

Ramial chipped wood

Ramial Chipped Wood (RCW) is a wood product used in cultivation for mulching, fertilizing, and soil enrichment.

The raw material consists of the twigs and branches of trees and woody shrubs, preferably deciduous, including small limbs up to 7 cm. ($2\frac{3}{4}$ in.) in diameter. It is processed into small pieces by chipping, and the resulting product has a relatively high ratio of cambium to cellulose compared to other chipped wood products. Thus, it is higher in nutrients and is an effective promoter of the growth of soil fungi and of soil-building in general. The goal is to develop an airy and spongy soil that holds an ideal amount of water and resists evaporation and compaction, while containing a long-term source of fertility. It can effectively serve as a panacea for depleted and eroded soils.

The raw material is primarily a byproduct of the hardwood logging industry, where it was traditionally regarded as a waste material. Research into forest soils and ecosystems at Laval University (Quebec, Canada) led to the recognition of the value of this material and to research into its uses. Originally termed BRF (French: "bois raméal fragmenté" or "chipped branch-wood".)

Usable types of wood

The wood from heartwood and branches larger than 3 inches in diameter is not desirable due to its high C/N ratio (approximately 600:1), which requires a lot of nitrogen in its decomposition. Only the sapwood and young branches (under 3 inches in diameter) from the various noble hardwoods (hard woods high in tannins such as oak, chestnut, maple, beech and acacia) is used as their heartwood is high in tannins.

Conifers are avoided because of their specific lignin (10 to 20%, however, they are tolerated in combination with deciduous RCW). The resin has no aggradation character because it consists of derivatives of diterpenes (resin part) and monoterpenes (part turpentine). Note that only the genera *Pinus*, *Picea*, *Larix* and *Pseudotsuga* have resin canals. The cedars are characterized by their constituents of the heartwood toxic to microorganisms, tropolone derivatives (thujaplicines) phenolic nature, and are therefore to be avoided in the production of ramial chipped wood.

The acidification of soils by RCW has not been observed. In contrast, acidic soils tend to have their pH raised by RCW applications.

While some species, such as Black Locust and Black Walnut, bear heartwood containing resins that make them resistant to rot; in practice their RCW decomposes well on a moist soil. Even Larch, which resists decomposition and is also a gymnosperm, promoted successful forest regeneration in Quebec and was found to be the best of the gymnosperms for use in RCW (even better than some hardwoods).

Composition of RCW

Because they are the most exposed part of the tree to the light, and the most actively growing, young branches (and young trees) used in RCW are from the richest parts of the trees. They contain 75% of the minerals, amino acids, proteins, phytohormones and biological catalysts (enzymes) found in the tree.

References

- Lemieux, G. & Lapointe R. A. "Le bois raméal et les mécanismes de fertilité du sol"; Laval University, Quebec, Canada; 1986; 17pp; ISBN 2-550-2138-1 - the seminal paper that introduced the term
- Regenerating soils with ramial chipped wood ^[1]

References

- [1] http://www.sbf.ulaval.ca/brf/regenerating_soils_98.html
-

Article Sources and Contributors

Ramial chipped wood *Source:* <http://en.wikipedia.org/w/index.php?oldid=592698828> *Contributors:* Abrahami, Ann O'nyme, Bdiscoe, C-ray, Casablanca2000in, Chowbok, DASonnenfeld, Jengod, John of Reading, LilHelpa, Mrnatural, Sting au, Upnewyork, Yousou, 2 anonymous edits

License

Creative Commons Attribution-Share Alike 3.0
[//creativecommons.org/licenses/by-sa/3.0/](http://creativecommons.org/licenses/by-sa/3.0/)
