

Table 1. Seed yield of CU-R89 compared to 'Ruddy' at Freeville and Stanley, N.Y. in 1988.

Site	Mean seed yield (g/plot)		<i>t</i> statistic
	CU-R89	Ruddy	
Freeville	848.8	1180.3	2.8 ^{ns}
Stanley	878.5	973.5	0.58 ^{ns}
Means	858.7	1111.3	2.5 ^{ns}

^{ns}Not significant at $P \leq 0.05$.

red. Seeds are kidney-shaped, with a 100-seed weight of 47 to 55 g. Like 'Ruddy', CU-R89 has excellent color retention over time and cooks quickly. CU-R89 was screened in BC-4F₁ for the I gene, which confers resistance to bean common mosaic virus (pathotype 'NY 15') (Provvidenti, 1987). It is

susceptible to halo blight [*Pseudomonas phaseolicola* (Burk.) Dews] and common blight [*Xanthomonas phaseoli* (E.F. Smith) Dews] and at least one strain of anthracnose [*Colletotrichum lindemuthianum* (Sacc. & Magn.) Scrib.].

CU-R89 and 'Ruddy' were compared in state trials at Freeville and Stanley, N.Y. Yields of 'Ruddy' were not significantly different from CU-R89 at either site or over sites (Table 1). Because CU-R89 is nearly isogenic with 'Ruddy', it is suitable for evaluation as a BYMV-resistant replacement for 'Ruddy'.

Availability

Small quantities of CU-R89 seed are available from D.H.W.

Literature Cited

- Dickson, M.H. and J.J. Natti. 1968. Inheritance of resistance of *Phaseolus vulgaris* to bean yellow mosaic virus. *Phytopathology* 58:1450.
- Hagedorn, D.J. and J.C. Walker. 1950. The relationship of bean virus 2 to pea mosaic in Wisconsin. *Phytopathology* 40:684-698.
- Provvidenti, R. 1983. Two useful selections of the bean cultivar 'Black Turtle Soup' for virus identification. *Annu. Rpt. Bean Imp. Coop.* 26:73-75.
- Provvidenti, R. 1987. List of genes in *Phaseolus vulgaris* for resistance to viruses. *Annu. Rpt. Bean Imp. Coop.* 30:1-4.
- Provvidenti, R., B. Scully, D.E. Halseth, and D.H. Wallace. 1989. B-21: A dry black bean breeding line with multiple virus resistance. *HortScience* 24:1049.
- Sandsted, R.F. 1982. 'Ruddy': A new light red kidney variety. *Dept. Veg. Crops Mimeo. Ser. VC-271*. Cornell Univ., Ithaca, N.Y.

HORTSCIENCE 25(2):236-237. 1990.

'Greenthumb Peppermint' Azalea

T.E. Bilderback¹, D.J. Cagle², and P.R. Fantz³
North Carolina State University, Raleigh, NC 27695

Additional index words. azalea breeding, *Rhododendron*, ornamental breeding

Rhododendron L. 'Greenthumb Peppermint' is a mid- to late-blooming evergreen azalea with showy 7- to 8.3-cm, semidouble, hose-in-hose flowers (Fig. 1). Flowers commonly are pinkish in hue with white margins and a soft purplish-pink inner pattern that is variable in its expression. The unusual condition of plants typically bearing one or two sports with either strong purplish-pink or white flowers (Fig. 2), the floriferous flowers, and the degree of cold hardiness (zones 7 to 8) were the objectives leading to selection of 'Greenthumb Peppermint'.

Origin

'Greenthumb Peppermint' is a sport selected by D.J.C. in 1980 from an unidentified azalea growing in the yard of B.J. Maness of Asheboro, N.C. Propagules from the

original tissue and the sport were grown and evaluated for the past 8 years by Greenthumb Nursery, Seagrove, N.C.

The original parent plant is dead. Clones from the parent plant tissue (Fig. 3) bear 5- to 6.4-cm double, hose-in-hose flowers that are strong purplish-pink, Munsell 5 RP 5/10 (Wilde and Voigt, 1977), correlating most closely with Royal Horticulture Society (RHS) colour chart number 55B (Huse and Kelly, 1984).

Description

'Greenthumb Peppermint' is an erect shrub with branches ascending and spreading. Stems are sympodial, growing 4 to 10 cm per year. Juvenile twigs are ≈ 2 -2.5 mm in diameter

and densely strigose, with deltoid-linear trichomes that are white, ascending-adpressed, 1-2 mm long, and becoming darkened on the second year's growth. Leaves are crowded toward the apex, scattered strigose on both surfaces, ciliate, and strigose below on the midrib and less so on major veins, with trichomes ≈ 0.7 -2 mm long. Summer leaves are thin coriaceous, dark green above, pale below, somewhat glossy, broadly elliptic to ovate-elliptic to oblong-elliptic, broadly obtuse, mucronate, cuneate to subrotund, and 2-5 \times 4-9 cm. Winter leaves are thick-membranous, elliptic, broadly acute, mucronate, cuneate, and 1.5-3 \times 3-6 cm. Petioles are 6-12 mm long. Inflorescences are axillary and sessile, bearing two flowers. Bracts are spreading, broad ovate to suborbicular, convex with medially rounded, strigose keel, and 8-11 \times 9-13 mm. Pedicels are pilose-strigose and 0.8-1.5 cm long. Flowers (see front cover of this issue of *HortScience*) are semidouble, hose-in-hose, 7-9.5 cm in diameter, pale pink in hue with white margins and pale purplish-pink centers, variegated in pattern, and occasionally white or dark maroon pink on sports. The



Fig. 1. Semidouble, hose-in-hose flowers of 'Greenthumb Peppermint'.

Received for publication 17 Aug. 1988. Paper no. 11747 of the Journal Series of the North Carolina Agricultural Research Service, Raleigh, NC 27695-7643. The use of nursery and trade names in this publication does not imply endorsement by the North Carolina Agricultural Research Service of the nursery or the products mentioned, nor criticism of similar ones not mentioned. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement solely* to indicate this fact.

¹Associate Professor, Dept. of Horticultural Science, Box 7609, North Carolina State Univ., Raleigh, NC 27695.

²Owner, Greenthumb Nursery, Rte. 2, Box 110, Seagrove, NC 27341.

³Associate Professor, Dept. of Horticultural Science.



Fig. 2. Flowers of 'Greenthumb Peppermint' with the three color variations.



Fig. 3. Clone from parent plant with double, hose-in-hose, dark pink flowers.

calyx is petaloid, similar to the corolla. The corolla is campanulate, pink with white margins and blotched red. The corolla tube is 1.3-1.8 cm long and 0.5-0.6 cm broad basally, flaring to 1.6-2 cm wide at the throat, with lobes $2-2.6 \times 2.7-3$ cm. The five to eight stamens have pink filaments 1.7-3.3 cm long and 2.3-mm-long versatile anthers with apical pores, sometimes bearing petaloid appendages to 1.4 mm in width. The ovary is 3-3.5 mm long and dense strigose with 3- to 4-mm-long trichomes. The pink style is weakly falcate apically, 1.6-1.9 cm long, and five-parted apically, with reddish-tinged stalks $\approx 1-1.5$ mm long and a viscid

turbinate stigma $\approx 0.7-0.9$ mm long and 0.5-0.6 mm wide. Holotype: *Fantz 4390*.

Observations. The flowers are a light purplish-pink, Munsell 5- RP 7/8 (Wilde and Voigt, 1977), correlating most closely with RHS 63D (Huse and Kelly, 1984). The flowers are variable in color patterns, white at the margins with light purplish-pink inner centers following the vein patterns. The white areas are variable in size, from 2 to 7 mm broad. The strong red blotches on the upper petals are conspicuous, Munsell 2.5 R 4/10 (Wilde and Voigt, 1977), correlating most closely with RHS 53C (Huse and Kelly, 1984). The flowers appear similar to 'Janet

Rhea', a Linwood Hardy azalea illustrated with a photograph on p. 8 of Darden (1985) and plate 71 of Galle (1985).

'Greenthumb Peppermint' can be distinguished from descriptions of 'Janet Rhea' (Darden, 1985; Galle, 1985) by its larger, paler pink flowers, lacking the deeper violet hues, and more conspicuous red blotches. Also, 'Greenthumb Peppermint' often produces sports. A common sport bears single to semidouble, hose-in-hose, strong purplish-pink flowers, Munsell 5 RP 6/10 (Wilde and Voigt, 1977), correlating most closely with RHS 55B (Huse and Kelly, 1984). These flowers lack any variegated pattern and account for $\approx 5\%$ of the blooms on the plant. Sports occur on $\approx 80\%$ of the plants. An infrequent sport bears semidouble, hose-in-hose, white flowers. Therefore, plants of 'Greenthumb Peppermint' can bear one to three flower colors on the same plant, an unusual condition (Fig. 2).

Culture

'Greenthumb Peppermint' is hardy in USDA hardiness zones 7 to 8. Plants exhibited resistance to stem splitting and winter-leaf kill. Mature plants are 1 m tall and slightly wider than their height. Plants grow best in partial sun to shaded sites. Propagation is by vegetative softwood cuttings, of which 85% root.

Registration

'Greenthumb Peppermint' is being registered with the International Registrar for the genus *Rhododendron* at the Royal Horticultural Society's Garden, Wisley, Surrey, United Kingdom. Herbarium specimens are being deposited at the U.S. National Arboretum Herbarium, Washington, D.C.

Availability

Stock plants have been propagated by Greenthumb Nursery. Information on sources of propagules can be obtained from D.J.C.

Literature Cited

- Darden, J. 1985. Great American azaleas. Greenhouse Press, Clinton, N.C.
- Galle, F.C. 1985. Azaleas. Timber Press, Portland, Ore.
- Huse, R.D. and K.L. Kelly. 1984. A contribution toward standardization of color names in horticulture. The Amer. Rhododendron Sot. Puhl. Comm. Tigard, Ore.
- Wilde, S.A. and G.K. Voigt. 1977. Munsell color charts for plant tissues. 2nd ed. Munsell Color, Kollmorgen Corp., Baltimore, Md.