# Propagating and Growing Camellias

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## INTRODUCTION

Not only is the camellia the most beautiful and desirable of all shrubs, it is also one of the most versatile This evergreen shrub responds well to pruning, or can develop into a small tree

## DESIRABLE FLORAL CHARACTERISTICS OF CAMELLIAS

The spring-blooming *Camellia japonica* has a great range of flower sizes from miniature blooms of 5.1 cm (2 inch) to very large 15-cm (6 inch) flowers The range of bloom types is hard to match *Camellia japonica* can have blooms of semidouble, anemone, peony, formal double, or rose forms — sometimes more than one bloom type occurs on a single shrub! Bloom form is surpassed only by the variety of colors. *Camellia japonica* comes in every imaginable shade of white, pink, and red, some having all three colors on a single bloom! Recent color advancements have been the development of creamy shades of yellow and the introduction of sweetly scented blooms

*Camellia sasanqua* fills in the color void that most gardens suffer in the fall and it more than makes up for its lack of size in its abundance of blooms that can literally cover the bush The sasanqua blooms can have single, semidouble, anemone, and peony forms, as well as new advancements in formal double forms and larger sized flowers Colors are just as rich and varied as *C. japonica*. Your garden could have color from September through December and on into the new year with a careful selection of *C sasanqua*.

Chosen carefully, a selection of cultivars can provide continuous blooms throughout the entire blooming season from early fall to late spring

## COLD HARDY CULTIVARS

The current excitement with camellias is caused by the successful introduction of cold-hardy cultivars *Camellia oleifera* 'Lu Shan Snow,' has been crossed with *C. sasanqua* and *C japonica* to produce a new division of camellias Most of the new *C. oleifera* hybrids are hardy to -24 C (-10 F), and some tolerate -26 C (-15 F) without injury. These cold-hardy cultivars have good bud set with moderate growth ranging from upright to spreading to semidwarf. Their blooms range through singles and semidoubles to anemones and peony forms with colors arrays from deep pink to white Zone 6 gardeners can now enjoy what was once considered a zone 8 and 9 plant.

Fall-blooming cold-hardy cultivars appropriate for Zone 6 include 24 cultivars with approximately 75% suited for commercial application They bloom from September to January, in anemone, semidouble, rose form and formal double forms. Colors vary from deep pink to white Plant form is upright, spreading, or semidwarf

Spring-blooming cold-hardy cultivars appropriate for zone 6, include approximately 18 cultivars, again with 75% being commercially viable. They bloom from January to April, in anemone, semidouble, rose form, and formal double forms.

Colors vary from red to variegated, to a broad range of pinks and whites. Plant form is upright, spreading or semi-dwarf.

## PROPAGATION

**Seasonal Timing and Condition of the Cutting Wood**. Generally *C. japonica* and *C. sasanqua* and their hybrids are propagated similarly, except where we have experienced differences. Propagation in Greensboro, North Carolina begins about July 1st when the new growth starts turning golden brown or becomes semihardwood. Propagation continues into September.

**Propagation Temperatures.** Our propagation houses are maintained with 40% shade. The fans for each greenhouse are set to operate at 29C (85F) and the louvers turn on at 21C (70F). The minimum temperature maintained is 7C (45F).

**Propagation Media.** The propagation medium consists of fine pine bark, peat, and perlite (14 : 3 : 3, by volume). The medium is amended with 4.2 kg $m^{-3}$ (7 lb $yd^{-3}$) dolomitic limestone and 3.6 kg $m^{-3}$ (7 lb $yd^{-3}$) of the slow-release fertilizer, Osmocote 18N-6P-12K.

**Fungal Control.** We spray our propagation houses with fungicides once a month from July through November and then again February through May with a mixture of Cleary 3336 and Captan 50WP.

**Rooting Hormone.** The rooting hormone we use for the *C. japonica* is 8000 IBA and 2500 NAA. We use a slightly lower concentration for *C. sasanqua*: 6000 IBA and 2500 NAA. This year we started using Dip 'n Grow. We apply four parts Dip 'n Grow to two parts water for *C. japonica,* and three parts Dip 'n Grow to two parts water for *C. japonica*.

**Cutting Preparation.** Normally we take stem cuttings with two or three leaves, but if propagules are in short supply we take single leaf (single-node) cuttings. A sharp utility razor knife is used to make the cuttings, changing blades as soon as they become dull. The base of the cutting is sliced at a 45° angle approximately 19 mm (0.75 inches) from the lower leaf. Cuttings are then placed in a fungicidal bath of Cleary 3336 [2.3 ml $liter^{-1}$(1.8 teaspoons $gal^{-1}$)] for approximately 30 min. We start with a new batch of fungicidal bath every day. The cuttings are removed from the fungicide mixture and let drip dry before treatment with auxins. Cuttings are stuck into 5.7-cm (2.25 inch) or 8.3-cm (3.25 inch) rose cups under mist.

**Mist Irrigation.** Misting is done with Roberts Spray Head #2 under the following regime:

| Frequency mist on (min) | Mist duration (sec) | Cycle length (days) | System on | System off |
|---|---|---|---|---|
| 4 | 4 | 10 | daylight | dusk |
| 6 | 4 | 10 | daylight | dusk |
| 10 | 4 | 20 | 1 h after daylight | 1 h before dusk |
| 10 | 4 | 10 | 2 h after daylight | 2 h before dusk |
| 15 | 4 | 7 | 3 h after daylight | 3 h before dusk |

Agribrom, which is a brominating agent, is added to the mist water after 20 days of propagation through the duration of the rooting period. Rooting is completed in 57 days and the mist system is turned off. The rooted liners are watered only when needed with a Roberts Spray Head #5.

**Rooting Success Rate.** Our propagation success rate exceeds 90% when cuttings are taken from July through September.

**Container Production System**. We grow our older camellias under 35% shade and cover our greenhouses with plastic only during wintertime. Watering is done every other day with occasional light misting in extreme heat.

**Year One**. The first year the rooted liner camellias are potted up into 1-gal pots in May, using a container medium of pine bark and sand (17 : 3, v/v), amended with 6 kg $m^{-3}$ (10 lb $yd^{-3}$) of dolomitic lime and 4.8 kg $m^{-3}$ (8 lb $yd^{-3}$) of a slow-release fertilizer, Wilbro 20N-10P-10K. Plants are placed pot-to-pot and approximately 30% are budded and ready for Garden Center sales in the fall of the same year.

**Year Two**. A year later plants are spaced in the spring and either sold in the fall or the following spring, or used for shifting up into larger containers.

**Post Year Two**. After two growing seasons, plants are shifted up into 3-gal containers in October using the same container media formulation previously described. Plants are placed can tight (pot-to-pot) for the winter. They are spaced in May and sold the following fall and spring. After two more growing seasons, plants are shifted-up in October from 3-gal to 7-gal containers into the same container media formulation previously described. Containers are placed can-tight for winterization, then spaced in May and sold the following fall and spring.