

## CABBAGE

*Brassica oleracea var. Capitata*

**Origin:** England and Southwest Europe

**Edible Portion:** Vegetative heart

### SOWING AND PLANTING

**Climatic Requirements:** Provided the correct variety is selected, cabbage is adapted to a wide range of climates. It is a frost tolerant crop, down to -3.0°C, however, it is not tolerant to extreme heat for the reason that high temperature causes the head to split.

**Preferred Soil Type:** Deep well drained soils high in organic matter. Early crops require light warm soils. Sandy soils may produce leafy plants with no hearts.

**Seed Required:** 250-500g/ha

**Optimum Soil Temperature Range for Germination:** 7.0-35.0°C

**Emergence Time:** 3-15 days, optimum 6 days.

**Plant Spacing:** In-row 30.0-45.0cm, between rows 45.0-90.0cm

**Plants per Hectare:** 24,000-74,000

**Method of Propagation:** Market – Normally sown outdoor in beds, or glasshouse raised in cells, and transplanted out after 30-60 days when approximately 15.0cm in height.

Process – Normally precision seeded or cell transplants.

**Sowing Dates:** Spring sown – August to November; Summer sown – November to February; Autumn sown – February to May; Winter sown – May to July.

**Planting Out Dates:** Spring sown – September to January; Summer sown – December to April; Autumn sown – March to July; Winter sown – June to September.

**Other Sowing and Planting Information:** For transplant production always ensure the seed raising site is free of clubroot disease. Sterilisation of seed raising beds is recommended. All seed should be either hot water treated (At exactly 50°C for 25-30minutes then cooled and dried rapidly) or fungicide treated.

### FERTILISER

**General:** Optimising of fertiliser applications is necessary if top quality and maximum returns are to be achieved.

**Optimum Soil Test Levels:** N = 100-150, P = 45-75, K = 12-15, Mg = 20-40, Ca = 10-15, Na = 1-10.

**Base Dressing (kg/ha):** Main crops – N = 40.0, P = 40.0, K = 40.0. Spring crops and hybrid varieties – N = 40.0, P = 40.0, K = 80.0. It is preferable to broadcast this dressing and work it into the soil prior to planting or seeding.

**Transplanting Solutions:** Dilute solutions of NPK soluble fertilisers will assist the plants to overcome the transplanting shock.

**Side Dressing (kg/ha):** Main crops and cool growing conditions – N = 100. Apply at 3-4weeks after transplanting, or when direct-seeded seedlings are 20-30cm in height, using 2-3 split applications.

**Trace Elements:** Boron – Where a deficiency of boron is proven an application of 20-40 kg/ha of borax will be sufficient to correct this in following seasons. Boron applications must be used cautiously. It is important to have a boron deficiency positively identified prior to embarking on a correction programme and not to use more boron than that recommended. Excessive levels of boron can be exceedingly phytotoxic to succeeding crops for a number of years.

Safe Fertilisers

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Molybdenum – A deficiency of this element can usually be corrected by raising soil pH levels. Application rates of sodium molybdate for alkaline soils with a low rainfall are 250g/ha and acid soils with a high rainfall are 3kg/ha.

**Optimum pH Range:** 6.0-6.8

**Lime Requirement:** Cabbages have a high lime requirement to maintain the pH level, reduce molybdenum deficiency and to reduce the incidence of clubroot disease.

## PESTS AND DISEASES

### Important Pests and Their Control:

Aphids – acephate, demeton-S methyl, diazinon, dichlorvos, dimethoate, disulfoton, endosulfan, methomyl, permethrin/pirimiphos-methyl, phorate, pirimicarb.

Diamondback moth – acephate, *Bacillus thuringiensis*, carbaryl, cyfluthrin, cypermethrin, deltamethrin, diazinon, dichlorvos, endosulfan, esfenvalerate, lambda-cyhalothrin, methamidophos, permethrin/pirimiphos-methyl, tauflualinate.

Thrips – diazinon

White Butterfly – alpha-cypermethrin, *Bacillus thuringiensis*, carbaryl, cyfluthrin, cypermethrin, deltamethrin, diazinon, dichlorvos, endosulfan, esfenvalerate, lambda-cyhalothrin, methamidophos, permethrin/pirimiphos-methyl, tauflualinate.

### Important Diseases and Their Control:

Clubroot – chlorothalonil/thiophanate-methyl, thiophanate-methyl.

Damping off – metalaxyl, etridiazole

Downy mildew – chlorothalonil, copper oxychloride, cupric hydroxide, mancozeb, mancozeb/metalaxyl.

Ringspot – benomyl, chlorothalonil, copper oxychloride, cyproconazole, mancozeb/metalaxyl.

### Other Physiological Problems and Their Control:

Head splitting – Regular irrigation to avoid any drought stress.

Tipburn – Associated with an inadequate supply of calcium in the affected leaves.



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## Cabbage Program

### **Ground preparation:**

Apply; 1 tonne/ha Lime **or** Safe Organic Liquid Lime @ 40lt/ha in 300lt/water  
Or Alroc ExtraPhos @ 200kg/ha

### **Pre Plant**

Apply 60 Kg/Ha Safe Coated Urea (optional this can be fitted in as required)  
Apply 200 Kg/Ha Alroc 15.3.8 Supablend  
Apply 10lt /ha Vital Activator (This is to lift the carbon level in soil, the energy)

### **Top up Fertiliser requirements:**

#### **Weekly topup;**

Vital Mix @ 5lt/ha mixed into 200lt water/ha

#### **Nitrogen:**

Apply 60 Kg/Ha Safe Coated Urea

#### **Multi Nutrients:**

8Lt/Ha Vital K Blast to finish the crop off ( only if required )

The above mentioned application rates can be adjusted to what is economical. These adjustments may not provide the ideal nutrient ratios but should replace some of the nutrients that are removed by the crop.

### **Neville Janke**

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### **Disclaimer**

The above program will be affected by soil variation, testing errors, seasonal factors and management skills. Any recommendation should be acted upon as part of an ongoing fertiliser program. No responsibility can be accepted for any of the above matters or other matters that are beyond our control.

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