

## Double Zahara Zinnia

*Zinnia marylandica*

Approximate seed count: 10,000 to 17,000 S./oz.  
(350 to 600 S./g)

### Plug Production

#### Media

Use a well-drained, disease-free media with a pH range of 5.8 to 6.2, and EC less than 0.75mmhos/cm (2:1 extraction).

#### Sowing

**Plug Tray Size:** Can be produced in 288, 200 or similar cell size plug trays. Cover the seed with a medium layer of vermiculite at sowing.

**Stage 1** – Germination takes approximately 2 to 3 days

**Germination temperature:** 68 to 73°F (20 to 22°C)

**Light:** Light is not required for germination.

**Moisture:** Keep the soil wet (level 4) during Stage 1

**Relative humidity:** Maintain 95 to 97% relative humidity (RH) until cotyledons emerge.

#### Stage 2

**Temperature:** 68 to 76°F (20 to 24°C) days; 59 to 64°F (15 to 17°C) nights

**Light:** Can be up to 2,500 f.c. (26,900 Lux) during Stages 2 and 3.

**Media Moisture:** Keep the media medium (level 3) to medium wet (level 4).

**Fertilizer:** Apply fertilizer at rate 1 (less than 100 ppm N/less than 0.7 mS/cm EC) with a nitrate-form fertilizer with low phosphorous.

#### Stage 3

**Temperature:** 68 to 76°F (20 to 24°C) days; 59 to 64°F (15 to 17°C) nights.

**Media Moisture:** Keep the media medium wet (level 3) during Stages 3 and 4.

**Fertilizer:** Increase the fertilizer rate to 2 (100 to 175 ppm N/0.7 to 1.2 mS/cm EC). Maintain a media pH of 5.8 to 6.2 and EC at 0.7 to 1.0 mS/cm (1:2 extraction).

#### Stage 4

**Temperature:** 65 to 70°F (18 to 21°C) days; 59 to 64°F (15 to 17°C) nights

**Light:** Light levels can be up to 5,000 f.c. (53,800 Lux) if optimal temperatures can be maintained.

**Fertilizer:** Same as Stage 3.

#### Plant Growth Regulators

PGRs are generally not required during plug production. If needed, plants can be treated once during the plug stage at about 10 to 14 days after sowing with a foliar spray of B-Nine/Alar (daminozide) at 1,250 to 2,500 ppm (1.5 to 3.0 g/l 85% formulation or 2.0 to 3.9 g/l of 64% formulation).

### Growing On to Finish

#### Container Size

Double Zahara can be produced in 4-in. (10-cm), quarts, Gallon (18-cm) pots or similar size containers.

#### Media

Use a well-drained, disease-free media with a pH of 5.8 to 6.2 and a medium initial nutrient charge.

#### Temperature

**Night:** 59 to 64°F (15 to 17°C)

**Day:** 65 to 70°F (18 to 21°C)

#### Light

Keep light levels as high as possible while maintaining appropriate temperatures. Flowers will be more double with intense color under high light levels.

#### Fertilizer

Starting 1 week after transplant, apply fertilizer at rate 3 (175 to 225 ppm N/1.2 to 1.5 mS/cm) using predominantly nitrate-form fertilizer with low phosphorous. If needed, alternate with a balanced ammonium and nitrate-form fertilizer to encourage growth and balance the media pH. Maintain the media EC at 1.50 to 2.00 mS/cm and pH at 5.8 to 6.2. Avoid fertilizer/nutritional stress during production as this can cause the flowers to be less double.

### **Irrigation**

Maintain optimal media moisture (not too wet or too dry). Avoid overhead irrigation. Irrigation should take place during times when foliage will dry quickly, to prevent any disease incidence.

### **Plant Growth Regulators**

B-Nine/Alar (daminozide) at 3,500 to 5,000 ppm (4.1 to 6.0 g/l of 85% formulation or 5.5 to 7.8 g/l of 64% formulation) applied twice as a foliar spray will help in controlling the plant growth. First application can be done 1 week after transplant, followed by a second application 7 to 10 days later.

**Northwestern Europe:** Zahara will require less PGRs under northwestern European conditions. Can use 2 applications of B-Nine/Alar (daminozide) at 1,600 ppm (1.9 g/l 85% formulation or 2.5 g/l of 64% formulation).

### **Crop Scheduling**

**Sow to transplant:** Approximately 3 weeks

**Transplant to flower:** 8 to 9 weeks in Spring,  
5 to 6 weeks in Summer

**Total crop time (sow to flower):** 11 to 12 weeks in Spring, 8 to 9 weeks in Summer. It may take an additional 1 week to finish in Gallon size containers.

### **Common Problems**

**Insects:** Monitor for Aphids early in production, and Thrips during flowering.

**Disease:** Avoid high humidity and condensation in the greenhouse, as these conditions are favorable for *Botrytis* and Powdery Mildew incidence.

**Note:** Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. Chemical and PGR recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions for the specific chemical being used in accordance with all regulations.

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