. It is highly sensitive to frost.

Soil – a rich we;; drained loamy soil with sufficient moisture and high organic matter will be ideal to grow chow – chow. Ideal pH for chow – chow is 5.5-6.5.

Propagation

Chow – Chow is usually propagated by sprouted fruits which show viviparous germination. Usually the whole fruit is planted as a seed. However, sprouting of seed can be delayed when kept in cool storage condition(10℃). Stem cutting of above 15-20cm can also be used (Sharma,2015).

Land preparation

Chow – Chow requires well loose, well drained soil rich in organic matter for its growth. FYM or got manure is mixed with soil and pits are filled with one third by FYM and sprouted fruit is planted directly on centre of pits.

Spacing

Planting is done at a spacing of 3 2 m distance in pits of 0.5 m 0.5 m 0.5m size.

Training

Pandals or trellis are erected for the vines to trail over at a height of 2 meter in homestead garden, the vines are also allows to climb on small trees. Training on bower must be started just after 30 cm of vine length from the ground level. Once the crop anchor, branches spread easily because of tendrils.

Pruning

There are two fruited season in an year and vines are pruned at and of each season leaving only a small portion of about 1.5 m. of stem.

In Maharashtra, vines are to be pruned in December laving only a portion of 120 to 150 cm of stem from ground level. It is repeated again in May and thus two crops are obtained one after winter pruning and other summer pruning in May.

Seed rate

Fully mature fruits are used which have a faster establishment. Since its vegetatively propagated, the seed rate is determined by the number of fruits required for planting.

Seed rate – around 1,000-1,200 fruits per hectare. Each fruit is used as a planting material, as it contains one seed within.

Nutrition management

No regular manures are required. A few growers apply ash, goat manure, cattle manure and ammonium sulphate. Ammonium sulphate is applied at rate of 57 g/ pit. This improved fruit size and total yield. Farmyard manure appears to be the most satisfactory, and should be applied in early spring prior to growth. NPK @ 120:80:80 kg/ha added with full dose of P and K and half dose of N at the time of vining and remaining half dose of N before flowering.

Irrigation

Proper irrigation is crucial for healthy growth and fruit production in chow – chow.

Critical stages for Irrigation

- **Vegetative stages-** Regular irrigation is necessary to promote healthy vine growth.

- **Flowering stages –** Adequate moisture during flowering is crucial for good fruit set.
- **Fruiting stage –** During fruit formation and development, consistent moisture helps produce larger and better – quality fruits.

Sprinkler irrigation may disrupt bee activity during pollination resulting in flower abscission.

Harvesting

Peak season for harvest is between Octomber and December and May to June. The reach marketable size in about 30 days from flowering and are picked before they fully mature. Harvesting of tender fruits lasts for 2-3 months in a season.

Yield

A single plant 70-100 fruits (40-50 kg) during first year.
500 – 600 fruits during second year.

Postharvest handling

Fruit must be harvested and handles carefully to prevent cuts, bruises, and spread of diseases. It is normally pre – cooled in cold rooms or through forced air. In the market, it is packaged in fiber board boxes with dividers, each piece in a film bag, single layer. Fruits can be stored for a month at 10-15 c and 85-90 % R.H. from a grading point of view, Chow – Chow can be classified into "Extra" class, Class I, and Class II.

Diseases

- **Powdery mildew –**This is a fungal disease (caused by *Ertsiphe sp*) which damages the crop. It become often very severe. First appear as half or full white circular patches or spots which appear on the undersurface of leaves (Jeffrey, 1978). In severe cases, the patches coalesce and cover both the surface of leaves and defoliation occurs.

Control –To control powdery mildew, spraying of Bavistin @ 1 g per liter of water, at least thrice, at 5-6 days intervals is done.

- **Downey mildew –** This is a fungal disease caused by (*Pseudopernospora sp*.). It is prevalent in areas of high humidity. The disease is characterized by formation of yellow angular spots on upper surface of leaves. The disease spreads rapidly killing the plant quickly through rapid defoliation.

Control – Application of fungicidal spray such as Dithane M-45 (0.2%) once week is effective in controlling this disease.

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