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| Cultural Information for: | Flowering Kale Yokohama | Annual |
| Common Name: | Flowering Kale | |
| Botanical Name: | Brassica oleracea | |
| Seed Count: | 8,500 /ounce | 300 / gram |
| Optimum Germination Temperature: | 70°F / 21°C | |
| Optimum Growing Temperature: | 50-68°F / 10-20°C | |

Plug Production – 28 days (288 / 12 x 24 tray)

Stage One (days 1-5) Single sow seed into a 288 plug tray filled with a sterile and well drained media. Optimum pH is 5.5-6.2 with a low nutrient charge (EC < 0.5 mmhos 2:1 dilution) and a temperature of 70°F/21°C. Lightly cover with coarse vermiculite as seed requires light to germinate.

Stage Two (days 6-14) As soon as seedlings emerge move the trays to a cool and bright location with good air movement. Optimum temperature is 55-60°F/13-15°C. In summer under high temperature conditions placing trays outdoors under shade cloth works well. Fertilize with 50 ppm N using a well-balanced calcium-nitrate-based fertilizer to strengthen the seedlings.

Stage Three (days 15-22) Maintain optimum temperatures, if possible, and fertilize with 100 ppm N as needed to maintain an EC between 0.7 to 1.0 mmhos (2:1 dilution).

Stage Four (days 23-28) The seedlings are approaching the transplant stage and should have 2 pairs of true leaves. Do not delay transplanting to avoid stretching.

Transplanting

Media: Flowering Kale does best in a soil-based mix (20-30% field soil), but soil less media can also be use with proper management. Optimum pH is 5.5-6.2 with a low nutrient charge.

Container: Flowering Kale Yokohama is targeted for production in 4-6 inch/10-15 cm. pots.

Spacing: The Yokohama series is more compact than the Nagoya series. To maximize plant size, and reduce stretching, allow sufficient space between the plants.

Fertilizer: Fertilize with 150 ppm N. using a well balanced calcium nitrate-based fertilizer. Optimum EC is 1.0-1.5 mmhos, (2:1 dilution). Excess fertilizer delays leaf coloring and a deficiency causes the outer

leaves to yellow and drop off. To avoid boron deficiency, apply 0.25 ppm boron when applying fertilizer to the crop.

Light: Flowering Kale grows well outdoors under full sun up to 10,000 foot candles/107,000 lux.

Growth Regulator: Yokohama is naturally compact and should not require chemical growth regulation for 6 inch/15 cm. pots. A light application of growth retardant, once the plants have filled in the container, tones the plant and intensifies the leaf color. Suggested rates would be B-Nine® (daminozide) at 500-1,000 ppm or Bonzi® (paclobutrazol) at 4-8 ppm depending on average daily temperature and crop stage. Reapply as needed.

Coloring: The plants need to be of sufficient size before color initiation. Leaf coloring begins when the night temperature drops below 50-55°F/10-13°C for 2-3 weeks and is most intense between 35-45°F/7-7°C.

Note: Yokohama is primarily used for its unique leaf texture, with less intense leaf coloration when compared to the Nagoya series.

Scheduling:

| Container Size | Weeks to the start of leaf color |
|-----------------|----------------------------------|
| 4 inch / 10 cm. | 10-11 weeks from sowing |
| 6 inch / 15 cm. | 11-12 weeks from sowing |

Insects: Aphids, caterpillars, cut worms

Disease: Botrytis, downy mildew

Variety comparison

| Variety | Height | Width |
|----------------|-----------------|-----------------|
| Nagoya Red | 10 in. / 25 cm. | 12 in. / 30 cm. |
| Yokohama Red | 7 in. / 18 cm. | 10 in. / 25 cm. |
| Nagoya White | 6 in. / 15 cm. | 10 in. / 25 cm. |
| Yokohama White | 6 in. / 15 cm. | 9 in. / 23 cm. |

“All information given is only intended for general guidance and may need adjustment to meet individual needs. Cultural details are based on North America conditions and Sakata cannot be held responsible for any crop damage related to the information given herein. Application of recommended growth regulators and chemicals are subject to local and state regulations. Always follow manufacturer’s label instructions. Testing a few plants prior to treating the entire crop is best”.