

MEASURE AND MANAGE

Chinese Vegetables

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Chinese Vegetables encompasses a wide variety of leafy green oriental vegetables. Confusion abounds over names and dialects that are used to describe the various leafy green crops.

In Chinese the word “tsai” and in Mandarin dialect the word “choy” all mean “vegetable”.

When a prefix is added to these words such as Bok Choy it means all leafy headed vegetables. Pai-Tsai means white vegetable.

Chinese Cabbages are of the Brassica family. There are two basic types Chihli which is cylindrical in shape and Napa which is more blunt or barrel shaped. Some of these will have petioles that are white or light green in colour.

Pak –choi- Pak Choy, Bok Choy, Taisai, Celery mustard, spoon cabbage are all the same vegetable and have thick white or thick light green petioles.

General Fertility Requirements for Chinese Vegetables and Brassica

Soil Test using the Agri-Food Laboratories AFL Complete plus an option for Sulphur on mineral soils, no sulphur is required on muck soils.

The goal of a balanced fertilizer program is to assure an adequate supply of essential nutrients. The plant requirements, cultural practices such as irrigation and local climate will influence the results of any fertility program. The outcome and interrelationship of these factors may enhance or reduce the effectiveness of any chosen fertilizer application program.

pH - Soil pH 6.5 or higher

Soil pH over 6.8 may suppress club root. Applications of hydrated lime at 1500 to 1800 lbs per acre may reduce incidence of the disease. Higher pH soils may be desirable for production when the disease is known to be present.

Nitrogen

A total application in most cases involves supplying 150 to 200 lbs of actual Nitrogen. Take appropriate credits for any manure applications or residual nitrogen values. Some crops respond to higher rates in the 250 to 300 lb range. Stem splitting and secondary

infection of bacterial rots may be a concern. Application of high rates may be done in several smaller applications over the season.

Generally, apply 50% of the N before seeding or transplanting or band with a phosphorus application at 60 to 90 lbs. Additional side-dressings can be done at last cultivation or 1 to 2 weeks before first harvest.

Phosphorus (P)

Banding phosphorus at planting time is the most efficient way to utilize this nutrient. Apply bands 3 to 4 inches deep and 3 inches from the transplants.

| Soil test P ppm | Rate of P ₂ O ₅ lbs actual per acre |
|-----------------|---|
| 0-30 | 150 - 200 |
| 30 -60 | 100 - 150 |
| 60+ | 80 - 100 |

Potassium (K)

Band applications should be limited to 90 lbs K₂O. If banding with N the total N + K₂O should not exceed 90 lbs actual. Broadcast the remainder of the recommendation before planting.

General K recommendations for mineral soil

(The actual Agri-Food Soil Report may differ due to CEC and target K determination and subsequent build factors)

| Soil Test K | K ₂ O Recommendation lbs actual per acre |
|-------------|---|
| 0-150 | 150 -200 |
| 150 -200 | 90 - 150 |
| 200 -250 | 60 - 90 |
| 250+ | 30 |

Magnesium (Mg)

Magnesium recommendations are made when the K:Mg ratio is > 0.5. Other jurisdictions recommend Mg when the soil test levels are less than 2 milliequivalents/100 gms of soil or 240 ppm. General Mg recommendations range from 10 to 40 lbs actual per acre. K-Mag or Epsom salts is effective in supplying magnesium. Broadcast or band with P.

Sulphur

Sulphur requirements are usually met by the use of other fertilizers such as K-Mag (22% Sulphate) or Sulphate of Potash. Usually applications of 25 to 40 lbs elemental sulphur are used, and it is best applied the year ahead or use sulphate forms in season. Muck soils are well supplied with sulphate-sulphur and do not require any further applications.

Boron

Most of these crops are sensitive to Boron deficiencies

Apply Boron according to soil test and experience. Care must be taken in crop rotations following Chinese Vegetables that have received large quantities of Boron especially in dry years.

| Boron Soil test ppm | Boron lbs actual per acre |
|----------------------------|----------------------------------|
| 0 – 1 | 3 – 4 soil applied |
| 1 – 3 | 1 – 2 soil applied |
| 3+ | Foliar at 0.20 lbs B / acre |

Zinc, Manganese, Copper

Soil test levels and soil pH will determine the need. Many fungicides contain these nutrients. There is much debate as to plant availability of these compounds. Plant tissue analysis may also be useful in assessing the nutritional status of plants.

Plant Tissue Nutrient ranges for Chinese Cabbage

| Nutrient | N% | P% | K% | Mg% | Ca% | ppm | | | | |
|-----------------|-----------|-----------|-----------|------------|------------|------------|-----------|-----------|-----------|----------|
| | | | | | | Zn | Mn | Cu | Fe | B |
| 8 leaf | 4.5-5 | .5-.6 | 7.-8 | .35-.45 | 4-5 | 30-50 | 14-20 | 5- 10 | 20- 150 | 15-25 |
| Maturity | 3.5-4 | .3-.6 | 3-6 | .4-.5 | 3-6 | 20-40 | 13-19 | 4-6 | 20-100 | 30-50 |

Sample the oldest undamaged leaf, collect 10 to 15 leaves.