

annual  
15 - 40 s/gr  
Seed form

## Helianthus annuus tall F1

### CUT FLOWER CULTURE

**culture** greenhouse/open field

**sowing method** DS/TP

**sowing season**  
year round

**germ temp.** 21-24°C (70-75°F)

**growing temp.** 18-25°C (64-77°F)

**plug crop time**  
10-14 days

**crop duration**  
8 - 11 weeks from sowing,  
depending on time of year

**seed requirement**  
8 - 10 kg/ha (if 17 sds/gram)

**pests/diseases**  
Mice, pigeons, doves, rabbits. Thrips,  
aphids, snails. Botrytis, sclerotinia and  
downy mildew.  
Preventative treatment is advised.

**fertilization (f)**  
No or little fertilizer during growth.  
Before sowing or planting, administer  
a well-balanced fertilizer, low on N,  
with potassium, magnesium and  
phosphates. During the culture it is  
advisable to minimize irrigation. See  
also cultivation tip.

### SOWING DETAILS

• Direct sowing (DS):  
Sow when frost danger is past  
(NL week 12 - 28). Early season:  
cover with agro or fleece tissue, also  
to protect against birds.

In rows : 40 cm apart/see density  
cover : cover with 3-4 cm soil  
(m) : level 4  
(t) : soil temp. > 12°C (54°F)  
(f) : see cultivation tip  
Germination time 10-15 days

• Pre-sow and transplant (TP):  
soil : sterile sowing mix  
pH 5,5-6,2 and 0,7 EC  
sow : 1 seed per plug (288 tray)  
cover: lightly cover with sand

days 1 - 4  
(m) level 4  
(t) 21-24°C (70-75°F)  
(f) < 100 ppm N, < 0.7 EC

days 5 - 6  
(m) level 3-4  
(t) 20-21°C (68-70°F)  
(l) 27.000 lux (2500 fc)

days 7 - 10  
(m) level 3  
(l) 54.000 lux (5000 fc)  
(f) 100 - 175 ppm N, 0,7-1.2 EC

Transplant at 2 true leaf stage.

### GROWING ON

**soil/media**  
See cultivation tip.  
pH 5,5-6,2 and 0,7 EC

**netting**  
Netting is optional in windy areas.

**pinching**  
Optional for branching types only. See  
note.

**plant density**  
Branching types:  
10-20 plants/m<sup>2</sup> (2-4 pl/ft<sup>2</sup>).  
Single-stems: 32-40 pl/m<sup>2</sup> (6-8 pl/ft<sup>2</sup>)

**moisture (m)**  
Minimize irrigation after germination in  
order to reduce disease pressure,  
overgrowth and weak plants.

**temperature (t)**  
Helianthus does not stand frost.  
Optimum growing temperature before  
flower development:  
day : 18-25°C (64-77°F)  
night: 10-18°C (50-64°F)

**light (l)**  
Helianthus needs day length: 16 hours  
for 10-14 days. During short days (< 13  
hrs) extra light is required. When > 13  
hours blacking is needed for good  
flower development.

### CULTIVATION TIPS

- When lower leaves turn yellow, extra potassium (K) can be applied, but do not to overfeed.
- Dense growing will help to restrain the plant size (and reduce the amount of side branching).
- Aphids during bud formation are a cause of malformed flowers.

### NOTE

- Pinching: not recommended for single-stemmed types. For branching types pinching is optional. test on a small part of the crop. Method: carefully take out growing point when there are 4-5 pairs of true leaves while not damaging the foliage.

### HARVEST

Harvest when outer petals open. Place in water immediately. Avoid large temp. differences. H. annuus is not sensitive to Ethylene.  
For post harvest treatments, see:  
[www.vbn.nl/en/longevity](http://www.vbn.nl/en/longevity) or  
[www.vbn.nl/houdbaarheid](http://www.vbn.nl/houdbaarheid)

moisture levels (m): 1 = dry 2 = normal to dry 3 = normal 4 = moist 5 = wet

This information is for general guidance only, and is in some cases specific for West European conditions. No guarantee is given for the result of the crop, nor is liability accepted for the consequences of applying the indications given.

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# Helianthus annuus tall

Seed form

## CUT FLOWER CULTURE

**culture** open field

**sowing method** DS/TP

**sowing season**

**germ temp.** 21-24°C (70-75°F)

**growing temp.** 18-25°C (64-77°F)

**plug crop time**

10-14 days

**crop duration**

8 - 11 weeks from sowing,  
depending on time of year

**seed requirement**

Normal culture: 50 sds/m<sup>2</sup>

Dense culture:

**pests/diseases**

Mice, pigeons, doves, rabbits. Thrips, aphids, snails. Botrytis, sclerotinia and downy mildew.

Preventative treatment is advised.

**fertilization (f)**

No or little fertilizer during growth. Before sowing or planting, administer a well-balanced fertilizer, low on N, with potassium, magnesium and phosphates, since during the culture it is advisable to minimize irrigation. See also cultivation tip.

## SOWING DETAILS

• Direct sowing (DS):  
Sow when frost danger is past (NL week 12 - 28). Early season: cover with agro or fleece tissue, also to protect against birds.

In rows : 40 cm apart/see density  
cover : cover with 3-4 cm soil  
(m) : level 4  
(t) : soil temp. > 12°C (54°F)  
(f) : see cultivation tip  
Germination time 10-15 days

• Pre-sow and transplant (TP):  
soil : sterile sowing mix  
pH 5,5-6,2 and 0,7 EC  
sow : 1 seed per plug (288 tray)  
cover: lightly cover with sand

days 1 - 4  
(m) level 4  
(t) 21-24°C (70-75°F)  
(f) < 100 ppm N, < 0.7 EC

days 5 - 6  
(m) level 3-4  
(t) 20-21°C (68-70°F)  
(l) 27.000 lux (2500 fc)

days 7 - 10  
(m) level 3  
(l) 54.000 lux (5000 fc)  
(f) 100 - 175 ppm N, 0,7-1.2 EC

Transplant at 2 true leaf stage.

## GROWING ON

**soil/media**

See cultivation tip.  
pH 5,5-6,2 and 0,7 EC

**netting**

Netting is optional in windy areas.

**pinching**

Optional for branching types only. See note.

**plant density**

Branching types:  
10-20 plants/m<sup>2</sup> (2-4 pl/ft<sup>2</sup>).  
Single-stems: 32-40 pl/m<sup>2</sup> (6-8 pl/ft<sup>2</sup>)

**moisture (m)**

Normal culture: normal irrigation.  
Dense culture : grow on the dry side.

**temperature (t)**

Helianthus does not stand frost.  
Optimum growing temperature before flower development:  
day : 18-25°C (64-77°F)  
night: 10-18°C (50-64°F)

**light (l)**

Full sun/high light.  
Helianthus needs day length: 16 hours for 10-14 days. During short day periods (< 13 hours) extra light is required. When > 13 hours blacking will help good flower development.

## CULTIVATION TIPS

- When lower leaves turn yellow, extra potassium(K) can be applied but take care not to overfeed since it will influence plant size.  
- Dense growing will help to obtain a commercial cut flower size and - if branching - reduce the amount of side branching.

## NOTE

- Pinching: only advised for branching types: test on a small part of the crop. Carefully take out growing point when there are 4-5 pairs of true leaves.  
- Aphids during bud formation are a cause of malformed flowers (NL 'apekonten').

## HARVEST

Harvest when the outer petals start to open. Place in water. Large differences in temperature may cause damage. For post harvest treatments, see: [www.vbn.nl/en/longevity](http://www.vbn.nl/en/longevity) or [www.vbn.nl/houdbaarheid](http://www.vbn.nl/houdbaarheid)

moisture levels (m): 1 = dry 2 = normal to dry 3 = normal 4 = moist 5 = wet

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