Research & Reviews: Journal of Botanical Sciences ISSN: 2320-0189

Note on Economic Importance of Stem

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Commentary Article

Received: 06-Apr-2022, Manuscript No. JBS- 22- 61901; **Editor assigned:** 11- Apr -2022, PreQC No. JBS- 22- 61900 (PQ); **Reviewed:** 22- Apr -2022, QC No. JBS- 22- 61901 **Revised:** 29- Apr-2022, Manuscript No. JBS- 22- 61901 (R); **Published:** 09-May-2022, DOI: 10.4172/ 2320-0189.11.4.004

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ABOUT THE STUDY

A vascular plant's stem is one of two primary structural axes, the other being the root. It maintains leaves, flowers, and fruits, transfers water and dissolved substances between the roots and shoots in the xylem and phloem, stores nutrients, and generates new living tissue in the xylem and phloem. In most cases, the stem is split by nodes and internodes: one or more leaves, as well as buds that can grow into branches (with leaves, conifer cones, or inflorescences), are stored in the nodes (flowers). From the nodes, adventurous roots can be generated. The internodes are the links between the nodes. The terms "shoots" and "stems" are frequently interchanged; "shoots" refers to new plant development that includes stems as well as other structures such as leaves or flowers.

Stems have four main functions which are support for leaves, flowers, and fruits, as well as their elevation. The stems maintain the leaves in the sun while also providing a home for the plant's blooms and fruits. Fluid transport will be in between xylem and phloem and between roots and branches. Nutritional storage, the growth of new living tissue. Plant cells have a usual lifetime of one to three years. Meristems are cells found in stem cells that produce new live tissue every year. Xylem and phloem are two pipe-like tissues found in stems. The transpiration pulls, capillary action, and root pressure all work together to transfer water through the xylem tissue. Sieve tubes and their partner cells make up the phloem tissue. The cambium, a tissue that splits to generate xylem and phloem cells, separates the two tissues.[1]

Thousands of species have commercial value in their stems. Potato and taro are two main staple crops that rely on stems. Sugar comes mostly from sugarcane stems. The sap of maple trees is used to make maple sugar. *Asparagus*, bamboo shoots, cactus pads or nopalitos, kohlrabi, and water chestnut are all vegetables that come from stems. Cinnamon is a spice made from the bark of a tree trunk. Gum arabic comes from the trunks of *Acacia senegal* trees, and it's a popular culinary ingredient. The major ingredient in chewing gum is chicle, which comes from the trunks of the chicle tree. Quinine from the bark of cinchona trees, camphor distilled from the wood of a

tree in the same genus as cinnamon, and other medicines derived from stems include and the muscle relaxant curare from the bark of tropical vines.[2]

Buildings, furniture, boats, aeroplanes, waggons, car parts, musical instruments, sports equipment, railroad ties, utility poles, fence posts, pilings, toothpicks, matches, plywood, coffins, shingles, barrel staves, toys, tool handles, picture frames, veneer, charcoal, and firewood are just a few examples of how wood is used. Paper, paperboard, cellulose sponges, cellophane, and other essential polymers and textiles, such as cellulose acetate and rayon, are all made from wood pulp. Paper, structures, furniture, boats, musical instruments, fishing poles, water pipes, plant stakes, and scaffolding are just a few of the uses for bamboo stems. Palm tree trunks and tree ferns are frequently utilised for development.[3]

Reed stems are a significant construction material in some locations for thatching. Tannins are extracted from the wood of specific trees, such as quebracho, and used to make leather. The bark of the cork oak is used to make cork. *Hevea brasiliensis* trunks are used to make rubber. Rattan is formed from the stems of tropical vining palms and is used to make furniture and baskets. Flax, hemp, jute, and ramie are among the stem fibres used in textiles and rope. Papyrus stems were used to make the first paper by the ancient Egyptians. Amber is a type of jewellery made from fossilised sap from tree trunks, and it may include ancient creatures. Turpentine and rosin are made from coniferous tree resins. Tree bark is frequently used as mulch and in container plant growth medium. It can also serve as a natural home for lichens. Some ornamental plants, such as white bark of paper birch, twisted branches of corkscrew willow, and Harry Lauder's walking stick (*Corylus avellana* 'Contorta'), are planted primarily for their appealing stems.

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