

# KALE PRODUCTION



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## Kale Leaves: An Introduction

Scientific name of Kale is Brassica oleracea var. acephala. Kale is an exotic temperate Cole

Crop which is mainly grown for its edible leaves.

### Production Requirements

**Climatic Requirements:** A temperate climate is most favourable for its cultivation. It is a frost hardy plant and can With stand even very low temperatures up to  $-15^{\circ}\text{C}$ .

**Soil Requirements:** Kale plants thrive well in a well-drained, sandy loam soil which is high in organic matter with a neutral pHs

### Kale Varieties

A list of the important varieties are given in the below table:

Varietal type	Height	Popular varieties
Dwarf Kale Varieties	Below 40cm	Dwarf Green Curled Scotch Dwarf Moss Curled
Medium-Tall Kale varieties	Between 40-80cm	Moss Curled Hamburger Market
Tall kale varieties	Above 80 cm	

## Considerations

Major considerations for the successful production of kale leaves are as given in the following table:

<b>Propagation</b>	Mainly through Seeds
<b>Sowing of Seeds</b>	Seeds are generally sown in well-prepared nursery-beds  Direct broadcasting of seeds in the main fields is also practiced occasionally
<b>Seed Rate</b>	400 grams of seed is the recommended seed Rate for one hectare area
<b>Sowing Time</b>	August-October is sowing time in Plains while August-September is ideal sowing time for hilly areas
<b>Transplanting Age</b>	5-6 weeks old seedlings are transplanted in the main field
<b>Spacing</b>	45cmx30cm

## Fertilizer Schedule

Recommended fertilizer dose is: 150kg N; 75kg P and 75kg K for tropics and sub-tropics

<b>At the time of Land Preparation</b>	A basal dose of 20–25 tons of farmyard manure (FYM)
<b>N-Application</b>	1/3 rd N at planting time  1/3 rd N 30–40 days after planting 1/3 rd N 15–20 days prior to first harvesting
<b>P and K application</b>	full doses of P and K at planting time

## Irrigation Schedule

Even though Kale is a drought resistant crop, irrigation should be scheduled in advance and Regular irrigations should be done according to the plant requirements.

Irrigation schedule is given in the following table:

<b>First Irrigation</b>	Immediately after transplanting
<b>Subsequent Irrigation</b>	At 15-20 days interval

## Interculture and After care

Regular hoeing and weeding is recommended until plants grow well and leaves cover the Soil surface. 2–3 hoeing and weeding are recommended.

## Harvesting

Harvesting period in tropics is from November to January. Appropriate harvesting stage is when the plant is at appropriate vegetative stage. During harvest process, the whole rosette of the plant is harvested

## Yield

Average yield is 200–250 Quintals/Hectare

## Post Harvest Management

<b>Grades, Sizes</b>	Now there are no market grades or sizes for Kale leaves
<b>Packaging</b>	Uniform sized bunches are tied together with rubber bands, and then packaged in plastic bags or clam-shell containers before placing them in standard sized corrugated cartons. Perforated polyethylene liners should be used in the cartons
<b>Pre-cooling</b>	Precooling is done at or above 0 C (32 F) immediately after harvest
<b>Optimum Storage</b>	Chives are stored for 2 to 3 weeks at 0 C (32 F) with 95 to 100%
<b>Conditions</b>	Relative-Humidity
<b>Retail Outlet Display</b>	Use of water sprinters is acceptable to maintain the freshness of freshly arrived Kale-Leaves
<b>Chilling Sensitivity</b>	Kale leaves are not chilling sensitive
<b>Quarantine Issues</b>	No Issues

## Marketing

<b>Export Markets</b>	<p>Mode of transport: mainly by air</p> <p>For export by air, product is transported the day after harvest</p> <p>Kale leaves have a well-established global market in Asia, Mexico, and Central America</p>
<b>Local Markets</b>	<p>Study local market before marketing your product for local or domestic markets</p>

According to DGCIS, the United Arab Emirates (UAE), Nepal, and Maldives have established markets for Indian kale leaves and kohlrabies. India's export statistics for the Kale Leaves and Kohlrabi/KnolKhol for the year 2010-2011 is as shown in the following Table:

Country	Qty (KG)	Value (INR)
<b>United Arab Emirates</b>	499447	4532302
<b>Nepal</b>	3646597	31633661
<b>Maldives</b>	1745070	27051091
<b>Bangladesh</b>	36400	249900
<b>United States</b>	29701	366936
<b>Russia</b>	21000	804142
<b>Qatar</b>	7490	293416
<b>United Kingdom</b>	6396	44592
<b>Oman</b>	3000	122449
<b>South Africa</b>	3000	4508
<b>Canada</b>	2022	12024
<b>Singapore</b>	1543	64495
<b>Kuwait</b>	1000	26799



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