Helianthus annuus

Pacino®



- Compact pot sunflower
- Different, vibrant yellow color tones
- High quantity of small flowers

Crop Time	Spring: 8 - 10 weeks
Height ⌀	13 " / 33 cm
Width ⌀	9 " / 23 cm
Flower Size ⌀	4 " / 11 cm
Exposure	Sun
Seed Form	Raw
Product Use	Pot, Landscape
Family, Origin	Asteraceae, North + Central America
Minimum Germ. Rate	85%

TECHNICAL GUIDE

Helianthus annuus Pacino®

Flowering

Flowering Type: Facultative Short Day Plant – Under short day length they will initiate and flower more quickly. Short day treatment will result in a more compact plant.

Flowering Mechanism: High light intensity and warmer temperatures shorten the total crop time.

Plug Culture

Germination: Optimum conditions for seedling development, beginning on the day of sowing until radicle emergence. Expect radicle emergence in 3-5 days.

Cover: Cover seed with vermiculite or substrate after sowing.

Sowing method: 1-2 seeds per plug. Can be sown directly into the finished container.

Media: pH 5.5-6.2; EC 0.75 <.

Temperature: 21-24 °C (70-76 °F) until day 5 and then reduce to 18-20 °C (64-68 °F). Temperatures below 12 °C (54 °F) will result in slow and uneven germination.

Moisture: Saturate (5) for the first 2-3 days and then reduce the moisture level to moist (3) on day 4. On day 10 reduce the media moisture further to a medium (2). Alternate between wet (4) and medium (2), allowing the media to approach a medium (2) before re-saturating to wet (4).

Humidity: 95-100 % until day 5, then reduce to 40-60 %. Provide proper ventilation and horizontal airflow to improve oxygen levels in the media.

Light: Supplemental lighting and high light levels will improve seedling quality. Keep the day-length less than 13 hrs. for optimum results.

Fertilizer: Maintain an EC < 1.0. Fertilized water should not exceed an EC of 0.5.

Plug Bulking and Flower Initiation: Optimum conditions during the vegetative stage from cotyledon expansion to flower initiation. This stage is when the seedlings root to the edge of the plug.

Media: pH 5.5-6.2; EC 1.25-1.5

Light: Provide high light levels of 10-14 mol/m^2/ day (3,000-4,000 ft. candles or 30,000-40,000 lx).

Temperature: 18-20 °C (64-68 °F) nights, 20-21 °C (68-70 °F) days.

Moisture: Alternate between moisture levels wet (4) and medium (2). Allow the media to reach a medium (2) before re-saturating to a wet (2). Never allow the plants to dry out completely since yellowing of the older leaves will result.

Fertilizer: Begin fertilizing early on day 5 using a complete fertilizer at 50-75 ppm N. Use a calcium-based fertilizer (14-4-14 or 15-5-15). Under high light conditions a (17-5-17) fertilizer can be used.

Growth Regulators: Growth regulator applications can delay flowering by one week. If needed, sprays with B-Nine (daminozide) can be made at 2,500 ppm.

Fungicides: Preventative applications of fungicides are recommended especially under cooler conditions and low light levels.

Growing On
Media: pH 5.5-6.2; EC 1.25-1.5.

Light: High light levels will shorten the crop time and produce the best quality. Light levels of 10-16 mol/m^2/day (3,000-4,500 ft. candles or 30,000-45,000 lx) are recommended.

Temperature: 15-18 °C (58-64 °F) nights, 18-21 °C (64-70 °F) days. An ADT (average daily temperature) of 19 °C (66 °F) will give the fastest finished crop.

Moisture: Alternate between moisture levels wet (4) and medium (2). Allow the media to reach a moisture level medium (2) before re-saturating to a wet (4). Never allow the media to dry out completely since yellowing of the lower leaves can occur.

Humidity: 40-60 % humidity is ideal. Providing good ventilation and horizontal airflow will help lower the humidity and dry back the media.

Fertilizer: Helianthus require high fertilization levels. Fertilize the crop weekly at 200-250 ppm nitrogen, using a potassium balanced fertilizer (N:K_2 O – ratio 1:1.5). Blended fertilizers that are used for flowering can be used (11-7-23). If fertilizers with high potassium are not available then a complete calcium-based fertilizer can be used (14-4-14 or 15-5-15). Under high light levels a 17-5-17 fertilizer can be used. Application of magnesium sulfate (0.05 %) can be made 1-2 times at 100 ppm to prevent magnesium deficiency. In case of iron deficiency apply iron-chelate 1-2 times.

Growth Regulators: If following good moisture management (allowing the media to dry back sufficiently between watering) no growth regulators should be needed. If plants require growth regulation B-Nine sprays can be made at 2,500 ppm. Application of growth regulators can increase the total crop time by up to one week. Near finish a light drench of Bonzi or Piccolo (paclobutrazol) can be made. Helianthus respond well to a DIF or morning drop in temperature of 2-3 °C (36-38 °F).

Fungicide: Apply fungicides during long periods of low light, cool temperatures and high humidity.

Common Diseases: Pythium, Rhizoctonia and Botrytis.

Pests: Primarily aphids and thrips.

Post Harvest: Fertilize with potassium nitrate at 100 ppm 1-2 weeks prior to shipping.

Timing & Positioning Charts

Plug Crop Time		
288 tray	2-3 wks	
128 tray	3-4 wks	
Finished Crop Time		
	288 tray	128 tray
12 cm (5") pots	5-6 wks	4-5 wks
15 cm (6") pots	6-7 wks	5-6 wks
20 cm (8") pots (3*)	6-7 wks	5-6 wks

*plants per pot

Expert Tip
Providing short day conditions in the early stages of production will result in a shorter finished plant. Application of growth regulators, B-Nine (daminozide) sprays can delay flowering by up to one week.

Moisture Codes

Saturated (5)	Water is easily observed when finger is pressed on cell. Water moves freely from the top of the plug to the bottom.
Wet (4)	Media looks black and is not glistening. The media feels wet to the touch but there is very little water movement.
Moist (3)	Water is not easily visible. When finger is pressed on the cell there is very little movement from top to bottom.
Medium (2)	Media is not black, but now looks medium brown. There is no water movement when pressed with finger.
Dry (1)	Media has changed color to a very light brown and is dry to the touch.

All information in our technical guide is based on our own trials and would therefore be as guideline only. Detailed cultivation aspects vary depending on climate, location, time of year and environmental conditions. Benary expressly disclaims any responsibility for the content of such data/information and makes no representation or warranty for the cultivation of any products listed. It is recommended that growers conduct a trial of products under their own conditions.

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