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Peperomia 'Keaau Lime': A Variegated Hawaiian Peperomia for Shade and Indoor Use

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Peperomia leptostachya Hook. & Arn. (syn. *Peperomia blanda* var. *floribunda*) is a perennial herb with green or reddish green stems and green leaves, covered with soft hairs. It is found in almost all the main Hawaiian Islands except Kahoolawe, growing terrestrially on rocks, ledges, and cliffs, and on aa lava at elevations between 10 and 1675 m above sea level (Wagner et al. 1999). Outside of Hawaii, it occurs from Africa through Asia to northern Australia, Melanesia, and Polynesia (Plants of the World Online 2025).

In Hawaii, *P. leptostachya* is grown as an ornamental plant in landscaped cinder beds (Plant Pono 2025) and in containers or hanging baskets, and is used as an understory groundcover (Elliot et al. 2009). Recently, the indoor plant potential of *P. leptostachya* was evaluated by Baldos and Corpuz (2019). Results of the study indicate that *P. leptostachya* needs brightly lit indoor conditions [daily light integral (DLI) = 2.35 mol·m^{-2}·d^{-1}] to be used as a houseplant. Although the wild-type form of *P. leptostachya* provides greenery in both indoor environments and shaded landscapes, a variegated selection can offer a different color option. This germplasm release article describes 'Keaau Lime', a unique, variegated Oahu Island selection of *P. leptostachya* with yellow to yellow–green stems and foliage.

Origin

Peperomia leptostachya 'Keaau Lime' originated from a bud sport found in 2019 on a plant from the native peperomia germplasm collections at the Magoon Research Facility (Honolulu, HI, USA). The wild-type plant was originally collected from West Oahu in 2017 by Timothy Kroessig. The variegated selection was increased from tip as well as leaf bud cuttings from 2020–24. Six-month indoor light trials conducted in Jul 2024 and Feb 2025 confirm *P. leptostachya* 'Keaau Lime' as a promising potted foliage selection for partially shaded landscapes and brightly lit indoor areas.

Description

Peperomia leptostachya 'Keaau Lime' has fleshy leaves that are 1.6 to 3.8 cm wide and 2.0 to 5.3 cm long, arranged in sets of two or three in each node (Fig. 1). Average leaf thickness is 2.82 mm. Leaf shapes can range from elliptical to suborbicular. Young leaves and stems are hairy, yellow [Royal Horticultural Society (RHS) 6C] to yellow–green (RHS 154B) on the upper leaf surface, and green–yellow (RHS 1D) to yellow–green (RHS 154D) on the leaf underside (Royal Horticultural Society 2007). Veins of young leaves may appear yellow–green (RHS 144A). Older leaves and stems are hairy, yellow–green (RHS 147C) to green (RHS N137D) on the upper leaf surface, and yellow–green (RHS 145A) on the leaf underside. Some leaves may occasionally form nonvariegated streaks or splotches that are green (RHS N189). Plants can grow up to 25 cm high (Wagner et al. 1999), with an average internode length of 1.3 cm. Numerous floral spikes up to 17 cm long may develop on the terminal or axillary shoots. These can be pruned off to improve visual appearance. Although new shoots may eventually appear at the base of the plant, pinching at 1 and 2 months after propagation is recommended to encourage branching.

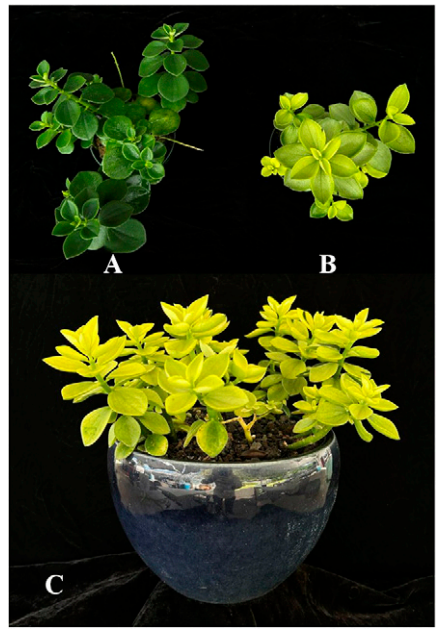

Fig. 1. *Peperomia leptostachya* wild-type plant (**A**) and 'Keaau Lime' (**B**) grown in 10.2 cm-diameter plastic pots 6 months after propagation from stem cuttings. (**C**) 'Keaau Lime' plants grown under shade house conditions in a 27 cm-diameter ceramic pot (three plants per pot).

Performance

Growth and visual quality of *P. leptostachya* 'Keaau Lime' were evaluated in 2024 and 2025 under three T8 replacement light-emitting diode (LED) (Hyperikon, Indianapolis, IN, USA) indoor light conditions (DLI = 2.9 mol·m^{-2}·d^{-1}, 0.4 mol·m^{-2}·d^{-1}, and 0.2 mol·m^{-2}·d^{-1}, with a 12 h photoperiod). Plants were propagated without rooting hormone from 5 to 6 cm-long apical stem cuttings rooted in subirrigated calcined clay (Turface MVP; PROFILE Products LLC, Buffalo Grove, IL, USA). Rooted cuttings were potted in 10.2 cm-diameter plastic pots filled with a 1:1 by-volume mix of 1.5 cm-diameter volcanic cinder (Island Topsoil LLC, Waianae, HI, USA) and potting mix (Sunshine #4; Sun Gro Horticulture, Agawam, MA, USA). The growing media was incorporated with 78 g of slow-release fertilizer (13N–4.8P–9.1K, Nutricote Type 180; Arysta LifeScience America, New York, NY, USA) per 11 L. Plants were grown under covered shade house conditions (~50% shade) for 148 d (2024 trial) and 189 d (2025 trial) before indoor evaluation. Plants were categorized by size and placed under three T8 replacement LED (Hyperikon) indoor (temperature, 19.8 °C; relative humidity, 65.9%) lighting conditions [DLI = 2.9 mol·m^{-2}·d^{-1} (high light, control), 0.4 mol·m^{-2}·d^{-1} (office light), and 0.2 mol·m^{-2}·d^{-1} (low light), with a 12 h photoperiod]. The experiment was laid out as a randomized complete block design with eight replicates (plants) for the 2024 trial and six replicates for the 2025 trial. Hand-watering was conducted once a week, placing 30 mL of tap water in each pot. Visual quality ratings [1 point = poor; 2 points = fair (not saleable); 3 points = acceptable (saleable); 4 points = good quality; and 5 points = excellent quality] adapted from Henny and Chen (2011) were recorded at 0, 3, and 6 months of growth under the three light conditions. Ratings were analyzed using analysis of variance (ANOVA) procedures in Statistix v. 10 (Analytical Software, Tallahassee, FL, USA). Assumptions of the ANOVA were checked and met. Tukey's honestly significant difference test at the $P < 0.05$ level was used to separate significant treatment means.

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Table 1. Visual quality of *Peperomia leptostachya* 'Keaau Lime' in 2024 and 2025 after 0, 3, and 6 months of growth under three light levels and interior conditions (temperature, 19.8 °C; relative humidity, 65.9%).

Daily light integral ($mol \cdot m^{-2} \cdot d^{-1}$)	Visual quality by year and month[i]					
	2024			2025		
	Month 0	Month 3	Month 6	Month 0	Month 3	Month 6
0.2 (low light)	4.5	2.5 b[ii]	1.6	4.5	3.8 ab	3.3 b
0.4 (office light)	4.9	3.8 a	3.1	4.7	4.3 a	4.3 a
2.9 (high light, control)	4.6	4.4 a	2.6	4.7	3.2 b	3.7 ab
P value	0.5268NS	0.0004	0.0581NS	0.7514NS	0.0417	0.0298

[i] Visual quality where 1 point = poor, 2 points = fair, 3 points = saleable, 4 points = good, and 5 points = excellent quality.

[ii] Different letters following the means indicate significant differences within the column based on Tukey's HSD test at $P < 0.05$.

NS = Not significant.

Visual quality between treatments at 3 months varied with the trial run (Table 1). In the first trial, plants under office light and high light (control) conditions maintained good quality (average = 4.1 points), whereas plants grown in low light exhibited a fair (not saleable) visual rating (2.5 points). In the second run, plants in all light treatments maintained acceptable to good quality (3.2–4.3 points).

Visual quality between treatments at 6 months varied with the trial run (Table 1). In the first trial, no significant differences in visual ratings among light treatments were detected. All plants exhibited a fair (not saleable) visual rating (average = 2.4 points) as a result of plant death and leaf drop in plants grown under low light conditions, leggy growth of some plants under office light conditions, and profuse flowering of approximately half the plants under the high light (control) treatment. In the second trial, all plants exhibited acceptable visual ratings (>3 points), with plants under office light conditions exhibiting the highest rating (4.3 points). Acceptable visual quality was maintained as a result of minimal leaf drop occurring in plants grown under low and office light. Also, plants grown under the high light (control) treatment did not flower. In both trials, plants grown under the high light (control) treatment maintained their lime green–yellow color. Plants grown under office and low light conditions maintained the lime green–yellow color only on the youngest, unexpanded leaves as well as the oldest leaves.

'Keaau Lime' can be propagated easily from stem or leaf bud cuttings without rooting hormone. To maintain acceptable color and appearance, plants must be grown indoors under bright indirect light or outdoors under partial shade (e.g., lanai or patio). Plants should be pruned occasionally to increase branching and remove inflorescences. Although wild-type plants can tolerate full sun conditions, 'Keaau Lime' does not. Plants moved to full sun conditions will defoliate slowly and die.

Availability

Peperomia leptostachya 'Keaau Lime' is made available to interested nurseries in Hawaii. Contact Orville Baldos (e-mail: obaldos@hawaii.edu) for inquiries.

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