



The role of the implementation angle of cuttings of *Phyllanthus sellowianus* as a reference for a soil protection measure against surface erosion

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Cutting plantation is a very common method of soil bioengineering techniques. The potential of vegetative reproduction is used to install a vegetation cover on eroded slopes to prevent surface erosion. The development of above and below biomass from parts of the stock plant in a very short time and the fast and easy propagation are one of the most important advantages of this soil bioengineering type. Several handbooks (Schiechl, 1992; Florineth, 2004 and Zeh, 2007) suggest potential plants for vegetative reproduction and describe the procedure of plantation in detail. It is recommended that the cuttings are not driven vertically into the ground. A flat implementation angle guarantees a more uniform rooting of the cutting part driven into the soil, however there are no systematically investigations of the impact of the implementation angle on the biomass performance and consequently on the performance as a surface erosion protection measure.

This paper shows results from field investigations focusing on the problem of the impact of the implementation angle of cuttings. In sum 75 specimens of the species of *Phyllanthus sellowianus*. The plant species was recommended as a native potential soil bioengineering plant by Sutili (s. Sutili, 2006). The cuttings were planted with an average length of 50 cm and diameter of 2 cm. The implementation angle differences between 90 (vertical) 45 and 10 degree. Two months after plantation all plants were excavated and the relevant plant data sets were collected in order to analyse the biomass performance. The field investigations are part of an integrated research project of the University of Natural Resources and Applied Life Sciences, Vienna and the Federal University of Santa Maria, Rio Grande do Sul – Brazil.