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Eucalyptus globulus ramial chipped wood usage as a natural fertilizer in agroforestry orchards

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Several studies show that the ramial wood chip (RWC) usage in agriculture land increases soil fertility, crop yield, soil biodiversity, as well as increasing humidity in the upper soil layer. *E. globulus* is a fast growing species commonly used for pulp production. The growth rate, resistance to drought, and the ability to regrow after coppicing and pruning, makes it an interesting species when considering the production of RWC.

Grown in average quality sites, it is possible to remove up to 20% of the tree leaf area by pruning, without negatively affecting the production of the solid trunk wood. In highly productive sites this value can go up to 40% of the leaf area of the tree crown. Only removal of 60% or more of the tree leaf area (i.e. heavy pruning) will reduce growth of the trunk. In a diverse agroforestry farm in Portugal, E. globulus trees were planted mostly as windbreaks, at very low densities, to create a microclimate, generate RWC for soil enrichment, and to be used as natural trellises for annual crops, vines and other climbing crops. In this agroforestry system E. globulus and other fast growing trees are annually pruned, reducing tree crown anywhere from a third to a half. These abundant pruning residues are then easily turned into RWC (using a wood chipper), providing an easy and cheap soil enrichment which is used in the agroforestry plot (orchard). This technique may also be used with other fast growing species.

References and links:

Pinkard, E.A.(2003)Physiological and growth responses related to pattern and severity of green pruning in young Eucalyptus globulus. *Forest Ecology and Management*.182(1-3):231-245. https://doi.org/10.1016/S0378-1127(03)00046-X

Figure 1. Cutting down a young eucalyptus tree. Credits: Paula Soares.

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This project has received funding from the European Union´s Horizon 2020 research and innovation programme under grant agreement No 727872