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CULTURE GUIDE

2022

MARIGOLDS

Growing Techniques

- Dwarf and Semi Dwarf
- Bedding and Cut Flower
- Cut Flower
- Single Stem

MARIGOLD F1- Bedding & Landscape

Hedge-Mary

Scientific name	: *Tagetes erecta*
Use	: Bedding & Landscape
Plant Type	: Annual
Approximate Seed count	: 300 seeds/gram
Seed form	: Natural / De-tailed
Approximate Germination rate	: 85%

Plug Production :

Media

Use well-drained media with a pH 6.5-7.0 and a soil EC 0.75-1.0 mmhos/cm. Seeds should be covered with a thin layer of media to maintain moisture levels. Recommended plug tray size 200 or 288 cells

Temperature

Optimum temperature 22-25 deg C (72-75 deg F). Low temperaturestend to delay plug growth whilst higher temperaturesand shade will induce plant stretch.

Stage 1

- Germination and radicle emergence takes approximately 3-5 days.
- Light is not required for germination.
- Keep media moisture medium wet to saturated, moisture level 4-5.
- No fertilizer needed at this stage.

Stage 2

- Expanding stem and cotyledons take approximately 5-7 days.
- Extra lighting can be supplied at 2,500-foot candles (25,000 lux).
- Keep media moisture medium (level 3) to medium wet (level 4).

Stage 3

- Development of first true leaves approximately in 7-10 days.
- Extra lighting can be supplied at 2,500 f.c. (25,000 lux).
- Keep media moisture levels medium and medium wet.
- Alternate dry to wet, level 3 to 4.
- Apply fertilizer at rate 75-100 ppm N – less than 0.7 EC) with a nitrate-form fertilizer ratio 2:1:3.
- Growth regulator may be used to reduce stretch.
- Media that is too wet encourages the development of a weak root system and disease.

Stage 4

- 4-6 true leaves approximately taking 15-18 days.
- Low temperature tends to delay transplanting by 7-10 days.
- Moisture as per stage 3.
- Feed 1-2 times per week 100-150 ppm N 2:1:3 – 0.7 to 1.2 EC.
- Growth regulator may be used to reduce stretch.
- Do not hold the plugs too long, as this may induce premature flowering.

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MARIGOLD F1- Bedding & Landscape

Plant Characteristics :

Sowing to transplant	: 15 - 25 days
Transplant to flowering	: 35 - 45 days
Flower size	: 8-12 cm.
Plant height	
long day	: 80-100 cm.
short day	: 55-60 cm.
Plant width	
long day	: 55-60 cm.
short day	: 45-50 cm.

Total crop time 1st flowering to end crop

Short day : 50-100 Days Long day : 60-120 Days

Growing On : After 2-3 weeks plants can be transplanted directly into beds with a spacing of 40-45 cm (15-18 ins).

Temperature :

Night: 20-25 C (68-77 F)

Day : 25 deg C and above (77 deg F).

Low temperatures may result in flowering delay and a reduction of first flower quality.

High temperatureswill reduce flower size.

Moisture and Irrigation : Keep optimal media moisture between medium (level 3) to medium wet (level 4). Allow media to dry between watering and then re-saturated. Avoid overhead irrigation directly on to flowers as this will encourage disease.

Light : Extra lighting can improve yields and flower quality.

Fertilizer : Once a week after transplantat150-200 ppmN using nitrate-form of fertilizer ratio 2:1:3. Optimum EC level is 1.0 – 1.2 mmhos/cm. Micronutrients can also be applied.

Insects : Trips, Red spider mite, Leaf miner, Beet armyworm, Common cutworm, Snails, and slugs.

Common Diseases : Botrytis, Pythium, Alternaria, Fusarium, Ralstonia.

Note : The information given is intended for guidance.Crop times may vary depending on location, climate, seasons, height above sea level and other environmental conditions.

Application of chemicals are subject to local and state regulations.

Always follow manufacturer's instructionswhen applyinghorticultural chemicals.

MARIGOLD F1- Dwarf and Semi Dwarf

Little Ducks and Big Ducks

Scientific name	: *Tagetes erecta*
Use	: Containers and beddings
Plant Type	: Annual
Seed count	: 300-350 seeds/gram
Seed form	: Natural / De-tailed
Approximate Germination rate	: 85%

Plug Production :

Media

Use a well-drained, disease free with a pH of 6.0-6.5

Temperature

Night: 20-25 C (68-77 F)
Day: above 25 C (77 F).
Low temperature may result in delay of flowering and quality of the first flowers.
High temperature will encourage flower heads to be reduced in size.

Key Tips

Little Ducks is naturally dwarf variety, PGRs are not required.

Stage 1

- Germination and radicle emergence takes approximately 3-5 days.
- Light is not required for germination.
- Keep media moisture medium wet to saturated, moisture level 4-5. No fertilizer needed at this stage.

Stage 2

- Expanding stem and cotyledons take approximately 5-7 days.
- Extra lighting can be supplied at 2,500-foot candles (25,000 lux).
- Keep media moisture medium (level 3) to medium wet (level 4).

Stage 3

- Development of first true leaves approximately in 7-10 days.
- Extra lighting can be supplied at 2,500 f.c. (25,000 lux).
- Keep media moisture levels medium and medium wet.
- Alternate dry to wet, level 3 to 4. Apply fertilizer at rate 75-100 ppm N – less than 0.7 EC) with a nitrate-form fertilizer ratio 2:1:3.
- Media that is too wet encourages the development of a weak root system and disease.

Stage 4

- 4-6 true leaves approximately taking 15-18 days.
- Low temperature tends to delay transplanting by 7-10 days.
- Moisture as per stage 3.
- Feed 1-2 times per week 100-150 ppm N 2:1:3 – 0.7 to 1.2 EC.
- Growth regulator may be used to reduce stretch.
- Do not hold the plugs too long, as this may induce premature flowering.

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MARIGOLD F1- Dwarf and Semi Dwarf

Plant Characteristics :

Sowing to transplant	: 15 - 25 days
Transplant to flowering	: 20-25 days
Flower size	: 8-10 cm.
Plant height	
Little Ducks	: 20-25 cm.
Big Ducks	: 30-40 cm.
Plant width	
Little Ducks	: 20-25 cm.
Big Ducks	: 25-30 cm.

Total crop time 1st flowering to end crop : 48-60 days.

Growing On : After 2-3 weeks plants can be transplanted into 10 cm (4 in) pots or packs

Temperature :
Night : 20-25 C (68-77 F) , Day : above 25 C (77 F).
Low : temperature may result in delay of flowering and quality of the first flowers.
High : temperature will encourage flower heads to be reduced in size.

Moisture and Irrigation : Keep optimal media moisture between medium (level 3) to medium wet (level 4). Allow media to dry between watering and re-saturated.
Avoid overhead irrigation directly to flowers, this will result in rot disease.

Lights : Provide full light levels as high as possible while maintaining appropriate temperatures

Light & Photoperiodism : Little Ducks and Big Ducks are facultative short-day plants and require full sun. If the day is longer than critical daylength (≈12hrs), it willaffect delay flowering 10 – 14 days compared with short-daylength.

Fertilizer : One week after transplant, apply fertilizer weekly at150-200 ppm N using nitrate-form fertilizer (15-0-0). Alternate with Urea based fertilizer (46-0-0). Optimum EC level is 1.0 – 1.2 mmhos/cm.

Common Pests : Thrips, Red spider mites, Leaf miner, Beet armyworm, Common cutworm, Snail and Slugs.

Common Diseases : Botrytis, Pythium, Rhizoctonia, Alternaria, Fusarium, Ralstonia, Hollow stem, Virus

Note: This information given is only for guideline, crop times may vary depending on the location, climate, seasons, height above sea level and environmental conditions. Application of chemicals are subject to local and state regulations. Should follow manufacturer's instruction prior to apply chemical.

MARIGOLD F1- Bedding & Cut Flower

Bali, Bindi, Sumati and Narai

Scientific name	: *Tagetes erecta*
Use	: Bedding & Cut Flower
Plant Type	: Annual
Approximate Seed count	: 300-350 seeds/gram
Seed form	: Natural / De-tailed
Approximate Germination rate	: 85%

Plug Production :

Stage 1

- Germination and radicle emergence takes approximately 3-5 days.
- Light is not required for germination.
- Keep media moisture medium wet to saturated, moisture level 4-5.
- No fertilizer needed at this stage.

Stage 2

- Expanding stem and cotyledons take approximately 5-7 days.
- Extra lighting can be supplied at 2,500-foot candles (25,000 lux).
- Keep media moisture medium (level 3) to medium wet (level 4).

Stage 3

- Development of first true leaves approximately in 7-10 days.
- Extra lighting can be supplied at 2,500 f.c. (25,000 lux).
- Keep media moisture levels medium and medium wet.
- Alternate dry to wet, level 3 to 4.
- Apply fertilizer at rate 75-100 ppm N – less than 0.7 EC) with a nitrate-form fertilizer ratio 2:1:3.
- Media that is too wet encourages the development of a weak root system and disease.

Stage 4

- 4-6 true leaves approximately taking 15-18 days.
- Low temperature tends to delay transplanting by 7-10 days.
- Moisture as per stage 3.
- Feed 1-2 times per week 100-150 ppm N 2:1:3 – 0.7 to 1.2 EC.
- Growth regulator may be used to reduce stretch.
- Do not hold the plugs too long, as this may induce premature flowering.

Media

Use well-drained media with a pH 6.5-7.0 and a soil EC 0.75-1.0 mmhos/cm. Seeds should be covered with a thin layer of media to maintain moisture levels. Recommended plug tray size 200 or 288 cells

Temperature

Optimum temperature 22-25 deg C (72-77 deg F). Low temperature-end to delay plug growth whilst higher temperatures will induce plant stretch.

MARIGOLD F1- Bedding & Cut Flower

Plant Characteristics :

Sowing to transplant	: 15 - 25 days
Transplant to flowering	: 35 - 45 days
Flower size	: 8-12 cm.
Plant width	: 35-60 cm.

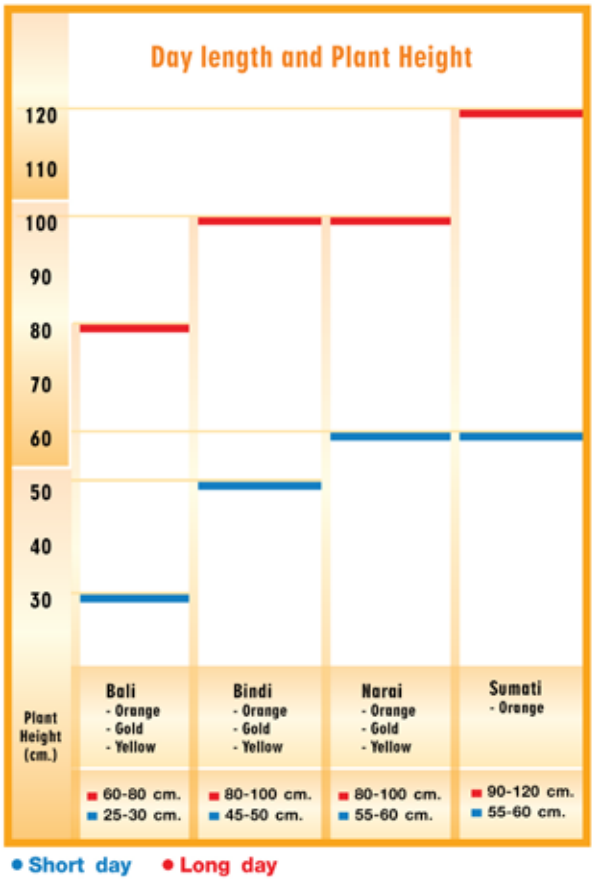
Growing On : After 2-3 weeks plants can be transplanted directly into beds with a spacing of 40-45 cm. (15-18 ins).

Temperature : Night : 20-25 C (68-77 F) , Day : 25 deg C and above (77 deg F).
Low : temperatures may result in flowering delay and a reduction of first flower quality.
High : temperatureswill reduce flower size.

Light : Extra lighting can improve yields and flower quality.

Moisture and Irrigation : Keep optimal media moisture between medium (level 3) to medium wet (level 4). Allow media to dry between watering and then re-saturated. Avoid overhead irrigation directly on to flowers as this will encourage disease.

Total crop time 1st flowering to end crop
Short day : 50-100 Days Long day : 60-120 Days



Fertilizer : Once a week after transplantat150-200 ppmN using nitrate-form of fertilizer ratio 2:1:3.
Optimum EC level is 1.0 – 1.2 mmhos/cm.
Micronutrients can also be applied.

Insects : Thrips, Red spider mite, Leaf miner, Beet armyworm, Common cutworm, Snails, and Slugs.

Common Diseases : Botrytis, Pythium, Alternaria, Fusarium, Ralstonia.

Note : The information given is intended for guidance.Crop times may vary depending on location, climate, seasons, height above sea level and other environmental conditions. Application of chemicals are subject to local and state regulations. Always follow manufacturer's instructionswhen applyinghorticultural chemicals.

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MARIGOLD F1- Cut Flower

Garuda, Chedi, Mishka, Devi, Oriental and White Swan

Scientific name	: *Tagetes erecta*
Use	: Cut Flower
Plant Type	: Annual
Approximate Seed count	: 300-350 seeds/gram
Seed form	: Natural / De-tailed
Approximate Germination rate	: 85%

Plug Production :

Media

Use well-drained media with a pH 6.5-7.0 and a soil EC 0.75-1.0 mmhos/cm. Seeds should be covered with a thin layer of media to maintain moisture levels. Recommended plug tray size 200 or 288 cells.

Temperature

Optimum temperature 22-25 deg C (72-77 deg F). Low temperaturestend to delay plug growth whilst higher temperaturesand shadewill induce plant stretch.

Stage 1

- Germination and radicle emergence takes approximately 3-5 days.
- Light is not required for germination.
- Keep media moisture medium wet to saturated, moisture level 4-5.
- No fertilizer needed at this stage.

Stage 2

- Expanding stem and cotyledons take approximately 5-7 days.
- Extra lighting can be supplied at 2,500-foot candles (25,000 lux).
- Keep media moisture medium (level 3) to medium wet (level 4).

Stage 3

- Development of first true leaves approximately in 7-10 days.
- Extra lighting can be supplied at 2,500 f.c. (25,000 lux).
- Keep media moisture levels medium and medium wet.
- Alternate dry to wet, level 3 to 4.
- Apply fertilizer at rate 75-100 ppm N – less than 0.7 EC) with a nitrate-form fertilizer ratio 2:1:3.
- Media that is too wet encourages the development of a weak root system and disease.

Stage 4

- 4-6 true leaves approximately taking 15-18 days.
- Low temperature tends to delay transplanting by 7-10 days.
- Moisture as per stage 3.
- Feed 1-2 times per week 100-150 ppm
- N 2:1:3 – 0.7 to 1.2 EC.
- Growth regulator may be used to reduce stretch.
- Do not hold the plugs too long, as this may induce premature flowering.

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MARIGOLD F1- Cut Flower

Plant Characteristics :

Sowing to transplant	: 15 - 25 days
Transplant to flowering	: 35 - 45 days
Flower size	: 8-12 cm.
Plant height	: 55-150 cm.
Plant width	: 35-60 cm.

Growing On : After 2-3 weeks plants can be transplanted directly into beds with a spacing of 40-45 cm. (15-18 ins).
Spacing : Short day 40 cm Long day 60 cm

Maintenance : To prevent lodging, use cut flower nets or rope to keep the plants upright. See pictures below.

Temperature : Night : 20-25 C (68-77 F) , Day : 25 deg C and above (77 deg F).
Low temperatures may result in flowering delay and a reduction of first flower quality.
High temperatures will reduce flower size.

Moisture and Irrigation : Keep optimal media moisture between medium (level 3) to medium wet (level 4). Allow media to dry between watering and then re-saturated. Avoid overhead irrigation directly on to flowers as this will encourage disease.

Light : Extra lighting can improve yields and flower quality

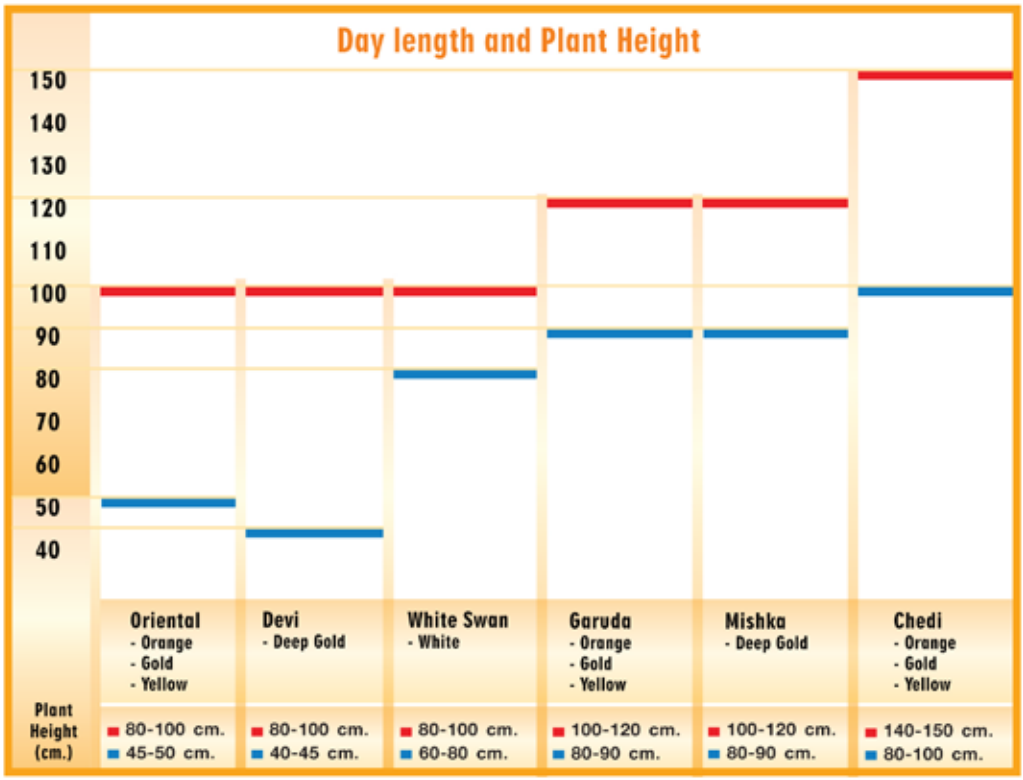
Fertilizer : Once a week after transplant at 150-200 ppm N using nitrate-form of fertilizer ratio 2:1:3. Optimum EC level is 1.0-1.2 mmhos/ cm. Micronutrients can also be applied.

Insects : Thrips, Red spider mite, Leaf miner, Beet armyworm, Common cutworm, Snails, and Slugs

Common Diseases : Botrytis, Pythium, Alternaria, Fusarium, Ralstonia.

Total crop time 1st flowering to end crop

Short day : 50-100 Days Long day : 60-120 Days



Note :

The information given is intended for guidance.Crop times may vary depending on location, climate, seasons, height above sea level and other environmental conditions. Application of chemicals are subject to local and state regulations. Always follow manufacturer's instruction-swhen applyinghorticultural chemicals.

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MARIGOLD F1- Single Stem

Growing Techniques to produce Single Stem Marigolds

Scientific name	: *Tagetes erecta*
Use	: Cut Flower
Plant Type	: Annual
Approximate Seed count	: 300-350 seeds/gram
Seed form	: Natural / De-tailed
Approximate Germination rate	: 85%

Plug Production :

Media

Use well-drained media with a pH 6.5-7.0 and a soil EC 0.75-1.0 mmhos/cm. Seeds should be covered with a thin layer of media to maintain moisture levels. Recommended plug tray size 200 or 288 cells

Temperature

Optimum temperature 22-25 deg C (72-77 deg F). Low temperatures tend to delay plug growth whilst higher temperatures and shade will induce plant stretch.

Stage 1

- Germination and radicle emergence takes approximately 3-5 days.
- Light is not required for germination.
- Keep media moisture medium wet to saturated, moisture level 4-5.
- No fertilizer needed at this stage.

Stage 2

- Expanding stem and cotyledons take approximately 5-7 days.
- Extra lighting can be supplied at 2,500-foot candles (25,000 lux).
- Keep media moisture medium (level 3) to medium wet (level 4).

Stage 3

- Development of first true leaves approximately in 7-10 days.
- Extra lighting can be supplied at 2,500 f.c. (25,000 lux).
- Keep media moisture levels medium and medium wet.
- Alternate dry to wet, level 3 to 4.
- Apply fertilizer at rate 75-100 ppm N – less than 0.7 EC) with a nitrate-form fertilizer ratio 2:1:3.
- Media that is too wet encourages the development of a weak root system and disease.

Stage 4

- 4-6 true leaves approximately taking 15-18 days.
- Low temperature tends to delay transplanting by 7-10 days.
- Moisture as per stage 3.
- Feed 1-2 times per week 100-150 ppm N 2:1:3 – 0.7 to 1.2 EC.
- Growth regulator may be used to reduce stretch.
- Do not hold the plugs too long, as this may induce premature flowering.

MARIGOLD F1- Single Stem

Plant Characteristics :

Sowing to transplant	: 15 - 25 days
Transplant to flowering	: 35 - 45 days
Flower size	: 8-12 cm.
Plant height	: 55-150 cm.
Plant width	: 35-60 cm.

Transplant Stage

Transplant to a loamy soil (pH 6.5 – 7.5) either for open field or greenhouse production with plant spacing between each plant of 10 cm.
1st week after transplant use only water for fertigation.
2-3 weeks after transplant, use fertilizer N 50 ppm form calcium nitrate (15-0-0) to promote vertical growth. From 3rd - 4th week, use fertilizer N 100 ppm by N-P-K ratio: 2:1:3 and supplement with Calcium and Boronas amicro element mix2 times per week.

3 weeks after transplant, trim side branches every week as per photo below.
Lower leaves and old leaves must be removed to increase air ventilation and prevent fungi.
From 5th week to harvest, use fertilizer N 150 ppm by N-P-K ratio: 2:1:3 and supplement with Calcium-Boron as previously mentioned

Insects : Thrips, Red spider mite, Leaf miner, Beet armyworm, Common cutworm, Snails, and Slugs
Common Diseases : Botrytis, Pythium, Alternaria, Fusarium, Ralstonia.

Trimming/pruning removal of side branches and older leaves

Harvest

Most varieties are ready to harvest 40 – 45 days after transplanting. The ideal harvesting time for single stem marigold is whenblooms are about 80% open and still with a little green color in the center. Use a clean sharp knife and cut about 2 inches above the soil.

TORENIA & VINCA

Growing Techniques

- Torenia
- Vinca Pot and Bedding
- Vinca Hanging Basket

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Torenia F1
VERTIGO

Scientific name : *Torenia fournieri*
Use : Pots, Bedding and Landscaping
Plant Type : Annual
Seed count : 16,000 Natural Seeds /gram
Seed form : Pelleted

Plug Production :

Sow seeds on top of peatmoss Media with pH of 5.5-5.8 and EC of 0.5-0.75 mS/cm. Use 288 cell tray with 1 seed per cell. Seeds do not need to be covered.
Use Propamocarb hydrochloride at the rate of 1 cc/1 liter of water and spray on top of the tray to prevent fungus disease.

Temperature

Optimal temperature for germination is 22-25 °C (72-77 °F) with a moisture level of 4.

Stage 1

- Radical emergence takes 3-4 days
- Light is not required for germination.
- Keep media moisture at level 4 and temperature at 22-25 °C (72-77 °F)
- No need to apply fertilizer at this stage.

Stage 2

- Stem elongation and cotyledons expansion take 5-7 days.
- Extra light can be used at up to 2,500 f.c. (26,900 lux).
- Keep media moisture at level 3.
- Apply fertilizer at 50-75 ppm N and EC of 0.5-0.75 mS/cm.

Stage 3

- Development of first true leaves takes 8-15 days.
- Extra light at 2,500 f.c. (26,900 lux) can be applied whilst keep media moisture level 3.
- Allow media to approach level 3 before next irrigation.
- Over saturated media will encourage the development of weak root system and disease.
- Feed fertilizer 1-2 times per week at 75-125 ppm N and EC of 0.5-0.75 mS/cm.

Stage 4

- 4-5 true leaves takes 12-30 days.
- Keeps light at 2,500-5,000 f.c.
- A growth regulator is not required.
- At this stage, plugs should have a good root system that binds the media.
- Do not hold the plugs too long before transplanting, as this may cause stunted plants.

TORENIA CULTURE GUIDE (2)

Plant Characteristics :

Sowing to transplant	25-30 days
Transplant to 1st flower	40-45 days
Flower size	2.5-3 cm.
Plant height	20-25 cm.
Plant width	20-25 cm.

Plug Stage	Stage 1	Stage 2	Stage 3	Stage 4
Moisture	Level 4	Level 3	Level 3	Level 3
Temperature	22-25 °C	20-25 °C		
Light	No Need	Up to 2,500 f.c. (26,900 lux)		2,500-5,000 f.c. (53,800 lux)
Fertilizer	No Need	50-75 ppm N	75-125 ppm N	

Transolanting Stage :

Plugs can be transplanted into containers or beds 25-30 days after sowing. Torenia Vertigo prefers a slightly acid growing media pH 5.5-6.0.

Recommended Container size :

Pot Size & Plants Per Pot
4" Pot : 1 plant
6" pot : 3 plants
8" pot : 4 plants

Growing on Stage :

Temperature : The ideal temperature Torenia is 20-25 °C (68-77 °F) during the day and 20-25 °C (68-77 °F) at night.

Daylength Requirements : Torenia Vertigo is daylength neutral.

Fertilizer : 100-150 ppm N (E.C. of 1.0-1.5 mS/cm.)

Apply fertigation once a day for 6 days. On the 7th day, use pure water to flush out accumulated salts.

Irrigate once a day in the morning. Do not irrigate after 2 pm as this may cause high media moisture and increase disease risk. Allow media surface to dry slightly between watering to improve rooting. When flowers appear, do not allow irrigation water to contact the petals or flowers.

Growing on Stage : Optimal N-P-K ratio 2:1:3

Apply this fertigation once a day for six days. On the 7th day, use only water to flush out accumulated salts.

N: P: K

Liquid Fertilizer	(rate per 100 liter of water)	Application
15-0-0 (Calcium Nitrate)	140 Grams	Once a day for 6 days
0-52-34 (Mono Potassium Phosphate)	66 Grams	
13-0-46 (Potassium nitrate)	69 Grams	
Ferrous Sulphate	25 Grams	
Solute (Micronutrient)	5 Grams	

Pest & disease :
Botrytis, powdery mildew, aphids and whiteflies.

Pinching : Not Necessary

Plant growth regulators (PGRs) :
Not Necessary

Moisture level :
Media moisture levels should alternate between levels 2 and 4.

VINCA MEGA BLOOM CULTURE GUIDE (1)

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MEGA BLOOM®

Scientific name : *Catharanthus roseus*
Use : Packs, Pots, Beds, Containers Borders and Landscaping
Plant Type : Annual
Seed count : 500 seeds/gram
Seed form : Natural

Plug Production :

PLUG STAG

Vinca seeds are black and easy to handle.
To sow, mix seeds with white baby powder so they can be seen on dark sowing media and use 200 or 288-hole plug trays. Sow seeds on top of peat moss media with a pH of 5.5 – 5.8 and an EC of 0.5 – 0.75 mS/cm.

Seeds should be covered with a thin layer of media and/or vermiculite to maintain moisture. Use Propamocarb hydrochloride at the rate of 1 cc /1 liter of water and spray on top of the tray to prevent fungi. The optimal temperature for germination is 24-25 °C (75-77 °F) with a moisture level of 5.

Stage 1

- Radical emergence takes 3-4 days. Light is not required for germination.
- Keep media moisture at level 5 and temperature at 24-25 °C (75-77 °F).
- No need to apply fertilizer at this stage.

Stage 2

- Stem elongation and cotyledons expansion takes 4-7 days.
- Extra light can be used at up to 2,500 f.c. (26,900 lux).
- Keep media moisture at level 3 to 4 medium wet.
- Apply Calcium nitrate fertilizer at 100 ppm N or 0.7 mS/cm EC.

Stage 3

- Development of first true leaves takes approximately 7-12 days.
- Extra light at 2,500 f.c. (26,900 lux) can be applied whilst keeping media moisture levels medium wet level 3 – level 4.
- Allow media to approach level 3 before next irrigation.
- Over saturated media will encourage the development of a weak root system and disease.
- Feed fertilizer 1-2 times per week at 100-150 ppm N/ 0.7-1.2 mS/cm EC.

Stage 4

- 4-5 true leaves takes 12-30 days.
- Keep light at 5,000 f.c. (53,800 lux).
- Growth regulator is not required.
- At this stage, plugs should have a good root system that binds the media.
- Do not hold the plugs too long before transplanting, as this may cause stunted plants.

VINCA MEGA BLOOM CULTURE GUIDE (2)

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Plant Characteristics :

Sowing to transplant	: 25 – 30 days
Transplant to flowering	: 40 – 45 days
Flower Size	: 7– 8 cm.
Plant Height	: 25 – 30 cm.
Plant Width	: 20 – 25 cm.

Pluge Stage	Stage 1	Stage 2	Stage 3	Stage 4
Moisture	Level 5	Level 3-4	Level 3-4	Level 3-4
Temperature	24-25 °C (75-77 °F)			
Light	No Need	Up to 2,500 f.c. (26,900 lux)		5,000 f.c. (53,800 lux)
Fertilizer	No Need	100 ppm N (0.7 mS/cm.)		150 ppm N (1.2 mS/cm.)

Transolanting Stage :

15 to 30 days from sowing, plants can be transplanted into pots or beds. Use a well-drained, sterile media with a pH of 5.5 – 6.0. Media must be free of weed seeds and soil borne disease.

Liquid Fertilizer after Transplanting : Optimal N-P-K ratio 2:1:3

Apply this fertigation once a day for six days. On the 7th day, use only water to flush out accumulated salts.

N: P: K

Liquid Fertilizer	(rate per 100 liter of water)	Application
15-0-0 (Calcium Nitrate)	70 Grams	Once a day for 6 days
0-52-34 (Mono Potassium Phosphate)	33 Grams	
13-0-46 (Potassium nitrate)	35 Grams	
Ferrous Sulphate	10 Grams	
Solute (Micronutrient)	1.25 Grams	

Diseases : Phytophthora, Rhizopus, Pythium, Thielaviopsis, Alternaria, Ulocladium and Tomato Spotted Wilt Virus (TSWV). To prevent these diseases, control moisture and humidity levels and use preventive fungicides.

Insects: Thrips, Red Spider mites, aphids and mealy bugs. Use Pesticides as per label recommendations.

Pinching Tips: Pinching should be done in the morning 14 days after transplant above 2 pairs of true leaves.

Before First Pinching

After First Pinching

VINCA MEGA FLOW CULTURE GUIDE (1)

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MEGA FLOW
Trailing Vinca F1

Scientific name : *Catharanthus roseus*
Use : Packs, Pots, Beds, Hanging Basket and Landscaping
Plant Type : Annual
Seed count : 500 seeds/gram
Seed form : Natural

Plug Production :

PLUG STAG

Vinca seeds are black and easy to handle.
To sow, mix seeds with white baby powder so they can be seen on dark sowing media and use 200 or 288-hole plug trays. Sow seeds on top of peat moss media with a pH of 5.5 – 5.8 and an EC of 0.5 – 0.75 mS/cm.

Seeds should be covered with a thin layer of media and/or vermiculite to maintain moisture. Use Propamocarb hydrochloride at the rate of 1 cc /1 liter of water and spray on top of the tray to prevent fungi. The optimal temperature for germination is 24-25 °C (75-77 °F) with a moisture level of 5.

Stage 1

- Radical emergence takes 3-4 days.
- Light is not required for germination.
- Keep media moisture at level 5 and temperature at 24-25 °C (75-77 °F).
- No need to apply fertilizer at this stage.

Stage 2

- Stem elongation and cotyledons expansion takes 4-7 days.
- Extra light can be used at up to 2,500 f.c. (26,900 lux).
- Keep media moisture at level 3 to 4 medium wet.
- Apply Calcium nitrate fertilizer at 100 ppm N or 0.7 mS/cm EC.

Stage 3

- Development of first true leaves takes approximately 7-12 days.
- Extra light at 2,500 f.c. (26,900 lux) can be applied whilst keeping media moisture levels medium wet level 3 – level 4.
- Allow media to approach level 3 before next irrigation.
- Over saturated media will encourage the development of a weak root system and disease.
- Feed fertilizer 1-2 times per week at 100-150 ppm N/ 0.7 - 1.2 mS/cm EC.

Stage 4

- 4-5 true leaves takes 12-30 days.
- Keep light at 5,000 f.c. (53,800 lux).
- Growth regulator is not required.
- At this stage, plugs should have a good root system that binds the media.
- Do not hold the plugs too long before transplanting, as this may cause stunted plants.

VINCA MEGA FLOW CULTURE GUIDE (2)

AmeriSeed®

Plant Characteristics :

Sowing to transplant	: 25 – 30 days
Transplant to flowering	: 40 – 45 days
Flower Size	: 7– 8 cm.
Plant Height	: 25 – 30 cm.
Plant Width	: 20 – 25 cm.

Pluge Stage	Stage 1	Stage 2	Stage 3	Stage 4
Moisture	Level 5	Level 3-4	Level 3-4	Level 3-4
Temperature	24-25 °C (75-77 °F)			
Light	No Need	Up to 2,500 f.c. (26,900 lux)		5,000 f.c. (53,800 lux)
Fertilizer	No Need	100 ppm N (0.7 mS/cm.)		150 ppm N (1.2 mS/cm.)

Transolanting Stage :

15 to 30 days from sowing, plants can be transplanted into pots or beds. Use a well-drained, sterile media with a pH of 5.5 – 6.0. Media must be free of weed seeds and soil borne disease.

Liquid Fertilizer after Transplanting : Optimal N-P-K ratio 2:1:3

Apply this fertigation once a day for six days. On the 7th day, use only water to flush out accumulated salts.

N: P: K

Liquid Fertilizer	(rate per 100 liter of water)	Application
15-0-0 (Calcium Nitrate)	70 Grams	Once a day for 6 days
0-52-34 (Mono Potassium Phosphate)	33 Grams	
13-0-46 (Potassium nitrate)	35 Grams	
Ferrous Sulphate	10 Grams	
Solute (Micronutrient)	1.25 Grams	

Pinching Tips :

Pinching should be done in the morning 14 days after transplant above 2 pairs of true leaves.

Before First Pinching | After First Pinching

Vinca Mega Flow, a trailing type of Vinca, perform a second pinching after 30 days after the first pinch.

Plant form for second Pinching

Yellow Leaves :

Iron deficiency is a common cause of yellow leaves (interveinal chlorosis). Use ferrous sulfate 2.5 gram mixed with 1 liter of water. Apply 100-150 cc. twice a week to the media around the plant avoiding direct contact with leaves until the leaves turn green again.

Diseases : Phytophthora, Rhizopus, Pythium, Thielaviopsis, Alternaria, Ulocladium and Tomato Spotted Wilt Virus (TSWV). To prevent these diseases, control moisture and humidity levels and use preventive fungicides.

Insects: Thrips, Red Spider mites, aphids and mealy bugs. Use Pesticides as per label recommendations.

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