

# ***Helianthus annuus***

## ***Valentine***

Sunflower

### ***Culture guide***

**Uses:**

Plants for bedding, cut flower production

**Exposure:**

Sun

**Garden height:**

59" / 150 cm

**Crop time:**

10-12 weeks

**Sow time:**

Indoor forcing: March-August, sowing in intervals;

Outdoor forcing: April-Mid July

**Sowing method:**

1-2 seeds per plug, sowing directly into field is recommended

**Germination:**

5 days at 65-75 °F (18-24 °C). Supplemental lighting during plug germination improves quality. Stage II 70 °F (21 °C). Increased light levels during plug production to control seedling stretch are beneficial to overall crop quality. Stage III & IV reduce temperatures to 62 °F (17 °C), begin feeding at 100-150 ppm.

**Growing On:**

Direct sow seed or transplant at two true leaf stage. Space seed or seedlings at 5x5" (12x12 cm). Begin fertilizing at 100 ppm nitrogen after transplanting. Increase fertilization to 200-250 nitrogen in a well-balanced mix after three weeks. Maintain temperatures above 68-72 °F (20-22 °C) for improved stem length and flower quality. Fertilize weekly at 200-250 ppm nitrogen. Do not allow plants to become dry as leaf scorch can occur. Late day watering can also contribute to foliage disorders.

**Media:**

Field: Before sowing treat substrate with herbicide or fight the weeds mechanically and fertilize the field. The seeds should develop without any plant concurrence. Standard fertilization: 100-120 g/m<sup>2</sup> of a slow release fertilizer. Greenhouse: Use a well-drained, growing substrate with 15-30 % clay, 1-3 kg/m<sup>3</sup> complete balanced fertilizer, 0-2 kg/m<sup>3</sup> slow release fertilizer (3-6 months), iron-chelate, micronutrients, pH: 5.5-6.2.

**Temperature:**

Field: cultivation is possible from April onwards. Grow at 15-18 °C . Cultivate flowering plants not below 12 °C.  
Helianthus plants do not tolerate frost.

**Fertilization:**

Field: N min soil value: approximately 150 g/m<sup>2</sup>.  
Avoid high nitrogen levels in soil. Temperatures below 10 °C can be a cause for iron and phosphate deficiency.

Greenhouse: High fertilization levels are required. Fertilize the crop weekly with 200-250 ppm nitrogen, using a potassium balanced fertilizer (N: K<sub>2</sub>O-ratio: 1:1,5). Avoid high ammonium and high nitrogen levels. Prevent magnesium deficiency by applying magnesium sulphate (0,05 %)

1-2 times and in case of iron deficiency apply iron-chelate for 1-2 times.