

Dianthus | Carnation

Growing manual



 HilverdaFlorist

Office

Dwarsweg 15
1424 PL De Kwakel
The Netherlands
+31 297 328 229

Follow us online:

@hilverdaflorist



info@hilverdaflorist.com
www.hilverdaflorist.com

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Flower profile

Genus	Dianthus	Starting material	Rooted cuttings (unrooted cuttings optional)
Species	caryophyllus	Tray size	HilverdaFlorist offers:
Family	Caryophyllaceae		• 144 cell trays • 500 rooted cuttings/unit • 2,500 unrooted cuttings/unit
Common name	Dianthus / Standard & Spray Carnation		

Planning & Preparation

Location	• Standard: Cool greenhouse, (polythene) tunnel • Spray: Cool greenhouse, (polythene) tunnel and open field
First harvest	3 - 5 months after planting.
Life cycle	Biennial / Perennial: 2 flushes per year, production depending on variety and climate.
Plant timing	Depending on regional climate conditions. For planting: Ideally warm, humid and fairly bright light conditions.
Plant density	For maximum production: wide beds and narrow paths. Bed width: 1.00 m / path width: 45 - 60 cm. 28 - 36 plants per net m ² , 19 - 24 plants per gross m ² . Shallow planting is essential; the top of the plug should still be visible (80% of the plug should be under the soil).
Netting	Required. • Standard: at least 5 nets • Spray: at least 4 nets • Mesh dimensions: 12.5 x 12.5 cm or 15 x 15 cm.
Irrigation method	Drip irrigation. Use 2 - 3 driplines according to bed width and dryness of the soil.



Special activities

Soil disinfection	Optional, by using steam, solarisation or chemical disinfection.
Pinching	Standard and Spray: recommended to pinch once, above 5 th - 6 th leaf pair. Pinch in the morning hours.
PGR	Not needed
Disbudding	• Spray carnations: remove only the main bud when it is of significant size • Standard carnations: remove side buds (only the main bud is left)

Media

Initial media	Well-drained soil is preferred. Substrate is optional.
Soil analysis	• pH: 5.5 - 6.5 • EC: 1.5 - 2 mS/cm

Climate

Temperature	Optimal temperatures for a quick start are 15 - 16°C day and night. For growing on, mild day temperatures and cool night temperatures are most ideal. A significant difference between day and night temperatures results in more stem length.	Humidity	RH 60 - 85%
Day length	Facultative long day. Combination of high light and high temperatures may result in shorter stems.	Irrigation	Start with a clean water supply overhead for the first 2 - 3 weeks after planting. (avoid excess watering). Later on, drip irrigation is advised. Keep constantly moist.
Light / shading	Plants thrive at naturally high light levels, but supplementary light is not required. Use shading (up to 50%) when grown in peak heat / light conditions. Optional to add lighting after pinching when the shoots have developed 7 leaf pairs, for early bud development. Artificial lighting: constantly 18 µMol/ m ² s, 8 Watt/m ² for at least 2 weeks or cyclic during 4 - 6 weeks.	CO₂	Optional / beneficial. Optimum level: 700 - 1,000 ppm.

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Fertilisation

Start fertilising 2 weeks after planting.

Basic target values of irrigation water, based on rainwater / RO water:

			Cations: millimol/l					Anions: millimol/l					Trace elements: micromol/l					
	pH	EC	NH ₄ ⁺ *	K ⁺	Na ⁺	Ca ²⁺	Mg ²⁺	NO ₃ ⁻	Cl ⁻ *	SO ₄ ²⁻	HCO ₃ ⁻	H ₂ PO ₄ ⁻	Fe	Mn	Zn	B	Cu	Mo
	water	mS/cm 25°C	Ammonium	Potassium	Sodium	Calcium	Magnesium	Nitrate	Chloride	Sulfate as S	Bicarbonate	Phosphate as P	Iron	Manganese	Zinc	Boron	Copper	Molybdenum
Soil • soil target	6.0	1.2	0.1	1.5		2.5	1.2	4.0		1.5		0.1	8.0	1.0	1.0	15.0	0.5	0.3
Cocopeat substrate • drip target	5.3	1.7	1.0	5.8		3.8	1.5	13.0		1.5		1.3	25.0	10.0	4.0	30.0	1.0	0.3
Cocopeat substrate • drain target	6.0	1.1	0.1	3.0		3.0	1.5	6.0		2.0		0.8	15.0	1.0	2.0	25.0	1.0	0.3

* depending on pH level

When using a different water source, add the EC value of basic water to the EC of the drip water mentioned in the chart, or consult our team.

Challenges

Key tips

Botrytis, rhizoctonia, rust, fusarium, powdery mildew, alternaria and ring spot may occur. Scout for thrips, caterpillar and red spider mites.
Ask for our list of recommended plant protection products.

- Use a good netting support system and make sure to tighten the nets properly.
- Ventilation is key to avoid fungus diseases and too high temperatures.

Harvest

Post harvest

- Standard: harvest when flowers are still in bud stage with the first petals unfolding and showing colour.
 - Spray: harvest when at least 1 - 2 buds are opening and 1 - 2 buds show colour.
- Use a small sharp knife or scissors. When harvesting, cut the stems above the 2nd leaf pair to ensure good development of the plants for a new flush. After the final flush, the plants may be removed entirely.

After harvesting, put in clean water. Carnations are ethylene sensitive. Pre-treatment with sugars and anti-ethylene agents result in a desirable increase in postharvest longevity.
Store cool at approx. +5°C.

Knowledge base | Our knowledge base offers both inspirational and informative content, covering a wide range of topics, including cultural research, product information, the HilverdaFlorist team, industry trends, sustainability, innovation and more.
Scan the QR code to visit our knowledge base.



Source

Contact [HilverdaFlorist](#) or our [worldwide sales network](#) for more information, tailored advice or ordering.
Lead time: RC 144 cell trays: 7 weeks

Disclaimer

NOTE: This growing manual can be used as a reference only. Timing and performance will vary depending on the climate, local circumstances, time of the year and other factors.
HilverdaFlorist BV doesn't accept any liability. - Version: Aug 2023