| Plant | Rhododendron 93 |  |  | Primary essential character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 1 | Number of flowers per <br> flower cluster | 5 flower clusters | Measurement | (round to the 1st decimal place) | Measure at flowering stage |
| 2 | Leaf length of spring <br> leaf | 5 leaves | Measurement | mm (integer) | Measure in summer |
| 3 | Hairiness of spring leaf | 5 leaves | Observation | 1:Very sparce 3:Sparce 5:Intermediate 7:Dense 9:Very dense | Amount of pubescence and glandular hair of dorsal surface |
| 4 | Glossiness of spring leaves | 5 leaves | Observation | 0:Absent 1:Very weak 3:Weak 5:Intermediate 7:Strong | Glossiness of abaxial surface of spring leaves in summer |
| 5 | Time of flowering | Block | Observation |  | Time when $80 \%$ of all plants have flowered |
| 6 | Corolla tube length | 5 flowers | Measurement | mm (integer) | Measure at flowering stage |
| 7 | Corolla lobe width | 5 flowers | Measurement | mm (integer) | Measure at flowering stage |
| 8 | Color of flower | 5 flowers | Measurement |  | Refer to the RHS color chart at flowering stage |
| 9 | Amount of blotches | 5 flowers | Observation | $\begin{aligned} & 0: \text { Absent 1:Very low 3:Low 5:Intermediate } \\ & 7: \text { High } \end{aligned}$ | Observe at flowering stage |
| 10 | Color of blotches | 5 flowers | Measurement |  | Refer to the RHS color chart at flowering stage |
| 11 | Hairiness of ovary | 5 flowers | Observation | 0:Absent 1:Very sparse 3:Sparse 5:Intermediate 7:Dense | Observed at flowering stage |
| 12 | Type of flower | 5 flowers | Observation | 1:Single 3:Semi-double 5:Single, hose in hose 7:Semi-double, hose in hose 9:Double | Observed at flowering stage |


| Plant | Rhododendron |  |  | Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 1 | Tree form | 5 plants | Observation | 3:Spreading 5:Intermediate 7:Erect | Time of growth cessation in autumn |
| 2 | Tree height | 5 plants | Observation | 3:Dwarf 5:Intermediate 7:High | Plant age is at least 5 years. |
| 3 | Circumference of biennial branch | 5 branches | Observation | 3:Small 5:Intermediate 7:Large | Time of cessation of outward growth in autumn |
| 4 | Color of young shoot | 5 shoots | Observation | 1:White 3:Green 5:Red 7:Reddish brown 9:Brown | Time of bud break in spring |
| 5 | $\begin{aligned} & \text { Density of primary } \\ & \text { scaffold branches } \end{aligned}$ | 5 plants | Observation | 3:Sparse 5:Intermediate 7:Dense | Time of growth cessation in autumn |
| 6 | Density of twigs | 5 plants | Observation | 3:Sparse 5:Intermediate 7:Dense | Time of growth cessation in autumn |
| 7 | Pubescence of young shoot | 5 shoots | Observation | 3:Sparse 5:Intermediate 7:Dense | Observe in spring |
| 8 | Serration of spring leaves | 5 leaves | Observation | 3:Little 5:Intermediate 7:Much | Observe in spring |
| 9 | Curvature of leaf | 5 leaves | Observation | 3:Incurving 5:Straight 7:Reflexing | Observe in summer |
| 10 | Undulation of margin | 5 leaves | Observation | 3:Slightly undulate 5:Intermediate 7:Remarkably undulate | Observe in summer |
| 11 | Shape of midrib crosssection | 5 leaves | Observation | 3:Concave 5:Flat 7:Convex | Observe in summer |
| 12 | Twisting of leaf | 5 leaves | Observation | 3:Weak 5:Intermediate 7:Strong | Observe in summer |
| 13 | Shape of leaf apex | 5 leaves | Observation | 3:Obtuse 5:Intermediate 7:Apiculate | Observe in summer |
| 14 | Color of spring leaves | 5 leaves | Measurement |  | Refer to the RHS color chart. Measure in summer |
| 15 | Color of autumn leaves | 5 leaves | Measurement |  | Refer to the RHS color chart. Measure in winter |


| Plant | Rhododendron 93 |  |  | Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 16 | Thickness of spring leaves | 5 leaves | Measurement | mm (round to the 1st decimal place) | Measure in summer |
| 17 | Pubescence type of abaxial surface of spring leaf | 5 leaves | Observation | 3:Flat 5:Simple 7:Wavy | Observe in summer |
| 18 | Glandular hair of dorsal surface of spring leaf | 5 leaves | Observation | 0:Absent 9:Present | Observe in summer |
| 19 | Amount of pubescence of dorsal surface of spring leaf | 5 leaves | Observation | 3:Sparse 5:Intermediate 7:Dense | Observe in summer |
| 20 | Pubescence type of dorsal surface of spring leaf | 5 leaves | Observation | 3:Flat 5:Simple 7:Wavy | Observe in summer |
| 21 | Thickness of summer leaf | 5 leaves | Measurement | mm (round to the 1st decimal place) | Measure in winter |
| 22 | Pubescence type of abaxial surface of summer leaf | 5 leaves | Observation | 3:Flat 5:Simple 7:Wavy | Observe in winter |
| 23 | Pubescence type of dosal surface of summer leaf | 5 leaves | Observation | 3:Flat 5:Simple 7:Wavy | Observe in winter |
| 24 | Amount of pubescence of dorsal surface of summer leaf | 5 leaves | Observation | 3:Sparse 5:Intermediate 7:Dense | Observe in winter |


| Plant | Rhododendron |  |  | 93 (09006) | Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods |  | Rank or measurement unit | Remarks |
| 25 | Pubescence color of abaxial surface of spring leaf | 5 leaves | Observation | 3:White | 5:Brown 7:Black | Observe in summer |
| 26 | Pubescence color of dorsal surface of spring leaf | 5 leaves | Observation | 3:White | 5:Brown 7:Black | Observe in summer |
| 27 | Pubescence color of abaxial surface of summer leaf | 5 leaves | Observation | 3:White | 5:Brown 7:Black | Observe in winter |
| 28 | Glandular hair of dorsal surface of summer leaf | 5 leaves | Observation | 0 : Absent | 9:Present | Observe in winter |
| 29 | Pubescence color of dorsal surface of summer leaf | 5 leaves | Observation | 3:White | 5:Brown 7:Black | Observe in winter |
| 30 | Waxiness of abaxial <br> surface of summer leaf | 5 leaves | Observation | 0 : Absent | 9:Present | Observe in winter |
| 31 | Waxiness of dorsal <br> surface of summer leaf | 5 leaves | Observation | 0 : Absent | 9:Present | Observe in winter |
| 32 | Waxiness of petiole of summer leaf | 5 leaves | Observation | 0 : Absent | 9:Present | Observe in winter |
| 33 | Attitude of spring leaf | 5 leaves | Observation | 3:Semi-up | wards 5:Horizontal 7:Drooping | Observe in summer |
| 34 | Attitude of summer leaf | 5 leaves | Observation | 3:Semi-up | wards 5:Horizontal 7:Drooping | Observe in winter |
| 35 | Type of flower cluster | 5 flower clusters | Observation | 2:Termina | 1 5:Terminal and lateral 8:Lateral | Observe in autumn |


| Plant $\quad$ R | Rhododendron 93 |  |  | 9006) Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 36 | Attitude of flower | 5 flowers | Observation | 3:Erect 5:Horizontal 7:Drooping | Observe from horizontal level at flowering stage |
| 37 | Shape of flower bud | 5 buds | Observation | 3:Acute 5:Elliptic 7:Round | Observe just before flowering in spring |
| 38 | Incision of corolla lobe | 5 flowers | Observation | 3:Weak 5:Intermediate 7:Strong | Rate of incision for corolla tube |
| 39 | Symmetry of corolla | 5 flowers | Observation | 1:Asymmetric 8:Symmetric | Observe at flowering stage |
| 40 | Shape of upper half of corolla | 5 flowers | Observation | 1:Linear 2:Lanceolate 3:Ovate 4:Oblanceolate 5:Obovate 6:Semi-elliptic 7:Semi-orbicular | Observe at flowering stage |
| 41 | Shape of lower half of corolla | 5 flowers | Observation | 1:Linear 2:Lanceolate 3:Ovate 4:Oblanceolate 5:Obovate 6:Semi-elliptic 7:Semi-orbicular | Observe at flowering stage |
| 42 | Shape of apex of corolla lobe | 5 flowers | Observation | 3:Concave 5:Flat 7:Convex | Observe at flowering stage |
| 43 | Overlapping of corolla <br> lobe | 5 flowers | Observation | 1:Not overlapping 3:Touching 5:Intermediate 7: Overlapping | Observe from side of corolla tube at flowering stage |
| 44 | Incision of corolla lobe margin | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 45 | Undulation of corolla lobe | 5 flowers | Observation | 0:Absent 3:Weak 5:Intermediate 7:Strong | Observe at flowering stage |
| 46 | Pubescence of dorsal <br> surface of corolla lobe | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 47 | Pubescence of abaxial surface of corolla lobe | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 48 | Scaly hair of corolla <br> lobe | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |


| Plant $\quad$ R | Rhododendron |  |  | 93 (09006) | Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit |  | Remarks |
| 49 | Diameter of flower | 5 flowers | Measurement | 3:Small | 5:Intermediate 7:Large | Observed at the flowering stage |
| 50 | Corolla width | 5 flowers | Measurement | 3:Narrow | 5:Intermediate 7:Wide | Width of corolla from side to side at flowering stage |
| 51 | Corolla length | 5 flowers | Measurement | 3:Short | 5:Intermediate 7:Long | Length of corolla from the base to top at flowering stage |
| 52 | Type of flower color | 5 plants | Observation | 1:Single- | colored 2:Bicolored | Observe at flowering stage |
| 53 | Variegation of flower color | 5 plants | Observation | 0 : Absent | 3:Weak 5:Intermediate 7:Strong | Observe at flowering stage |
| 54 | Margin of contrasting <br> flower color | 5 plants | Observation | 0 :Absent <br> 7:White f | 3:White throat 5:White jewel spot ingernail | Observe at flowering stage |
| 55 | White jewel-border of flower color | 5 plants | Observation | 0 : Absent | 9:Present | Observe at flowering stage |
| 56 | Crimson fingernail of flower color | 5 plants | Observation | 0 : Absent | 9:Present | Observe at flowering stage |
| 57 | Pattern of light and shade of flower color | 5 flowers | Observation | $0:$ Absent | 9:Present | Observe at flowering stage |
| 58 | Change of flower color | 5 flowers | Observation | 0 : Absent | 9:Present | Change in flower color from beginning of flowering to full bloom |
| 59 | Hue of flower core | 5 flowers | Observation | 3:Bright | 5:Same 7:Dull | Observe at flowering stage |
| 60 | Variation of lobe number | 5 flowers | Observation | $0:$ Absent | 9:Present | Observe at flowering stage |
| 61 | Number of corolla lobes | 5 flowers | Measurement | 0 :None 3 | :5 5:6 7:7 | Measure at flowering stage |
| 62 | Petal shape of stamen | 5 flowers | Observation | $0:$ Absent | 3:Partly 5:Incomplete 7:Complete | Observe at flowering stage |


| Plant | Rhododendron |  |  | 9006) Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 63 | Curvature of stamen | 5 flowers | Observation | 0:Absent 3:Slight 5:Intermediate 7:Strong | Observe at flowering stage |
| 64 | Glandular hair of stamen | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 65 | Pubescence length of stamen | 5 flowers | Observation | 3:Short 5:Intermediate 7:Long | Observe at flowering stage |
| 66 | Number of stamens | 5 flowers | Measurement | (integer) | Measure at flowering stage |
| 67 | Length of stamen | 5 flowers | Observation | 3:Shorter 5:Same 7:Longer | Compare stamen with corolla at flowering stage |
| 68 | Color of filament | 5 flowers | Observation | 0:White 2:Yellow 4:Red 6:Reddish purple 8:Purple | Observe at flowering stage |
| 69 | Color of anther | 5 flowers | Observation | 0:White 2:Yellow 4:Brown 6:Purple 8:Red | Observe at flowering stage |
| 70 | Petal development of pistil | 5 flowers | Observation | 3:Absent 7: Developed | Observe at flowering stage |
| 71 | Glandular hair of ovary | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 72 | Length of pistil | 5 flowers | Observation | 3:Shorter 5:Same 7:Longer | Compare at flowering stage |
| 73 | Color of style | 5 flowers | Observation | 0:White 2:Yellow 3:Light green 4:Light red 5:Red 6:Light purple 7:Purplish red 8:Purple | Observe at flowering stage |
| 74 | Color of stigma | 5 flowers | Observation | 0:White 2:Yellow 3:Light green 4:Light red 5:Red 7:Purplish red 8:Purple | Observe at flowering stage |
| 75 | Glandular hair of style | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 76 | Color of flower bud scale | 5 flowers | Observation | 1:Green 5:Red 8:Brown | Observe at flowering stage |
| 77 | Overlapping of flower bud scale | 5 flowers | Observation | 0:No overlapping 9:Overlapping | Observe before flowering |


| Plant $\quad$ R | Rhododendron 93 |  |  | Primary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 78 | Presence of hose in hose | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 79 | Degree of hose in hose | 5 flowers | Observation | 3:Small 4:Slightly small 5:Intermediate 6:Slightly large 7:Large | Observe at flowering stage |
| 80 | Coalescence of calyx with base of corolla | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 81 | Number of calyxes | 5 flowers | Measurement | 3:5 5:6 7:7 | Observe at flowering stage |
| 82 | Differences in calyx size | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 83 | Shape of calyx | 5 flowers | Observation | 1:Prominent 3:Orbicular 5:Lanceolate 7:Serrate | Observe at flowering stage |
| 84 | Calyx length | 5 flowers | Measurement | mm (round to the 1st decimal place) | Observe at flowering stage |
| 85 | Calyx width | 5 flowers | Measurement | mm (round to the 1st decimal place) | Observe at flowering stage |
| 86 | Coloration of calyx margin | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 87 | Pubescence of calyx | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 88 | Glandular hair of calyx | 5 flowers | Observation | 0:Absent 9:Present | Observe at flowering stage |
| 89 | Pedicel length | 5 flowers | Observation | 3:Short 5:Intermediate 7:Long | Observe at flowering stage |
| 90 | Pedicel width | 5 flowers | Observation | 3:Narrow 5:Intermediate 7:Broad | Observe at flowering stage |


| Plant $\quad$ R | Rhododendron |  |  | Secondary essential character |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit |  | Remarks |
| 1 | Time of leaf fall | 5 branches | Measurement |  |  | Time of month when leaves developed in spring fall. First ten days=E, middle ten days $=\mathrm{M}$, the last ten days=L |
| 2 | Length of flowering time | 5 plants | Measurement | days (integer) |  | Length of time from $10 \%$ to $90 \%$ of plants have flowered |
| 3 | Cold hardiness | 5 plants | Observation | 2:Very low 3:Low 4:Slightly low <br> 5:Intermediate 6:Slightly high 7:High high | $8: \text { Very }$ | Degree of browning and dying of florets in winter |
| 4 | Resistance to Earias roseifora | 5 plants | Observation | 2:Very low 3:Low 4:Slightly low <br> 5:Intermediate 6:Slightly high 7:High high | 8:Very | Degree of damage to flower buds in autumn |
| 5 | Resistance to <br> Anthracnose | 5 plants | Observation | 2:Very low 3:Low 4:Slightly low <br> 5:Intermediate 6:Slightly high 7:High high | 8:Very | Degree of occurrence in spring and summer |
| 6 | Resistance to botrytis petal blight | 5 plants | Observation | $\begin{aligned} & \text { 2:Very low 3:Low 4:Slightly low } \\ & \text { 5:Intermediate 6:Slightly high 7:High } \\ & \text { high } \end{aligned}$ | 8:Very | Degree of occurrence at flowering stage |
| 7 | Resistance to disease common to propagation | 5 plants | Observation | 2:Very low 3:Low 4:Slightly low <br> 5:Intermediate 6:Slightly high 7:High high | 8:Very | Degree of occurrence from spring to autumn |


| Plant $\quad$ R | Rhododendron 93 |  |  | Secondary optional character |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
| 1 | Time of germination | 5 plants | Measurement |  | Time of mouth when bud break begins. E=first ten days, $\mathrm{M}=\mathrm{middle}$ ten days, $\mathrm{L}=$ the last ten days |
| 2 | Ever-flowering ability | 5 plants | Observation | ```0:None 2:Very weak 3:Weak 4:Slightly weak 5:Intermediate 6:Slightly strong 7:Strong 8:Very strong``` | Observe flowering shoot in all seasons |
| 3 | Heat tolerance | 5 plants | Observation | $\begin{aligned} & \text { 2:Very low 3:Low 4:Slightly low } \\ & \text { 5:Intermediate 6:Slightly high 7:High 8:Very } \\ & \text { high } \end{aligned}$ | Degree of growth damage under high temperature in summer |
| 4 | Drought tolerance | 5 plants | Observation | $\begin{aligned} & \text { 2:Very low 3:Low 4:Slightly low } \\ & \text { 5:Intermediate 6:Slightly high 7:High 8:Very } \\ & \text { high } \end{aligned}$ | Degree of growth damage under drought condition in all season |
| 5 | Resistance to lace bug | 5 plants | Observation | ```2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high``` | Degree of damage at the time of occurrence |
| 6 | Resistance to white fly | 5 plants | Observation | ```2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high``` | Degree of damage at the time of occurrence |
| 7 | Resistance to phomopsis die-back | 5 plants | Observation | ```2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high``` | Degree of damage at the time of occurrence |
| 8 | Forcing ability | 5 plants | Measurement | days (integer) | Length between the day when plants are put in heat room kept at the minimum night temperature of 10 centi degrees, and the day of flowering. |
| 9 | Cutting ability | 5 plants | Measurement | Number (integer) | Number of cuttings per biennial branch in all seasons |
| 10 | Rooting ability | 10 cuttings | Measurement | Number (integer) | Plant shoots after flowering for cutting, then two months later count rootings whose length is at least 1 mm |


| Plant |  | Rhododendron |  | 93 (09006) | Tertiary essential character |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |  |
| 1 | Regenerative shoot <br> length | 5 shoots | Measurement | cm (integer) | After pruning |  |

