

# **DR. SUBHRAJYOTI CHATTERJEE**

**B.SC. (HORT.), M.SC. (HORT.) VEGETABLE SCIENCE, PH.D.  
VEGETABLESCIENCE**

**RESEARCHGATE:**

<https://www.researchgate.net/profile/Subhrajyoti-Chatterjee-4>

**GOOGLE SCHOLAR:**

<https://scholar.google.com/citations?user=Fj1lUPoAAAAJ&hl=en&authuser=1>



# Broccoli

*(Brassica oleracea var. italica L.)*

**Family : Brassicaceae**

- ♣ Morphologically, broccoli resembles cauliflower.
- ♣ The plant forms a head consisting of green buds and thick fleshy flower stalks.
- ♣ The terminal head is rather loose, green in colour and the flower stalks are longer than cauliflower.
- ♣ In sprouting broccoli, besides main head, long slender small heads (called spears or sprouts) are developed in the axils of the leaves.
- ♣ The spears become ready for harvest after removal of main head.
- ♣ Both terminal head and the sprouts with bud clusters are consumed as salad or cooked vegetable.

# Uses

- ♠ It is becoming popular amongst Indians because of its high nutritive value.
- ♠ It carries organoleptic or anticarcinogenic properties and is a rich source of vitamins, minerals, protein etc.
- ♠ It has about 130 times more Vitamin A contents than cauliflower and 22 times more than cabbage.
- ♠ It is also a rich source of sulphoraphane, a compound associated with reducing the risk of cancer.

# CLIMATE

- ▶ It is mainly grown as a winter crop in most parts, however in high hills may be grown as a spring summer crop.
- ▶ Sensitive to temperature as bud clusters grow loose quickly and give rise to bracts under warm weather conditions.
- ▶ Light frost causes considerable damage to the buds, though vegetative growth is not affected to that extent.
- ▶ An optimum temperature of 12-18 °C is suitable for proper head development

# Different Types of Broccoli

<b>Purple sprouting broccoli</b>	Biennials, branched, purple spears, variable, early and late forms overlapping.
<b>Purple cape broccoli</b>	Biennials, single purple heads, variable
<b>White sprouting broccoli</b>	Biennials, branched, white spears. Distinct early and late maturing forms of which the late type more strictly with in the botrytis group.
<b>Purple Sicilian broccoli</b>	Single heading pale-purple heads also known in horticulture as purple cauliflower.
<b>Couve broccoli</b>	‘Roxo de Cabeça’ Tall purple heading, sprouting type from Portugal.
<b>Calabrese</b>	Green sprouting broccoli from Calabrian region. Now a world wide crop and virtually single heading. Many hybrid cultivars are available.
<b>Black broccoli</b>	Highly branched annual with dark green spears and sickle shaped leaves, from Rome area.





**White sprouting**



**Purple cape**



**Purple Sicilian**



**Calabrese**



**Purple sprouting**



**Couve**



**Black Broccoli**





**Palam Samridhi**



**Palam Vachitra**





**Palam Haritika**

**Palam Kanchan**



# Nursery Sowing Time

**North Indian Plains**

**Mid-Aug. to Mid-Sept**

## Himachal Pradesh

**Low Hills**

**September- October**

**Mid Hills**

**August – September**

**High Hills**

**March- April**

- ▶ **Seedlings become ready for transplanting in 4-5 weeks time.**
- ▶ **Seedlings 5mm in diameter are better for field setting and must be about 10-12cm in length at the time of transplanting.**

## **Seed Rate**

**400-500 g/ha**

## **Spacing**

**45cm X 45cm**

**Field preparation, Manures and fertilizers, Intercultural and weed management, and irrigation requirements are same as cauliflower**

# Harvesting

- ⌘ It is important to harvest the broccoli heads at correct time i.e.
- Before the buds open
- Bud clusters are compact.
- ⌘ The heads are cut off with about 15cm of the stem attached in case of sprouting broccoli.
- ⌘ After cutting, part of the foliage is removed from the harvested shoots.

## Yield



150-200 q/ha



# Storage

- ❑ The shelf life of broccoli heads & sprouts is significantly affected by temperature and not much influenced by relative humidity.
- ❑ At temperature 12 – 17°C and RH between 75% it can be easily stored for 3 days.
- ❑ Under cool storage (3°C & 88% RH) the shelf life of heads can be extended upto 31 days.
- ❑ Packaging in LDPE (Low density polyethylene) bags helps in keeping the broccoli more fresh and green under low temperature.



**Broccoli plants grow to be about 24" tall. The main group of florets, or "head," grows in the center of the leaves.**



**Broccoli leaves are large, blue-green, and lobed.**



**Broccoli leaves and cauliflower leaves are very similar, especially in the immature stage. However, broccoli leaves tend to be blue-green in color (compared to the bright green cauliflower leaves). Broccoli leaves are also broader than cauliflower leaves and have a lobe-like structure(s) at the base of the leaf.**