

## SPIRAEA

Rosaceae

Vessels typically small, (mean tangential diameter less than  $100\mu$ ) often very small ( $25-50\mu$ ); typically very numerous (40 per sq. mm); ring-porous or semi-ring-porous in some species. Perforations usually exclusively simple, a few scattered foraminiate or reticulate plates occur in some species. Intervascular pitting typically alternate, minute; pits to ray cells similar to intervacular pits. Tyloses rare. Mean member length of mature material 0.4-0.95 mm.

Parenchyma usually apotracheal only, in scattered cells or short uniseriate lines from ray to ray; very sparse, with occasional scanty paratracheal and diffuse cells in some species. Strands typically of 4 cells, occasionally up to 5 or 6.

Rays multiseriate, mostly 2-5 cells wide, up to 6-10 cells wide in some species; over 1 mm in height; sometimes of two distinct widths. Uniseriates moderately numerous and composed of both procumbent and upright cells, typically 9-15 rays per mm. Heterogeneous (Kribs Type IIB) with 1 or 2 marginal rows of square or upright cells.

Fibres with numerous distinctly bordered pits, less numerous on tangential than on radial walls. Very fine septa and gum plates occur in occasional fibres in *S. alpina*. Walls thin to thick, often radially flattened and with thicker walls towards the end of the growth ring. Mean length 0.9-1.6 mm.