|  |  |  |
| --- | --- | --- |
|  | Characters | State of characters |
|  |  | 0 | 1 | 2 | 3 |
| 1 | Growth rings | indistinct/absent | present |  |  |
| 2 | Porosity | diffuse-porous | semi-ring-porous | ring-porous |  |
| 3 | Vessels arrangement in diagonal or dendritic pattern | absent | present |  |  |
| 4 | Vessel density per mm2 | <5 mm2 | 5–20 mm2 | 20–40 mm2 | > 40 mm2 |
| 5 | Vessels mostly solitary | absent | present |  |  |
| 6 | Vessels in radial multiples of 4 or more | absent | present |  |  |
| 7 | Vessel clusters | absent | present |  |  |
| 8 | Solitary vessel outline angular | absent (circular-oval) | present |  |  |
| 9 | Mean tangential diameter of vessel | ≤50 µm | 51–100 µm | 101–150 µm | ≥151 µm |
| 10 | Mean vessel element length | ≤350 µm | 351–600 µm | 601–850 µm | ≥851 µm |
| 11 | Perforation plates | simple | simple + scalariform | simple + reticulate |  |
| 12 | Shape of intervessel pits | circular-oval | polygonal | both |  |
| 13 | Arrangement of intervessel pits | alternate | opposite |  |  |
| 14 | Tyloses | absent | present |  |  |
| 15 | Vascular tracheids | absent | present |  |  |
| 16 | Type of fibers | only septate | 1 | only non-septate |  |
| 17 | Diameter of fiber | ≤10 µm | 11 –15 µm | 16 –20 µm | ≥20 µm |
| 18 | Prismatic crystals in fibers | absent | present |  |  |
| 19 | Apotracheal axial parenchyma | absent | present |  |  |
| 20 | Paratracheal axial parenchyma | absent | present |  |  |
| 21 | Axial parenchyma marginal | absent | present |  |  |
| 22 | Prismatic crystals in axial parenchyma | absent | present |  |  |
| 23 | Parenchyma strand | absent | present |  |  |
| 24 | Types of rays | homogeneous  | heterogeneous  | Homogeneous and heterogeneous |  |
| 25 | 4–12 rays per mm lineal | Absen1t | present |  |  |
| 26 | Type of cells in uniseriate rays | All rays cells upright and/or square | upright, square and procumbent |  |  |
| 27 | Width of multiseriate rays (cells) | ≤5 cells | ≥6 cells |  |  |
| 28 | Height of multiseriate rays | ≤300 µm | 301–400 µm | 401–500 µm | ≥501 µm |
| 29 | Prismatic crystals in rays | absent | In upright or square cells | in procumbent cells | both |
| 30 | Percentage of uniseriate rays | ≤30% | ≥31% |  |  |
| 31 | Percentage of 1–3 seriate rays | ≤30% | ≥30% |  |  |
| 32 | Rays mostly 4–10 seriate | absent | present |  |  |
| 33 | Radial canal  | 1 per ray | >1 per ray | absent |  |

**Supplemental Data 1.** List of the anatomical characters used for multivariate analyses with their respective coding

**Supplemental Data 2.** Data Matrix (DM) that shows the distribution of the character state used in the multivariate analysis of the twenty specimens. The sign "?" indicates that in that taxon the value of character state was not calculated due to the preservation state of the specimen. Acronyms correspond to specimens as indicated in Table 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ASPO1 | ASPA1 | ASPA2 | ASPA3 | ASPA4 | ASBO1 | ASBO2 | ASBO3 | SCHK1 | SCHK2 | SCHT1 | SCHk3 | SCHK4 | PMET1 | PMET2 | ASPA5 | ASBAL | ASURN | SCHBA | METOP | ASPA6 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | ? | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4 | 1 | 1 | 1 | 2 | 2 | 1 | ? | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 5 | 1 | 1 | 1 | 0 | 1 | 1 | ? | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 6 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 7 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ? | 1 |
| 9 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 2 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 2 |
| 10 | 0 | 1 | 1 | 0 | 0 | 0 | ? | 0 | 0 | 0 | ? | 0 | 0 | 0 | 0 | 0 | ? | ? | ? | ? | 0 |
| 13 | ? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 0 |
| 12 | ? | ? | 1 | 0 | 0 | 0 | 0 | 0 | ? | 2 | 2 | ? | 2 | 0 | 0 | 0 | 0 | 0 | 0 | ? | 0 |
| 17 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | ? | ? | ? | 1 | 1 |
| 19 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| 23 | ? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| 25 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ? | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 27 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 28 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 3 | 3 | 0 | 0 | 0 | 3 | 3 | 0 |
| 29 | 0 | 0 | 1 | 1 | 1 | 3 | 3 | 3 | ? | ? | ? | 0 | 1 | 3 | 3 | 3 | 1 | 0 | 0 | 3 | 1 |
| 30 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | ? | 0 |
| 31 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | ? | 0 |
| 33 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | ? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |

**Supplemental Data 3.** Scores of the anatomical characters used for the correspondence analysis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Axis 1** | **Axis 2** | **Axis 3** | **Axis 4** |
| 1 | 0,14851 | 0,0079288 | 0,1872 | 0,22133 |
| 2 | 1,4801 | -0,062727 | 0,39587 | 0,21844 |
| 3 | 1,5529 | -0,62421 | -0,064245 | 0,50333 |
| 4 | 0,039905 | 0,19546 | 0,020541 | 0,042786 |
| 5 | -0,056643 | 0,22998 | -0,022955 | -0,066404 |
| 6 | -0,093418 | -0,050624 | -0,034522 | 0,3339 |
| 7 | 0,096136 | 0,1602 | -0,13212 | -0,056313 |
| 9 | -0,39722 | 0,079867 | -0,25534 | 0,013651 |
| 10 | -0,95141 | 0,44861 | -0,9331 | 0,58809 |
| 13 | 0,92558 | 0,07413 | -1,0682 | -1,2779 |
| 12 | -0,97586 | -0,95898 | 0,28655 | -0,10747 |
| 17 | -0,11439 | 0,11619 | -0,0054088 | -0,12218 |
| 19 | 0,013065 | 0,27384 | -0,43152 | 0,69516 |
| 23 | -0,13948 | -0,10695 | 0,21811 | -0,20413 |
| 25 | -0,34735 | 0,16638 | -0,10194 | -0,19484 |
| 27 | -0,065779 | -0,31804 | 0,37081 | -0,035935 |
| 28 | 0,70779 | -0,75966 | -0,36085 | 0,011219 |
| 29 | 0,29122 | 0,11009 | 0,54713 | 0,063371 |
| 30 | 0,11478 | 1,0514 | 0,55701 | -1,0083 |
| 31 | -0,024705 | 0,17872 | -0,095753 | 0,1386 |
| 32 | -0,64773 | -1,3231 | 0,1827 | -0,53827 |
| 33 | -0,067067 | -0,040192 | -0,0015414 | -0,055479 |