



The performance of cuttings of *Salix humboldtiana* depending on the ratio of parts driven into the soil / emerging above surface

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Whenever plants are used for soil bioengineering techniques as a part of civil engineering structures, they have to fulfil specific biological and technical qualification. The knowledge of these kinds of qualification is a precondition of successful soil bioengineering applications. In Central Europe the reference books are based on empirical applications of soil bioengineering techniques, however fundamental civil engineering standards are still missing. This is particularly true for areas, such as South America, where the application of soil bioengineering techniques is a young civil engineering discipline. Sutili has started research work systematically a few years ago in order to identify potential native available plant species for soil bioengineering techniques in Rio Grande do Sul, Brazil. This paper shows some results from empirical research work focusing on problem of the application of cuttings: Is the performance of below and above biomass production subject to the proportion of soil cover In sum 110 specimens of *Salix humboldtiana* were used for field investigations. All cuttings were implemented with an angle of 45 degree under the same soil conditions and with a length of 50 cm. The variations of the ratio were 1:1 (25 cm driven into the soil and 25 emerging above surface), 1:2, 1:4, 1:8 and 1:16. After four months the plants were excavated and the data sets of all cuttings were collected and statistically analysed.

The investigations are part of an integrated research project between the University of Natural Resources and Applied Life Sciences, Vienna and the Federal University of Santa Maria, Rio Grande do Sul – Brazil.