GrowerFacts

PanAmerican Seed.

Wave[™] Series Spreading Petunias: Growing On to Finish

Important Notes for Producing Top-Quality Wave Plants

- Wave[®] petunias are long-day plants. See Growing On to Finish – Photoperiod/Light for specific details.
- New Wave Purple Improved has less daylength sensitivity and flowers about one week earlier than Wave Purple Classic.
- Because of their very vigorous growth, Wave petunias require a higher rate of plant growth regulators than standard petunias. See Growing On to Finish – Growth Regulators for specific details.
- Tips for finishing larger liners. See below.

Plug and Larger Liner Production

Refer to the separate **Wave Spreading Petunias Plug and Liner Production** Grower Facts for complete details.

Growing On to Finish from Plugs Container Size

Containers should be 4.5-SVD (11-cm) or larger. 4.5 to 6-in. (11 to 15-cm) pots: 1 plant per pot. 10-in. (25-cm) baskets: 3 plants of Wave Purple, Wave Pink or Wave Misty Lilac, or 4 plants of Wave Blue, Wave Rose or Wave Lavender per basket.

Media

Use a well-drained, disease-free, soilless medium with a pH of 5.5 to 6.3 and a medium initial nutrient charge.

Temperature

Nights: 57 to 65°F (14 to 16°C) **Days:** 61 to 75°F (16 to 18°C)

Wave petunias can tolerate temperatures as low as 35°F (2°C); however, keep in mind that crop timing (time to flower) is related to daily average temperature when grown under proper daylength. Wave plants will take longer to flower when grown in cooler conditions.

Photoperiod/Light

Wave petunia lighting requirements vary by location, variety and production week. Refer to the Supplemental Lighting Chart on the following page.

Start long-day or night-interruption conditions at 5leaf count or earlier. Continue long-days until plants have a minimum of 12 leaves or until proper natural daylength is reached. When producing Wave petunias early in the year when days are short, decrease crop times by continuing to use supplemental lighting. Day extension or night break (providing a 4-hour night interruption from 10:00 p.m. to 2:00 a.m.) are acceptable.

Both HID and incandescent lights are equally effective for flower induction. For initiation, light levels of 10 f.c. (100 Lux) at 10 ft. (3 m) above plant canopy is recommended. However plants grown under incandescent lights will stretch more and need more PGRs to control plant size. Incandescent lights will also affect plant habit by causing shoots to be more upright than under short days, particularly for Wave Rose and Wave Misty Lilac. Plants will resume their normal spreading habit under natural light conditions in the garden. Keep light levels as high as possible while maintaining moderate temperatures. High light levels or PGR applications may cause white "splashes" or star patterns to appear on the blooms of Wave Misty Lilac.

Fertilizer

Wave petunias require more fertilizer than is usually recommended for petunias. For best results, apply a balanced fertilizer with every second or third irrigation of 300 ppm for all genetics. For light feeders, skip first application. To assure consumer satisfaction, an optional top dressing with slow-release fertilizer can be applied 10 days before shipping.

Growth Regulators

The following growth regulator schedule is used for growing on Wave petunias at the PanAmerican Seed Co. Elburn, Illinois (Midwest) research facility. This "recipe" results in 6-in. (15-cm) pots of heavily branched Wave plants with a spread of approximately 10 to 12 in. (25 to 30 cm) when flowering begins – the perfect look for point of sale. For Wave Rose and Wave Misty Lilac, the pots will be covered with blooms. For Wave Blue, Wave Pink, Wave Purple and Wave Lavender, the first flowers will appear closer to the center of the pot.

6-In. (15-Cm) Pots

Apply a B-Nine spray at 2,500 to 5,000 ppm 7 to 10 days after transplanting. Repeat 7 days later. Use a Bonzi drench one time (8-10 ppm for Wave Purple Improved, 5 ppm for Wave Purple Classic, Wave Misty Lilac and Wave Pink;

2 ppm for Wave Lavender, Wave Rose and Wave Blue), 3 to 4 weeks after transplanting or when shoots have reached the edge of the pot. Follow with a Bonzi spray one time at 15 to 30 ppm one week later for additional control.

Somewhat dry conditions during the finishing stage will also keep Wave petunias more compact; allow plants to wilt slightly between waterings. If plants are grown pot-tight, PGR applications must be done more often or at higher rates than plants that are spaced over time. High temperatures or a moist growing regime may also necessitate greater PGR application rates to produce the best product.

Hanging Baskets

Option 1: Apply a B-Nine spray at 3,000 to 5,000 ppm 7 and 10 days after transplanting. Repeat 7 days later. Use a Bonzi spray one time at 30 ppm, 3 to 4 weeks after transplanting. If necessary, a second Bonzi spray can be done.

Option 2: Apply a B-Nine spray at 3,000 to 5,000 ppm 7 to 10 days after transplanting. Repeat 7 days later. Follow with a Bonzi drench at 3 to 5 ppm at week 3. Repeat Bonzi drench if holding plants longer than desired.

B-Nine improves branching, but may delay flowering about 1 week. Bonzi does not appear to affect flower timing. Plants grow out of either plant growth regulator almost immediately after transplant to the landscape. **NOTE:** Be sure to check local regulations regarding the use of plant growth regulators.

NOTE: Topflor can be used in place of Bonzi at 2/3 the rate of Bonzi.

Common Problems

No major problems will occur if using good cultural and IPM practices.

Crop Scheduling

Sow to transplant (392-cell plug): 5 to 6 weeks

Transplant to flower:

Spring: 7 to 10 weeks under long days **Summer:** 4 to 7 weeks under long days with high light and minimum night temp. of 65° F (18°C).

Total Crop Time:

Spring: 12 to 16 week	S	
4.5-SVD (11-cm) pot	1 plant per pot	12-14 weeks
6-in. (15-cm) pot	1 plant per pot	12-14 weeks
10-in. (25-cm) basket	3-4 plants per basket	13-16 weeks
Summer: 9 to 13 week	s 1 plant per pot	9-11 weeks

4-in. (10-cm) pot	1 plant per pot	9-11 weeks
6-in.(15-cm) pot	1 plant per pot	9-11 weeks
10-in. (25-cm) basket	3-4 plants per basket	10-13 weeks

Wave Lavender, Wave Blue, Wave Misty Lilac, Wave Rose and Wave Purple Improved flower up to one week earlier than Wave Purple Classic and Wave Pink.

Growing On to Finish from Large Liners

Photoperiod

Natural day during Spring when daylength is longer than 11 hours.

Growth Regulators

One or more (if grown pot to pot) Bonzi 30 to 60 ppm spray based on temperature, weather conditions and cultural practice. All other environmental conditions follow the normal production.

Crop Scheduling

Sowing to transplant: 6 to 7 weeks for direct sowing; 7 to 9 weeks for transplant from small plug. **Transplant to flower:** 5 to 6 weeks from 50-cell liner (add 1 more week for Wave Purple Classic and Wave Pink Improved); 5 to 7 weeks from 72-cell liner (add 1 more week for Wave Purple Classic and Wave Pink).

Hanging Basket Tips

At the end of production, maintain fertilization and utilize PGRs. Do not eliminate fertilization to control growth just prior to shipping. Apply fertilizer at half rate and, to hold plant habit, utilize PGRs. Provide good air circulation at the <u>plant level</u>. This reduces potential for disease and die-off.

Do not allow plants to wilt. Maintain moderate moisture levels. This will provide better plant performance and color in the center of the basket.

Handy Tips For Retailers

Be sure to ask your grower for Wave petunias in the easy-to-find Wave[™] Pink Pots!

Keep Wave plants fresh and healthy at point-of-sale:

- Display Wave petunias in filtered sunlight in direct sun, the plants dry out quickly and require more frequent watering.
- Keep Wave petunias watered. The soil should never dry out completely.
- In the display, space Wave petunias with the leaves just touching between the plants.
- Feed the plants with a liquid fertilizer once a week at the ratio recommended on the label.
- Remind home gardeners that Wave petunias grow rapidly. These annuals can quickly fill in a square yard of garden space in just a few weeks.

Homer Gardener Information

Spread the word to consumers about: <u>Wave-</u> <u>Rave.com</u> – it's loaded with helpful gardening tips, care instructions and an easy-to-use "Where Can I Get It?" section. Find detailed, ready-to-copy information for gardeners in the **Wave** P.O.P. Kit – order yours by calling **800 231-4868** today.

630 231-1400 panamseed.com

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Supplemental Lighting Chart

These tables will help you to decide when you need to light the different Wave Petunia family varieties and choose the right variety for you. For example, if you want to produce Wave petunia during week 6 to week 20 in Kalamazoo, MI (N42.5°), you need to light group 2 varieties for 3 weeks, group 3 varieties for 6 weeks, but you don't need to use supplemental light for group 1 varieties.

Daylength Requirements for Flowering Wave[™] Petunia Varieties

	Min. Daylength	
Group	Requirement*	Variety
		Easy Wave [™] Blue, Burgundy Star, Coral Reef, Mystic Pink Improved, Neon Rose, Pink Dawn,
1	10.5 hours	Red Improved, Rosy Dawn, Shell Pink, Violet and White; all Shock Wave [™] colors
2	11 hours	Easy Wave [™] Pink, Plum Vein and Salmon; Wave [™] Blue
		Wave [™] Lavender, Misty Lilac, Pink, Purple Classic, Purple Improved** and Rose; all Tidal Wave [™]
3	12 hours	colors

*Speed of flowering increases at longer daylengths.

**Wave Purple Improved requires 11.5 hours daylength or one week less of supplemental lighting compared to Purple Classic.

Production Weeks When Lighting is Required for Different Wave Petunias Based on Latitude

(N: Natural Daylength, L: Supplemental Lighting-- daylength extension to 14 hours or night interruption from 10PM to 2AM by using HID or incandescent lights)

Latitude N25°, For cities such as: Miami, FL

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30 3	31 3	32 3	33 3	34 3	35 30	5 37	38	39 4	04	1 4	2 43	44	45	46 4	47 4	8 4	9 50	0 51	52
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Group 3	L	L	L	L	L	L	L	L	L	L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N	NI	NI	NI	N	NN	N	Ν	N	L	_ L	. L	L	L	L	LI	LL	. L	. L	L

Latitude N30°, For cities such as: Jacksonville, FL; New Orleans, LA; San Antonio and Houston, TX

Week	1	2	3	4	5	6	7	8	9	10	1	1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 3	2 3	3 34	4 35	5 3	6 37	38	39 4	404	1 42	2 43	44	45	46	47	48 4	19 5	50 5	1 52
Group 1	L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	1	N	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	NN	1 N	I N	I N	IN	I N	Ν	N	NN	N N	I N	Ν	Ν	Ν	N	L	L	LL	. L
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Group 3	L	L	L	L	L	L	L	L	L	L	L		L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	NN	I N	I N	I N		I N	Ν	N	LL	. L	. L	L	L	L	L	L	L	LL	. L

Latitude N35°, For cities such as: Atlanta, GA; Charlotte, NC; Little Rock, AR; Los Angeles; CA, Oklahoma City, OK

Week	1	2	3	4	5	6	7	8	9	1	0	11	12	13	14	15	1	6	17	18	19	20	21	22	23	24	25	26	27	28	3 29	30	31	32	33	34	35	36 3	37 3	38 3	9 40) 4 [,]	1 42	43	44	45	46	47	48 4	9 5	0 5	51 5	2
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Latitude N40°, For cities such as: Baltimore, MD; Cincinnati, OH; Columbus, OH; Denver, CO; Indianapolis, IN; Philadelphia, PA; Salt Lake City, UT

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Group 3	L	. L	L	L	L	. L	L	L	. L		L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν		1	N	Ν	Ν	Ν	Ν	Ν	Ν	N	NI		I N	N	Ν	Ν	Ν	Ν	N	LI	LL	. L	L	L	L	L	LI	. L	. L	L

Latitude N42.5°, For cities such as: Boston, MA; Buffalo, NY; Chicago, IL; Cleveland, OH; Kalamazoo, MI; Grand Rapids, MI; Toledo, OH

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 32	2 33	34	35	36 3	7 3	8 39	40	41	42	43	44 4	45 4	6 47	7 48	49	50 5	51 52
Group 1	L	L	L	L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N N	N	Ν	Ν	N	N N	N N	Ν	Ν	Ν	Ν	N	LI	LL	L	L	LI	LL
Group 2	L	L	L	L	L	L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N N	N	Ν	Ν	N	N N	I N	Ν	Ν	Ν	L	L	LL	LL	L	L	LI	LL
Group 3	L	L	L	L	L	L	L	L	L	L	L	L	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N N	N	Ν	Ν	N	NN	N N	L	L	L	L	L	LI	LL	L	L	LI	LL

Latitude N45°, For cities such as: Minneapolis, MN; Montreal, ON; Ottawa, ON; Portland, OR; Traverse City, MI; Toronto, ON

Week	1	2	3	4	5	6	7 8	B	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	29 30	31	32	33 3	4 3	5 36	37	38	39 4	0 4'	1 42	43	44	45	46 4	7 48	49	50 5	51 5	2
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Latitude N50°, For cities such as: Seattle, WA; Vancouver, BC; Winnipeg, MB

Week	1	2	3	4	5	6	7	8	9	10	11	1:	2 1	13	14	15	16	17	18	19	20) 2	21	22	23	24	25	26	27	28	3 29	30	31	32 3	33 3	4 3	5 3	6 37	38	39	40 4	41 4	12 4	3 44	45	46	47	48 4	9 50	51	52
Group 1	L	L	L	L	L	L	L	L	Ν	Ν	Ν	Ν	1	N	Ν	Ν	Ν	Ν	Ν	Ν	Ν	1	N	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	Ν	N	N I	NI	NN	N N	Ν	Ν	Ν	NI	N	- L	L	L	L	LL	. L	L	L
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