Figures

Figure 1: Plantation and experimental design.
Figure 2: Illustration of the three planting material types.
Figure 3: Trenches made with a mechanical shovel to determine the maximum rooting depth.
Figure 4: Equations used to calculate the root anchorage indexes, $A_n$: angle between the main lateral roots of the upslope side and the line separating upper and lower slope, $d_n$: diameter of the corresponding structural roots (cm), $L$: length of the root, $P$: maximum rooting depth (cm).
Figure 5: Maximum height (cm) of whips, cuttings, and bareroots on topsoil and mineral soil at planting (spring 2013) and at the end of each growing season from 2013 to 2016. P: Spring; A: autumn. Mean ± SE, N=75. Mean values that differed significantly at P < 0.05 are marked with different letters at each date, a> b.
Figure 6: Picture showing herringbone root system of hybrid poplar planted on waste rock slopes
Figure 7: Comparison of root anchorage indexes $I_1$ (a) and $I_2$ (b) for the three types of planting material (whips, cuttings, and bareroots) on topsoil and mineral soil, after four growing seasons (2016). Mean ± SE, N = 3. Mean values that differed significantly at $P < 0.05$ are marked with different letters, a > b.
Figure 8: Comparison of the maximum resistance force for the three types of planting material (whips, cuttings, and bareroots) on topsoil and mineral soil, after four growing seasons (2016). Mean ± SE, N = 3. Mean values that differed significantly at P < 0.05 are marked with different letters, a > b.
Figure 9: Effect of treatments (Topsoil: whips, cuttings, and bareroots; Mineral soil: whips, cuttings, and bareroots) on the uprooting force according to displacement after four growing seasons (2016). N = 3.