NORTH CAROLINA AGRICULTURAL RESEARCH SERVICE

NORTH CAROLINA STATE UNIVERSITY

RALEIGH, NORTH CAROLINA

NOTICE OF RELEASE OF BUDDLEJA NC2010-1 (proposed name, 'MISS VIOLET')

Buddleja NC2010-1 was derived from a summer 2009 hybridization of 'Blue Chip' (NCSU cultivar tested as NC2004-9, USPP 19,991) x Miss Molly (NCSU cultivar tested as NC2005-8, USPP 23,425). Many species and cultivars of *Buddleja* are regarded as invasive and banned from commerce in some regions. To address concerns of excessive vigor and invasive potential, 'Miss Violet', a semi-compact and reduced fertility cultivar is being released.

The pedigree of NC2010-1 is shown in Figure 1. All hybridizations shown in the pedigree were performed in the author's breeding program, except for the development of 'White Ball'. Seeds were germinated in January 2010, and about 100 progeny were grown out in summer 2010 at the Sandhills Research Station, Jackson Springs, NC. One seedling, designated NC2010-1, demonstrated reduced stature, dense foliage and branching, semi-upright growth habit, and dark violet flower color. An advanced trial was established on April 13, 2013 in a fumigated trial site at the Sandhills Research Station. Unpruned plants of 'Miss Violet' attained a height and spread of 111.5 and 136.5 cm, respectively (height/width ratio = 0.81), in the second year of growth (measured July 10, 2014, fifteen months after establishment). A standard check cultivar, 'Potter's Purple', attained a height and width of 184.3 and 240.3 cm, respectively.

An open-pollination study was conducted to assess the female fertility of *Buddleja* NC2010-1. Data were taken from the aforementioned advanced selection test planting. Check cultivars were included as standards for comparison, and also to ensure an abundance of available pollen for cross pollination with other selections in the trial planting. Ten plants of each cultivar or selection were represented in the trial. The entire planting encompassed 1 acre. In late fall, seed capsules from each cultivar/selection were stripped from the main rachis of each panicle, dried at room temperature, and crushed gently to ensure all seeds were released from the seed capsules.

Female fertility of each cultivar/selection was assessed by sowing a 0.1 gram subsample of the crushed contents from each cultivar or selection in a greenhouse. The number of seeds that germinated was determined 26 days after sowing. For 'Miss Violet', based on averages of five single

plant replications, 8.2 seeds germinated per 0.1 gram of crushed seed pods. This was similar to 'Blue Chip' but significantly less than other cultivars (range from 26.4 to 99.6). When the number of seeds germinated was extrapolated to two entire panicles, 85.4 seeds were predicted to germinate for 'Miss Violet', compared to 14.2 for 'Blue Chip'. Other cultivars ranged from 551.8 to 1901.0 seeds germinated per two panicles.

Three years of field observation, and the subsequent open pollination field trial clearly demonstrates the reduced level of female fertility of NC2010-1. Additionally, NC2010-1 is totally male sterile, as all flowers exhibit distorted anthers that produce no viable pollen. Based on this high degree of female sterility, NC2010-1 will be submitted to the Oregon Department of Agriculture (ODA) for consideration for production, marketing, and landscape use in the state of Oregon. Oregon currently bans all uses of butterfly bush because of its demonstrated invasiveness in the state.

The attractive dark violet flower color (RHS 83A), semi-compact growth habit, dense foliage, and reduced male and female fertility are the primary reasons for release. 'Miss Violet' is judged as semi-compact compared to standard cultivars. The dense, semi-compact growth habit of 'Miss Violet' is similar to that shown by the two previous releases from the breeding program, 'Miss Ruby' (pink) and 'Miss Molly' (red). Hence, 'Miss Violet' will expand the color range in this popular series. The inflorescences are typical of *Buddleja;* individual flowers are very fragrant. Foliage of NC2010-1 is deciduous.

Plants of 'Miss Violet' have been grown in North Carolina (Jackson Springs, USDA hardiness zone 7b), and Michigan (Grand Haven, USDA hardiness zone 5b). All have demonstrated reliable cold hardiness for three winters in the Michigan trial and three winters in the North Carolina test site. In the Michigan trial, plants died back to the ground (typical of butterfly bush in USDA hardiness zone 5b), and resumed growth from the crown the following spring. In North Carolina, above ground shoots survived over winter, hence plants may require occasional moderate pruning to maintain the desired compact growth. Cultural requirements of 'Miss Violet' are similar to other cultivars of *Buddleja*, most critically full sun exposure and well-drained soil. The reduced stature, semi-upright growth, prolific flowering, and reduced female fertility of NC2010-1 are highly desirable traits that will allow this selection to be used in a wide range of landscape situations.

Propagation of 'Miss Violet' can be achieved successfully by using softwood cuttings taken any time in the growing season, treating with low to moderate rates of indole-3-butyric acid (IBA), and placing under intermittent mist. Rooting usually occurs within 2 weeks.

A U.S. plant patent application will be submitted for 'Miss Violet'. Plant patent rights will be assigned to NCSU. Spring Meadow Nursery, the exclusive licensee for the NCSU *Buddleja* introductions, included this cultivar in their 2015 catalog.

Steven Lommel

Director, North Carolina Agricultural Research Service

8/31/15

Date

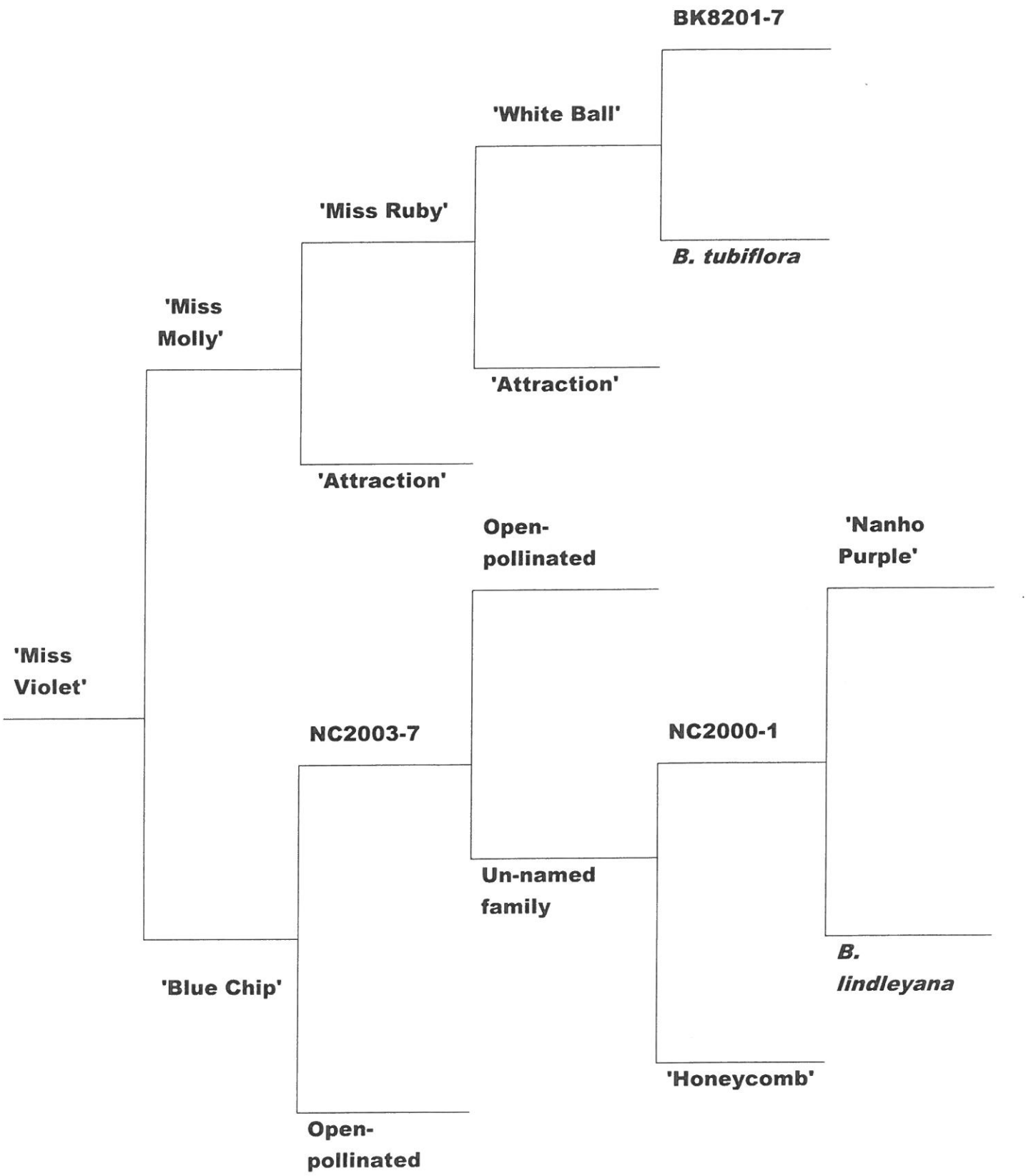

Figure 1. Pedigree of *Buddleja* 'Miss Violet' (NC2010-1).