

## **Biotechnical performance of vegetal species in slope conservation in Cruz Alta, RS, Brazil**

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The aim of this work was the evaluation of biotechnical performance of different vegetal species growth in the slope soil conservation and reforest (revegetate). The study was performed with oxic soil talus, in Cruz Alta – RS, Brazil (28°23'28.14" S and 53°22'25.61" W) and began in January 2010. The sow treatments employed were: 1) cuttings of *Ateleia glazioveana*; 2) cuttings of *Pyrostegia venusta*; 3) seedlings of *Baccharis trimera*; 4) Seedlings of *Cynodom plectostachyus*; 5) blank, no sow. The evaluated parameters were: plant survival ratio (%); vegetal covered percentage; natural revegetation (plants/m<sup>2</sup>); the slope soil level reduction (cm); and water and soil runoff. *C. plectostachyus* and *B. trimera* afforded considerable higher survival (92% and 78.5%, respectively) and vegetation cover of the slope (99.6% and 82.9%) than other species. The natural revegetation showed an increase according to the ground above the slope (146.9 plants/m<sup>2</sup>) compared with the slope ramp (22.1 plants/m<sup>2</sup>). Moreover, *C. plectostachyus*, *A. glazioveana*, *P. venusta*, *B. trimera* and *C. plectostachyus* treatments showed 34.9, 28.6, 23.0 and 21.0 plants/m<sup>2</sup>, respectively, when compared with the blank (2.5 plants/m<sup>2</sup>) in the slope ramp region. Furthermore, the sow line regions gave 91.2 plants/m<sup>2</sup>) whereas the regions among lines afforded 8.6 plants/m<sup>2</sup>. Additionally, *C. plectostachyus* showed soil average drawdown profile decrease of 12.8 mm after 360 days after planting, and *A. glazioveana* reached 16.9 mm after 540 days according to the blank (34.0 mm). Considering the period of 60 to 360 days, it was observed significant differences in the soil loss estimative and reduction percentage compared to blank were: Blank 127.9 ton/ha/year; *A. glazioveana*, 117.9 ton/ha/year (-8%); *P. venusta*, 116.3 ton/ha/year (-9%); *B. trimera*, 106.7 ton/ha/year (-17%); and *C. plectostachyus*, 73.2 ton/ha/year (-43%). Thus, *C. plectostachyus* showed the best survival and vegetal coverage producing significant reduction of soil loss by surface runoff in slope. The sow species favored the natural revegetation in slope ramp region. The species *A. glazioviana*, *P. venusta* and *B. trimera* might achieve soil loss control comparable to the already known *Cynodom plectostachyus* control.