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Editorial

Development of annual growth rings in trees

Olga Turkovskaya*

Department of Biochemistry and Physiology of Plants, Durham University, Saratov, Russia

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EDITORIAL NOTE

Annual growth rings are the circular rings found at the ending of a log or tree stump. Each set of rings denotes one year of growth. Each year of growth has two clear-cut growing seasons: spring and summer. In the spring, trees exploit all the dampness in the soil and conduct large capacities of sap. This wood development is called early wood. These cells are large in diameter and have fine cell walls. They are extremely light in colour. Open pores of early wood can be seen with the unaided eye. Before the tree is cut, these pores are filled with moisture. Less moisture in the late spring thickens the cell walls and causes less moisture movement through the tree. Summer growth is called latewood. Latewood cells are smaller in diameter across and have thick cell walls. They are dark in colour. Latewood cells likewise have pores where dampness is stored.

One year of growth equals one early wood band and one latewood band of development. Trees can foster a false wood ring. False wood looks like latewood yet isn't brought about by change in season. It is brought about by an early period of drought, late frost or defoliation of the tree by bugs. The false ring will intrude on the early wood band, which makes an appearance of two years of growth and not one.

Annual growth rings are created during the developing cycles of a tree. A tree grows in two unique directions: height and diameter. Trees initially grow in height. The cells divide and elongate in the apical meristem, otherwise known as the growing tips of twigs. The second step of growth is width, and this is the point at which the growth rings are shaped. The cells divide in the lateral meristem known as vascular cambium, or all the more just as the cambium. The cambium is a thin ring, just a single cell wide. Cambium division makes xylem (wood cells) and phloem cells (bark cells), however it generally produces more xylem than phloem cells.

The cambium divides in two directions. Its first direction is parallel to the circumference of a tree. The cambium pushes a cell out and makes the breadth of the tree bigger. This is called periclinal division. After the cambium pushes out a cell, it needs to interface those cells together to frame a ring. This is called anticlinal division and it partitions at a right angle to the circumference of a tree. Both periclinal and anticlinal division happens a few times in a single growing season. This pushes the cambium outward, growing the tree's diameter. As the cambium divides and produces more xylem cells, defects become overgrown with the new wood cells.

Annual growth rings are clearly used for deciding the age of a tree. This is for the most part utilized on trees in temperate forests. Impacts of trees affected overtime, by fires, other fallen trees, defoliation by bugs, or even poor or excess developing seasons can be seen in the growth rings. For instance, in years of excess growth, latewood and early wood will be bigger in comparison with other years, and vice versa for years of drought. These things can likewise assist with dating a tree. Assuming there was some catastrophic event that happened in the area of the tree, that tree would show those occasions, assisting with placing a date on when the tree grew.

***Corresponding author.** Olga Turkovskaya, E-mail: turkovskaya@gmail.com