GROWING CHINESE CABBAGE (BRASSICA CHINENSIS, CRUCIFERAE FAMILY)

Chinese cabbage is cultivated for its leaves and head which are used as relish. The crop can be planted all year round, Chinese cabbage, however, grows better under moderate cool weather conditions from February to September. Lower temperature forces the plant to bolt prematurely and seed stocks. Rainy season planting from October to December does not give good yields.

LAND PREPARATION

Land preparation or tillage is the manipulation of the soil to obtain favorable conditions for plant growth. Good tillage provides a proper seedbed for our crops. Organic matter from crops residues or green manures is incorporated into the soil and creates a better soil tilth. The decomposing organic matter also improves soil fertility. Tillage operation such as ploughing is done to a depth of 30cm.Old roots and stones should be removed to ensure that the seedbed is conducive for crop establishment.

HOW TO PLANT

Chinese cabbage ca be raised as a direct sown or transplanting crop. Seeds may be drilled directly on a well prepared seed bed. If directly sown, thin the plants within the rows to between 20-30 cm apart, seeds may also be sown in nursery beds 0.5 cm depth and transplanted 25-30 days after sowing. Depending on the type of seed, soil type, soil condition and weather, within 3-7 days, seeds will emerge and mulch should be removed immediately. If there are heavy rains, a shelter can be constructed over a seedbed.

Points to take note when planting vegetables

-Sow seeds in nursery at recommended spacing (5-20cm between rows and drilling)

-Depth is usually 0.5cm to 1cm for small seeds and 3cm to 5cm for medium and large sized seeds depending on soil types.

-Ensure that there is proper soil seed contact by firming.

-Put mulch after sowing

-Water daily in the morning and late afternoon for three to four days. Then once daily either in the morning or late afternoon.

WEED CONTROL

A Weed is an unwanted plant in the farmer's field and therefore requires to be removed through the operation of weeding. Weeds require to be controlled because they compete with the crop for light, space, water and nutrients. They can also be a nuisance during field operations such as spraying, irrigation and harvesting. Weeds can make land preparation difficult. Observing good

tillage practices and maintaining soil fertility helps to suppress certain species of weeds. A good rotation of the crops being grown also helps to reduce chances of difficult weeds like nutsedge and star grass from proliferating(spreading)

IRRIGATION

Irrigation plays an important role in realizing the full potential of a particular crop. Several methods of irrigation exist among which are furrow, basin, bucket drip, and overhead irrigation. Though there are several irrigation methods, the choice of the actual method of irrigation should be guided by practical considerations such as soil type, water source, labor availability, size of the production area as well as socio economic factors.

Adequate water supply to the crop facilitates uptake of plant nutrients from the soil. Water supplied to the crop should be optimal as both excess and inadequate amounts have adverse effects. Excess water may promote attack by some diseases and cause root damage. A crop that has not been adequately supplied with water on the other hand has slower growth rate resulting in lower yields of poorer quality. A water stressed crop also tends to be more vulnerable to pest and disease attacks. Though irrigation scheduling is important to enable rational and sustainable use of the available water, in by small holder farmers is often characterized by lack of water measuring devices. This makes it difficult to quantify the amounts of water applied at any given time.

VARIETIES

- Michihili
- Chihili
- Napa
- Mustard seed (mpilu)

FERTILIZER APPLICATION

Incorporate into the soil well decomposed compost or livestock manure 1.5 to 3 kg /m2 .apply 800kg /ha D compound and 25-30 kg/ha borate as basal dressing and ensure that the fertilizer are uniformly applied and incorporated into the soil before sowing or after transplanting .one month after sowing apply 150 kg/ha urea or 200 kg/ha ammonium nitrate as top dressing .

Crop rotation

Avoid planting Chinese cabbage on the land that has previously been planted with brassicas such as rape, cauliflower, cabbage

PESTS

- Diamond back moth

- Cruciferous crops: These are its preferred host plants, including cabbage, broccoli, cauliflower, and canola.

-Deformed heads: The larvae can also cause deformed heads in cabbage and other plants

- Holes in leaves: The larvae feed on leaves, causing small to large holes.

- Aphids
- White flies
- spindermites

MANAGEMENT:

-isolate the nursery from the main field

-isolate new crops from old ones

-crop rotation

-spray with biological insecticide

-regularly scout for pest larvae for early detection of infestation

-spray with neem extracts as need arises

-destroy old crops immediately after the harvest

DISEASES

- damping off
- blackrot
- seedborne

Management

-Use treated certified seeds

-Avoid untreated recycled seeds as currently practiced by many smallholder farmers

Some chemicals used to control pests and diseases

- Rova 720 sc
- Neem extract
- Doom
- Farm guard
- Abaforce
- cyper
- snore tiger

Harvesting Methods

Vegetable crops should be harvested at the appropriate stage of maturity to ensure optimal quality and flavor. Harvesting methods vary depending on the crop type and include hand harvesting, mechanical harvesting, and selective harvesting of individual fruits or leaves.

Hand Harvesting: Hand harvesting involves manually picking or cutting crops by hand. It is the oldest and most traditional method of harvesting.

Applications (Where it can be used): Hand harvesting is commonly used for crops that require delicate handling or are difficult to harvest mechanically, such as fruits, vegetables, flowers, and some specialty crops.

Advantages

 Allows for selective harvesting, ensuring only ripe or mature crops are picked. Suitable for small-scale or diversified farms. Minimal equipment investment required. Provides employment opportunities, especially in rural areas.

Disadvantages

 Labor-intensive, time-consuming, and costly, especially for large-scale operations.

 Dependent on availability of manual labor, which can be seasonal and unpredictable.

 Risk of damage to crops if not handled carefully.

 May not be feasible for crops with high labor requirements or short harvesting windows.

Mechanical Harvesting: Mechanical harvesting involves using machinery to cut, gather, or remove crops from the field. It typically employs specialized equipment designed for specific crops.

Applications: Mechanical harvesting is widely used for large-scale production of grains, oilseeds, legumes, cotton, sugarcane, and other row crops.

Advantages

- Faster and more efficient than hand harvesting, especially for large areas.
- Reduces labor requirements and associated costs.
- Allows for harvesting of crops with short windows of ripeness.
- Can be adapted for different crop types and field conditions.

Disadvantages

- Initial investment in machinery and equipment can be high
- Requires skilled operators and proper maintenance to ensure optimal performance.
- May not be suitable for crops that are sensitive to damage or require selective harvesting
- Potential for soil compaction and crop losses if not operated correctly.

Selective Harvesting: Selective harvesting involves harvesting only certain parts or components of a crop, such as ripe fruits, mature seeds, or high-quality produce, while leaving the rest to continue ripening or maturing.

Applications: Selective harvesting is common in orchards, vineyards, and specialty crops where different parts of the plant ripen or mature at different times.

Advantages

- Maximizes yield and quality by harvesting only ripe or mature crops.
- Allows for staggered harvesting over an extended period, optimizing labor and equipment use.
- Reduces waste and post-harvest losses by minimizing harvesting of unripe or damaged crops.

Disadvantages

- Requires careful monitoring and assessment of crop maturity to determine optimal harvest timing.
- May require specialized equipment or manual labor for selective picking.
- Increases management complexity and logistical challenges, especially for crops with variable ripening patterns.
- Potential for increased harvesting costs compared to bulk harvesting methods.

Each harvesting method has its own advantages and limitations, and the choice depends on factors such as crop type, scale of production, labor availability, equipment resources, and market requirements. Integrated approaches that combine different harvesting methods may be used to optimize efficiency, productivity, and quality.

Processing Methods

After harvesting, some vegetable crops may undergo processing to extend shelf life, improve palatability, or create value-added products. Processing methods can include washing, trimming, blanching, freezing, canning, drying, or packaging, depending on the intended use and market demand.

Washing: Washing involves cleaning food products to remove dirt, debris, pesticides, and microbial contaminants. It is typically done using water, sometimes with added sanitizers or detergents.

Applications: Washing is used for fruits, vegetables, and other produce to improve cleanliness and food safety.

Trimming: Trimming involves removing undesirable parts of food products, such as stems, leaves, peels, or blemishes, to improve appearance, texture, and quality.

Applications: Trimming is commonly done for fruits, vegetables, to enhance their marketability and consumer appeal.