

Plant		Camellia		453	Primary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Length of current shoot	5 shoots	Measurement	cm (integer)		Measure from base to apex in current shoot when it grows hard
2	Leaf number	5 shoots	Measurement	(integer)		Measure leaf number when current shoot grows hard
3	Leaf shape	5 leaves	Observation	1:Lanceolate 2:Oblanceolate 3:Oblong 4:Ovate 5:Obovate 6:Elliptic 7:Broad ovate 8:Irregular 9:Other		Observe in middle of the current shoot
4	Leaf size	5 leaves	Measurement	1:Very small 3:Small 5:Intermediate 7:Large 9:Very large		Measure leaves in middle of the current shoot. Very small: <=1.9 cm, small: 2.0-3.9 cm, intermediate: 4.0-6.9 cm, large: 7.0-9.9 cm, very large: >=10.0 cm
5	Beginning of flowering	1 plant	Measurement	date		Record when the first flower full opened
6	Ending of flowering	1 plant	Measurement	date		Record when the last flower was out of bloom
7	Habit of flower setting	1 plant	Observation	3:Terminal 5:Terminal and axillary 7:Axillary		
8	Base color of flower	5 flowers	Observation			Indicate reference number of RHS color chart
9	Petal number	5 flowers	Measurement	(integer)		Number of complete petals
10	Diameter of flower head	5 flowers	Measurement	cm (round to the 1st decimal place)		Measure in the full flowering stage
11	Type of stamen	5 flowers	Observation	1:Tsutsu-shibe 2:Chasen-shibe 3:Toji-shibe 4:Nagatsutsu-shibe 5:Wari-shibe 6:Chiri-shibe 7:Ume-shibe 8:Rinjin 9:Sasanqua-shibe		
12	Filament color	5 flowers	Observation	1:White 2:Light yellow 3:Yellow 4:Deep yellow 5:Tinted red		
13	Ovary hair	5 flowers	Observation	0:Absent 3:A few 5:Intermediate 7:Much		Absent:like C. japonica, little:like 'Shiro-wabisuke', intermediate:covered with hair all over, much:a lot of hair.

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1	Tree form	1 plant	Observation	1: Bushy 3: Spreading 4: Normal 5: Upright 7: Drooping 8: Zigzag 9: Other		Evaluated by canopy and branch angles
2	Tree height	1 plant	Measurement	2: Highly dwarf 3: Dwarf 4: Semi-dwarf 5: Normal 7: Tall		Measure adult trees over 5 years old. Highly dwarf: $\leq 0.3$ m, dwarf: 0.4-0.5 m, semi-dwarf: 0.6-1.9 m, normal: 2.0-3.9 m, tall: $\geq 4$ m
3	Branch circumference	1 plant	Observation	3: Small 5: Intermediate 7: Large		'Otome' and 'Fujinomine' are standard cultivars of the 'intermediate' rank
4	Sprouting frequency	1 plant	Measurement	1: Once 2: Twice 3: Three times 4: Four times 5: Five times 6: Six times		Count sprouting frequency of terminal bud per year
5	Sprouting time	1 plant	Measurement	date		Record when terminal buds sprouts
6	Hairiness of current shoot	1 plant	Observation	0: Absent 3: A few 5: Intermediate 7: Much		Absent: like <i>C. japonica</i> , weak: like <i>C. vernalis</i> , intermediate: like <i>C. sasanqua</i> , much: a lot of hair.
7	Durability of hair of current shoot	1 plant	Observation	1: Remain in summer 9: Fall out in summer		
8	Branching ability	1 plant	Observation	3: Sparse 5: Intermediate 7: Dense		Examine growing number of current shoots
9	Internode length	1 plant	Observation	3: Short 5: Intermediate 7: Long		Short: average: $\leq 1.5$ cm, intermediate: about 2 cm, long: $\geq 2.5$ cm
10	Change of leaf type	1 plant	Observation	2: No change 4: Light-dependent 6: Seasonal change 8: Remarkable change		Examined changes of leaf form and size
11	Leaf type	5 leaves	Observation	2: Flat 3: Recurved 4: Folding 5: Outcurved margin 6: Incurved margin 7: Sinuous 9: Other		
12	Shape of leaf tip	5 leaves	Observation	1: Very acute 2: Acute 3: Obtuse 4: Convex 5: Slightly convex 6: Trilobate 9: Other		
13	Shape of leaf base	5 leaves	Observation	2: Acute 5: Obtuse 8: Rounded		

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14	Leaf color	5 leaves	Observation	2:Light green 3:Yellow green 4:Green 5:Deep green 6:Silver green 7:White speckled 8:Yellow speckled 9:Yellow		If it is mottled leaf, enter mottle color
15	Variegation type	5 leaves	Observation	2:Hoshi-fu 3:Naka-fu 4:Sugano-fu 5:Tsume-fu 6:Fukurin 7:Fukurin-kuzure 8:Bota-fu 9:Other		
16	Leaf luster	5 leaves	Observation	0:Absent 5:Weak 9:Present		Weak: C. sasanqua, present: 'Otome'
17	Leaf thickness	5 leaves	Observation	3:Thin 5:Intermediate 7:Thick		Compared according to feeling of leaves. Intermediate: 'Otome'
18	Leaf margin shape	5 leaves	Observation	1:Entire 2:Smooth sinuate 3:Pointed serrated 4:Fine serrated 5:Blunt serrated 6:Dentate 7:Coarse-serrate 8:Lobate 9:Other		Observe whether serration is fine and sharp or not
19	Veins on leaf surface	5 leaves	Observation	3:Transparent 5:Semi-transparent 7:Opaque		Transparent: leaf vein is visible, semi-transparent: lateral vein is visible, opaque: only midrib is visible
20	Vein of leaf back	5 leaves	Observation	3:Transparent 5:Semi-transparent 7:Opaque		Transparent: leaf vein is visible, semi-transparent: lateral vein is visible, opaque: only midrib is visible
21	Protrusion of leaf vein	5 leaves	Observation	3:Concave 5:Flat 7:Convex		
22	Pattern of leaf vein	5 leaves	Observation	1:Simple 9:Complex		Simple: rough vein, complex: fine vein
23	Petiole length	5 leaves	Measurement	3:Short 5:Intermediate 7:Long		Short: <= 0.4 cm, intermediate: 0.5-0.9 cm, long: >= 1.0 cm
24	Hair of petiole and leaf	5 leaves	Observation	0:Absent 3:Some in petiole 4:Much in petiole 5:Absent in leaf 6:Present in leaf surface 7:Present in leaf back 8:Like cork in leaf back 9:Much all over		Observe young leaves
25	Changeability of flower form	5 flowers	Observation	3:Low 5:High 7:Very high		Observe from petal stage to flowering stage

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26	Flower form	5 flowers	Observation	3:Single 7:Double 9:Formal-double		
27	Form of single blooming flower	5 flowers	Observation	1:Tsutsu-zaki 2:Rappa-zaki 3:Choko-zaki 4:Haijyo-zaki 5:Kakae-zaki 6:Heikai-zaki 7:Hoshi-zaki 8:Wan-zaki 9:Other		Observe flower form at the best flowering time
28	Form of double blooming flower	5 flowers	Observation	1:Double 2:Renga-zaki 3:Nidan-zaki 4:Botan-zaki 5:Shishi-zaki 6:Anemone-zaki 7:Henka-zaki 8:Kakae-zaki 9:Other		Observe flower form at the best flowering time
29	Form of formal double blooming flower	5 flowers	Observation	1:Sene-zaki 2:Hojyu-zaki 3:Retsuben-zaki 4:Bara-zaki 5:Rasenzaki 6:Karako-zaki 9:Others		Observe flower form at the best flowering time
30	Flower direction	1 plant	Observation	3:Downwards 5:Horizontal 7:Upwards		The direction is determined by at least 70% of all flowers.
31	Classification of flower color	5 flowers	Observation	1:Single colored 9:Multi colored		Distinguish between single-and multi color flowers
32	Color of inside petal	5 flowers	Observation	1:White 2:Pale pink 3:Pink 4:Deep pink 5:Red 6:Purplish red 7:Deep red 8:Dark red 9:Other		
33	Classification of variegate color	5 flowers	Observation	1:Flaked 2:Other		
34	Flake classification	5 flowers	Observation	1:Fukikake-shibori 2:Ko-shibori 3:Tate-shibori 4:Sujiri		Observe red flakes appearing on white flowers
35	Flake color	5 flowers	Observation	1:White 2:Pale pink 3:Pink 4:Deep pink 5:Red 6:Purplish red 7:Deep red 8:Dark red 9:Other		
36	Classification of other variegations	5 flowers	Observation	1:Unjyohan 2:Yokomoku 3:Tenpan 4:Dark eye 5:Fukurin 6:Bokashi 7:Sokojiro 8:Sokobeni 9:Other		Observe shape and size of white variegation appeared on red flower
37	Variegation color	5 flowers	Observation	1:White 2:Light pink 3:Pink 4:Deep pink 5:Red 6:Purplish red 7:Deep red 8:Dark red 9:Other		

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38	Outer petal shape	5 flowers	Observation	1:Rounded 2:Obovate 3:Ovate 4:Elliptic 5:Oblong 6:Spatulate		Record the form of outer petal
39	Petal vein	5 flowers	Observation	0:Absent 2:Weak 3:Strong		Vein appearing on petal
40	Petal margin shape	5 flowers	Observation	1:Rounded 2:Sagittate 3:Emarginate 4:Sinuate 5:Crinkled 6:Serrate 7:Folding 8:Deep notched 9:Other		Observe normal outer petal
41	Inner petal shape	5 flowers	Observation	1:Same as outer petal 2:Gradual size decrease 3:Narrow 4:Karako 5:Large Karako 6:Stamen complex 7:Large 8:Erect		Observe differences between outer and inner petals
42	Bend of outer petal	5 flowers	Observation	1:Flat 3:Sinuous 5:Incurved 7:Recurved		Observe the form of outer petal
43	Petal thickness	5 flowers	Observation	3:Thin 5:Intermediate 7:Thick		
44	Form of flower bud	5 flowers	Observation	2:Circular 4:Pointed circular 6:Pointed oblong 8:Oblong		
45	Number of filaments	5 flowers	Measurement	0:Absent 1:Atrophic 3:Few 5:Intermediate 7:Many		Few: <=49 filaments, intermediate: 50-99, many: >=100
46	Anther color	5 flowers	Observation	1:White 2:Light yellow 3:Yellow 4:Deep yellow 5:Brownish yellow		
47	Adhesion of stamen to petal	5 flowers	Observation	0:No adhesion 9:Adhesion		No adhesion: <i>C. sasanqua</i> , adhesion: <i>C. japonica</i>
48	Number of ovary divisions	5 flowers	Observation	1:1 2:2 3:3 4:4 5:5 6:6 7:7 8:8 9:>=9		Observe section of ovary
49	Pistil length compared to stamen length	5 flowers	Observation	3:Shorter 5:Same 7:Longer		Shorter: the pistil length is shorter than the stamen length, same: the pistil is the same length as the stamens, Longer: the pistil length is longer than the stamen length.
50	Atrophy of pistil	5 flowers	Observation	1:Normal 9:Atrophy		

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51	Exposure of the pistil from bud	5 flowers	Observation	1:No exposure 9:Exposure		Observe buds.
52	Number of style divisions	5 flowers	Observation	0:None 2:2 3:3 4:4 5:5 6:6 7:7-8 8:>=9		Enter number of complete style division (i.e. excluding incomplete ones)
53	Degree of style division	5 flowers	Observation	0:No division 2:few 3:1/4 4:1/3 5:1/2 6:Almost divided		Division length relative to stamen
54	Style hair	5 flowers	Observation	0:Absent 2:Very sparse 3:Sparse 7:Dense		
55	Shape of capsule	5 capsules	Observation	2:Circular 4:Oblong 6:Pear shaped 7:Gourd shaped 8:Broad elliptic 9:Other		
56	Size of capsule	5 capsules	Measurement	1:Very small 3:Small 5:Intermediate 7:Large 9:Very large		Very small: <=0.5 cm diameter, small: about 1 cm, intermediate: about 2 cm, large: 3-4 cm, very large: >=5 cm
57	Thickness of capsule	5 capsules	Observation	3:Thin 7:Thick 9:Very thick		
58	Flower stalk	5 flowers	Observation	0:Absent 3:Short 7:Long		

Plant		Camellia		453	Secondary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Freezing tolerance	3 plants	Observation	1:Very low 3:Low 5:Intermediate 7:High 9:Very high		After treatment at -9 centi degrees for 2 hours, keep at room temperature for 2 days. Then observe degree of injury.
2	Pollen fertility	100 grains	Measurement	% (round to the 1st decimal place)		Examine pollen with a microscope by means of staining such as by acetocarmine.

Plant		Camellia		453	Secondary optional character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Disease resistance	1 plant	Observation	3:Low 5:Intermediate 7:High		Evaluated from the extent of disease by natural infection in field with flower blight, leaf and stem gall, anthracnose, etc.
2	Pest resistance	1 plant	Observation	3:Low 5:Intermediate 7:High		Observe the extent of damage in field
3	Heat tolerance	1 plant	Observation	3:Low 5:Intermediate 7:High		Observe the extent of injury due to high temperature
4	Drought tolerance	1 plant	Observation	3:Low 5:Intermediate 7:High		Observe the extent of injury due to drought
5	Self-incompatibility	50 flowers	Measurement	% (round to the 1st decimal place)		Investigate fruit set percentage resulted from self-pollination by artificial crossing. Count the fruits containing seeds.
6	Number of chromosomes	1 plant	Measurement			Examine chromosome number of root tip cells (2n) or pollen mother cells (n) with a microscope
7	Fruiting ability	1 plant	Observation	0:None 3:Very low 5:Intermediate 7:High		Evaluate based on number of set fruits in the tree



Plant		Camellia		453	Tertiary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Fragrance of flower	5 flowers	Sensory	0:Absent 2:Weak 7:Strong		Fragrance under windless condition
2	Rooting ability of cutting	10 plants	Measurement	3:Low 5:Intermediate 7:High		Cutting is conducted when current shoots have lignified. Evaluate rooting ability based on number and length of roots.

Plant		Camellia		453	Tertiary optional character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Transplantability	5 plants	Observation	3:Low 5:Intermediate 7:High		Evaluate the ability to take root after transplanting
2	Adaptability for hedges	5 plants	Observation	3:Low 5:Intermediate 7:High		Examine adaptability of hedging
3	Forcing ability of flowering	5 plants	Observation	3:Low 5:Intermediate 7:High		Examine forcing ability by flowering regulation
4	Acceleration of flower-bud differentiation by growth retardant	5 branches	Observation	3:Low 5:Intermediate 7:High		Examine acceleration ability of flower bud differentiation by means of plant growth regulator treatment