



# CAULIFLOWER

---

## Production & Spray Guide

---



# Cauliflower Production Guide

“Integrated Crop Solution”

## Site Selection

Soils can be medium to heavy clay loam with good water holding capacity. Sandy soils tend to require more frequent irrigation cycles and require higher levels of fertilization. PH levels should be between 5.5 and 6, closer to 6 on sandy soils. It is best to take soil samples and have them checked prior to planting. Cauliflower responds very well to compost enriched soils. Levels of 20 to 30 tons of well-prepared compost will benefit the crop and reduce the levels of fertilizer. Manure and Chicken litter can also be used but must be well broken down and composted or root burn will occur. Manure 10 to 20 tons per hectare and Chicken litter 2 to 5 tons per hectare. Ploughing should be done to a depth of 30 to 35cm deep making sure to break down the old plough pan. Ripping then discing is also a good way to prepare the tilth for planting. Not too cloddy or too fine tilth is necessary. During winter months if possible plant on north facing slopes to achieve better soil warmth.

## Spacing

Planting can be done on beds during the rainy season which helps with drainage and on the flat during the winter period. If beds are made they should be 1.5metres centre to centre. 2 rows on the top of the bed, 60cm apart and 40cm in row. Planting on the flat rows can be 60cm apart and planting stations 40cm in row. Plant populations should be between 33,000 – 40,000 depending on market requirements. Higher plant populations tend to give smaller curd sizes.

## Fertilizers

A balanced basal Compound type fertilizer of either “A”, “B” or “C” should be applied prior to planting. This can be done using a Vicon spreader if growing on the flat or a ridger type applicator if planted on beds. Cupping with fertilizer cups by hand into the planting hole can also be done but the fertilizer must be well mixed in the hole to prevent root burn. On soil analysis results and soil types, rates of fertilizer can be applied ranging from 500kg – 750kg per hectare. Cauliflowers will require around 400kg a hectare of AN split into 3 applications between weeks 2 and 6 after transplanting. During the rainy season if the crop is planted on lighter soils an extra top dressing might be needed after heavy leaching rains. Cauliflower plantings going into winter should be top dressed with Calcium Nitrate , instead of AN as it is quicker acting in cool soils. Cauliflower is susceptible to Boron deficiency which causes “Hollow Stem” so be vigilant

## Seedlings

Planting with seedlings is the most practical method. Use a recognised Nursery like Prime Plants Nursery where strong and healthy seedlings are raised. At transplanting good seedlings give a base for a uniform crop helping with reduced costs at harvest. Plant around 10% more plugs per hectare of your selected plant population, this should ensure good seedling selection. When using seedlings or speedlings as they are also known, at transplanting make sure good plug to soil contact is made so the root system can leave the plug and quickly enter into the fertilizer enriched soil. Plant the Speedlings as soon as possible after pulling them from the trays to avoid the tiny hair roots drying out. Plant into pre irrigated soils in which the soil has been made up to field capacity. After transplanting a light settling in irrigation is required to remove air pockets between the plug and the soil. It is recommended that you dip your seedlings in a solution of Actara to give the plants 6 weeks protection from Aphids and Whitefly. Also apply a foliar spray of Bion to the seedlings to activate the plants own defence mechanism against bacterial and virus attack.

## Varieties

Selection of a variety depends on where it is to be marketed. Cauliflower is mostly a cool weather crop. Varieties vary in Curd size from 600grams up to 1kilo. Varieties must be selected for summer or winter production. Be careful in summer as Cauliflower is susceptible to “Black Rot”. Varieties need to have a waxy leaf to deter Diamond Back Moth from destroying the crop. A good self- wrapping type Cauliflower is necessary such as Spacestar which saves on labour costs for tying the leaves over the head to prevent discolouration. Cauliflower is also frost tolerant. Contact a Prime Seed Agronomist for advice on which variety you need for different times of the year.

## Harvesting

Cauliflower heads are ready for harvest when the curds start to expose themselves through the natural leaf wrapping, so careful monitoring of head size is important. Exposed heads will turn yellow to cream or brown, making them unsalable. Harvest period is normally 10 – 14 days but growers should aim to do as few cuts as possible, which saves on labour. Depending on variety selection and season, Cauliflowers take 75 – 90 days to mature after transplanting. Once the heads are cut cooling down in field shelters with wet walls or refrigeration is advised. Quick transport to market is a must. Cauliflower heads bruise easily so be careful and pack properly.

## Irrigation

During the dry winter months irrigation is essential. Overhead sprinkler irrigation is the most common, followed by flood and more recently “drip” irrigation. If growing Cauliflower during summer, irrigation must be spot on or “Hollow Stem” will occur due to fluctuations of water in the soil. Approximately 600mm – 750mm of irrigation should be allowed for to produce a good crop of Cauliflower. So planning water usage from, dams, rivers, and boreholes can be worked out to match hectares to be planted. As the plant increases in size and leaf area, and the start of the “Curd” forming, the amount of water required also increases. Irrigation should be planned on a weekly basis and the soil depletion area checked regularly to plan for the next irrigation cycle. The use of an “Evaporation Pan” should help with this. On medium to heavy clay soils irrigation should be given when approximately 25% of available water has been used. Water stress can cause the self-wrapping protection to fail exposing the “Curd” to sunlight turning it cream or yellow also making it non marketable

## Rotations

Never plant a Cauliflower crop following another Brassica crop i.e. Cabbage, Broccoli or Rape. Rotate with a legume or Root crop.



# Cauliflower Spray Guide

Stage	Nursery	Transplanting & Establishment	Rapid Leaf Growth	Floret Formation	Floret / Head Expansion	Harvest
Days:	0-30	30-35	40-60	50-70	65-105	80-155
Pest Problems						
Soil Pests & Aphid		Actiara Soil drench or Dip				
Cutworms		Karate Zeon / Ampligo				
Diamond back Moth			Ampligo / Match / Karate Zeon/ Proclaim			
General Caterpillars				Ampligo / Match / Karate Zeon/ Proclaim		
Aphids		Actiara Soil drench		Actiara / Ampligo / Polo		
Disease Problems						
Damping off & Black Leg	Apron Star Seed Dress					
Bacterial Black Rot		Bion / Copper Oxy				
Downy Mildew	Revus / Ridomil / Follo Gold / Bravo					
Club Root	Quintozene					
Alternaria		Bravo / Ortiva / Score/Amistar Top				
Weed Problems						
Before planting - post emergence perennials	Touchdown					
Before planting - post emergence annuals	Gramoxone / Touchdown					
Pre-emergence: grasses		Dual Magnum				
Post-emergence: grasses			Fusilade Forte			
Nutgrass (Yellow)		Dual Magnum				

CROP	DAYS TO MATURITY		PLANT SPACING (cm)		PLANTS/HA X1000	AVERAGE SEED PER GRAM	SEED REQUIREMENT (Kg/Ha)	COMMON PESTS	COMMON DISEASES
	WARM	COOL	IN ROW	BETWEEN					
Garden Beans	55	65	2x7*	50	285	4-5	75	Bollworm	Rust Anthracnose Halo Blight
Beetroot	80	110	10*	20	450	50-60	8	Aphids	<i>Ccpa</i> <i>Rzoc</i>
Broccoli	70	90	40	70	36	225	0.2	Diamondback Moth Aphids	Black Rot White Blister
Butternut	90	120	50	100	20	8-10	3	Fruit Fly	Gummy Stem Blight Anthracnose
Cabbage	80	110	40	50	30	300	0.2	Diamondback Moth Aphids	Black Rot Club-root S
Carrot	90	120	3*	15	1100	800	2	Nematodes	<i>ta</i>
Cauliflower	85	110	40	70	36	240	0.2	Diamondback Moth Aphids	Black Rot Club-root
Cucumber Field	60	85	40	150	16	40	16 000 Seeds	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Cucumber Tunnel	65	85	45	150	16	40	3 per m <sup>2</sup>	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Eggplant	75	90	50	75	27	220	0.15	Thrips Aphids	Powdery Mildew
Gem Squash Semi-bush	50	70	35	150	18-22	10-12	4	Pumpkin Fly	Powdery Mildew
Gem Squash Vine	55	80	50	150	14	10-12	2	Aphids	Virus Diseases
Hubbard Squash	110	130	100	150	7	6	1.5	Pumpkin Fly Aphids	Powdery Mildew
Lettuce	50	70	30	60	55	800-1000	0.05-0.07	Aphids Leafminer	Powdery Mildew Bacterial Rot
Marrows	35	55	40	150	18	8-10	2.5	Fruit Fly Whitefly	Virus Diseases Powdery Mildew
Melon	85	100	40	150	16	20	1	Fruit Fly	Anthracnose Fusarium Root Rot
Onions	170	190	8*	20	850-1000	250	3.5	Thrips	White Bulb Rot Pink Root Rot <i>ta</i>
Peppers	70	85	2x40*	150	30-35	150	0.25	Aphids Thrips	Virus Diseases Phytophthora Root Rot
Pumpkin Semi-bush	90	120	80	180	8	4	2	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Pumpkin Vine	120	140	100	180	5	4	1.5	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Sweet corn	75	100	20	90	55	8	8	Stalk Borer Bollworm	Rust NCLB
Swiss chard	60	75	20*	45	200	60	4-6	Aphids	<i>Ccpa</i>
Tomato	80	100	40	150	16	250	0.1	Bollworm Whitefly Nematodes	Blight Bacterial Wilt Viruses
Watermelon	80	90	50	180	6	20	0.3	Fruit Fly	Gummy Stem Blight Anthracnose