

Influence of slope incline on the ejection of two-phase soil splashed material

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Introduction

Supporting Information provides data for statistical analysis of the results obtained in experiments. The results were subjected to analysis in STATISTICA 12 software in order to determine the statistical significance of the differences between the different soil samples and slope angles. The calculations were based on multifactorial analysis of variance (ANOVA) after checking the normality of the distributions (Shapiro-Wilk test). The statistically significant differences were determined by the post hoc test (Tukey's HSD test) at a significance level $\alpha = 0.05$ (Figures S1 to S10). In addition, ω^2 value calculations were performed which, based on the Cohen scale, indicated which factors most strongly influenced the individual results (Table S1).

Table S1. Values of ω^2 indicating to what extent individual factors or groups of factors influenced the results of the investigated quantities.

Moistened soil samples					
Factors	Total ejected mass (T)	Mass of soil (M_s)	Mass of water (M_w)	Mass proportions in upslope and downslope	Proportions of ejected material (soil/water)
soil texture	0.819	0.827	0.726	0.493	0.425
slope (inclination)	-0.003	0.009	0.011	-0.002	-0.001
direction (upslope/downslope)				0.196	0.169
material (ejected soil/water)					0.037
soil * slope	0.087	0.044	0.124	0.052	0.046
soil * direction				0.091	0.079
slope * direction				0.041	0.036
soil * material					0.002
slope * material					0.007
direction * material					0.026
soil * slope * direction				0.004	0.005
soil * slope * material					0.003
soil * direction * material					0.000
slope * direction * material					0.011
soil * slope * direction * material					0.002
Dry soil samples					
Factors	Total ejected mass (T)	Mass of soil (M_s)	Mass of water (M_w)	Mass proportions in upslope and downslope	Proportions of ejected material (soil/water)
soil texture	0.078	0.131	-0.007	0.011	0.007
slope (inclination)	0.674	0.545	0.614	0.090	0.062
direction (upslope/downslope)				0.651	0.451
material (ejected soil/water)					0.133
soil * slope	-0.016	-0.013	0.007	-0.002	-0.001
soil * direction				0.004	0.003
slope * direction				0.183	0.127
soil * material					0.008
slope * material					0.012
direction * material					0.078
soil * slope * direction				0.001	0.001
soil * slope * material					0.000
soil * direction * material					0.004
slope * direction * material					0.025
soil * slope * direction * material					0.001

Labels

no effect

low effect

medium effect

high effect

N/A

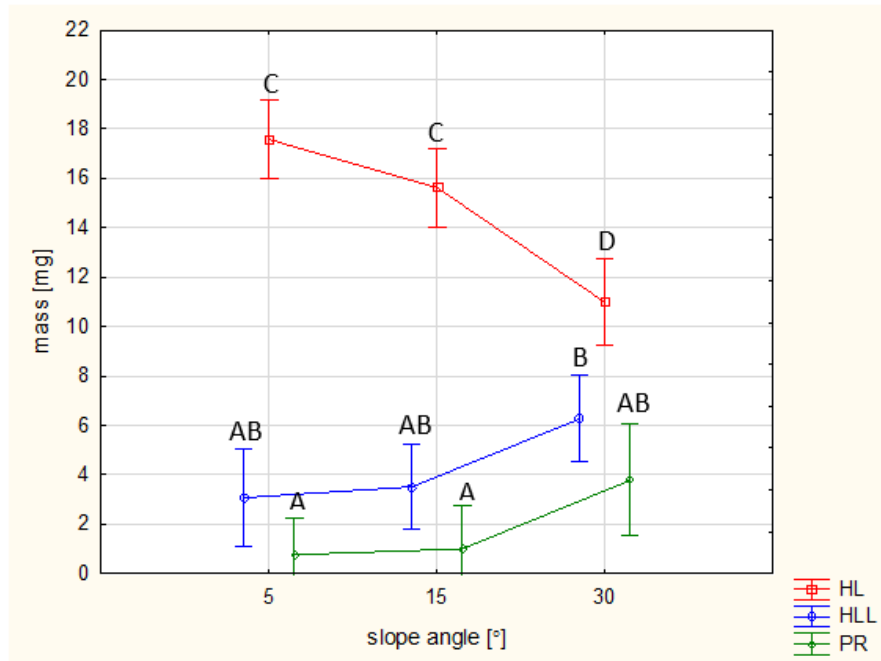


Figure S1. Total ejected material on moistened soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error, and the letters refer to the statistical comparison (the same letters – no statistically significant differences).

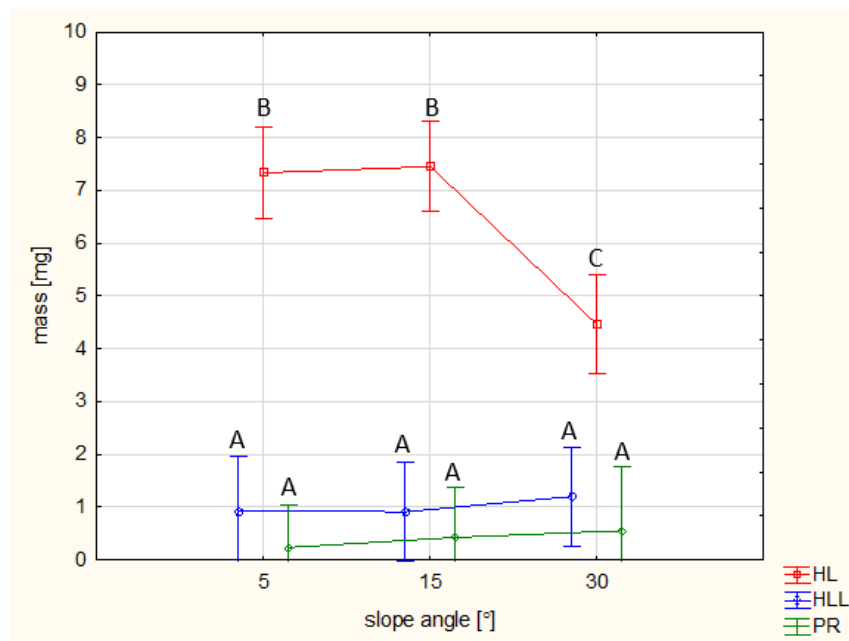


Figure S2. Mass of ejected solid phase (soil) on moistened soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars

represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences).

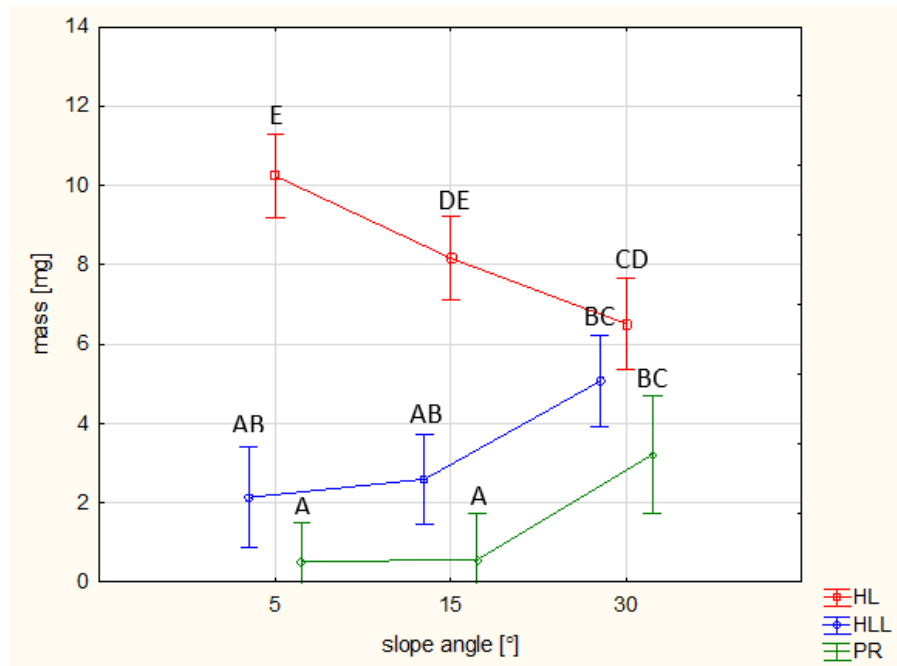


Figure S3. Mass of ejected liquid phase (water) on moistened soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The

bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences).

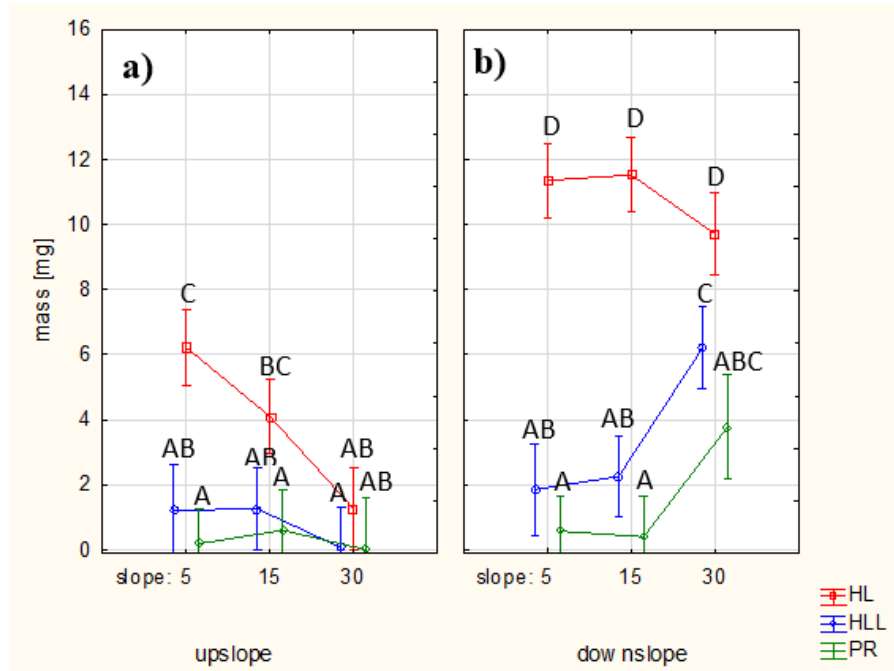


Figure S4. Mass of total ejected material in upslope (a) and downslope (b) directions on moistened soil samples with different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences). The statistical analysis allows the comparison of both graphs.

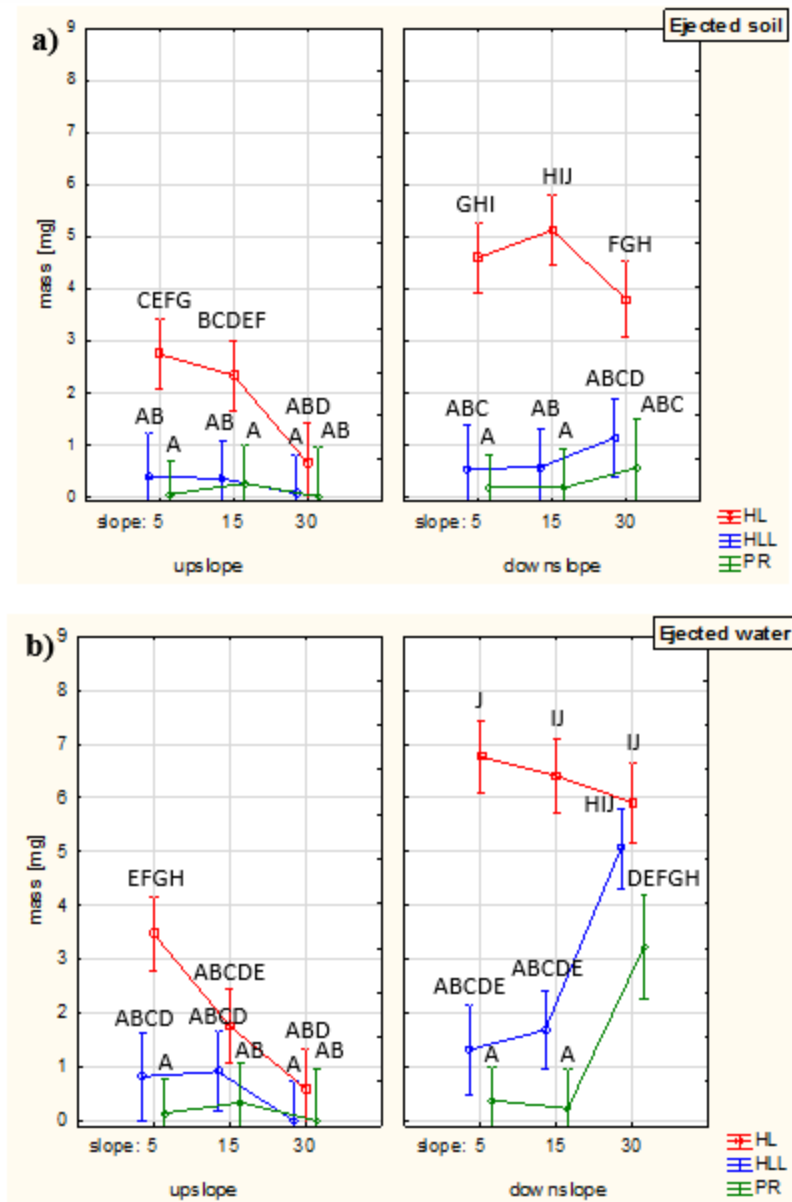


Figure S5. Mass of separate ejected soil (a) and ejected water (b) in upslope and downslope directions on moistened soil samples with different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences). The statistical analysis allows the comparison of all visible graphs.

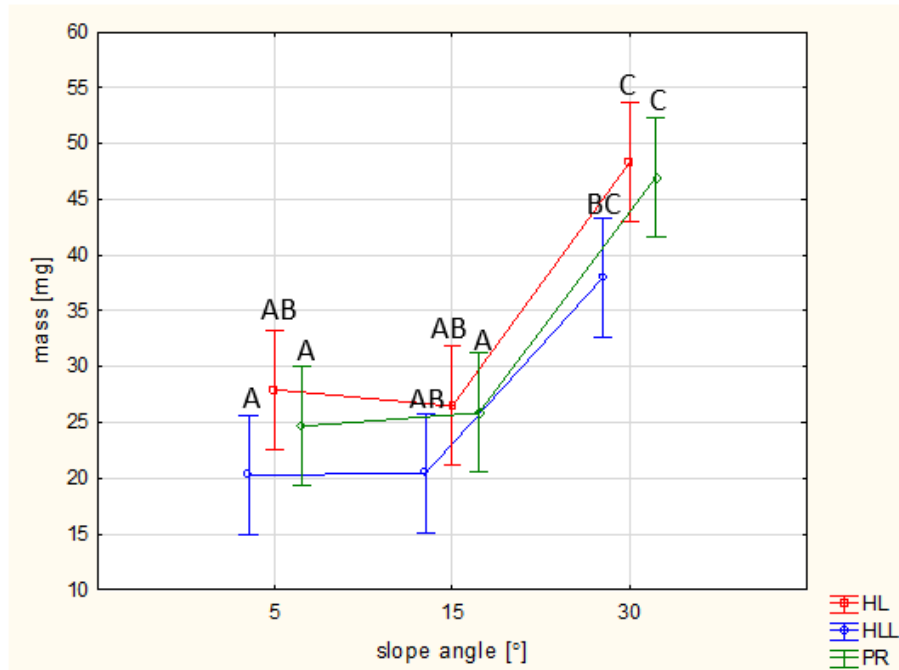


Figure S6. Total ejected material on dry soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences).

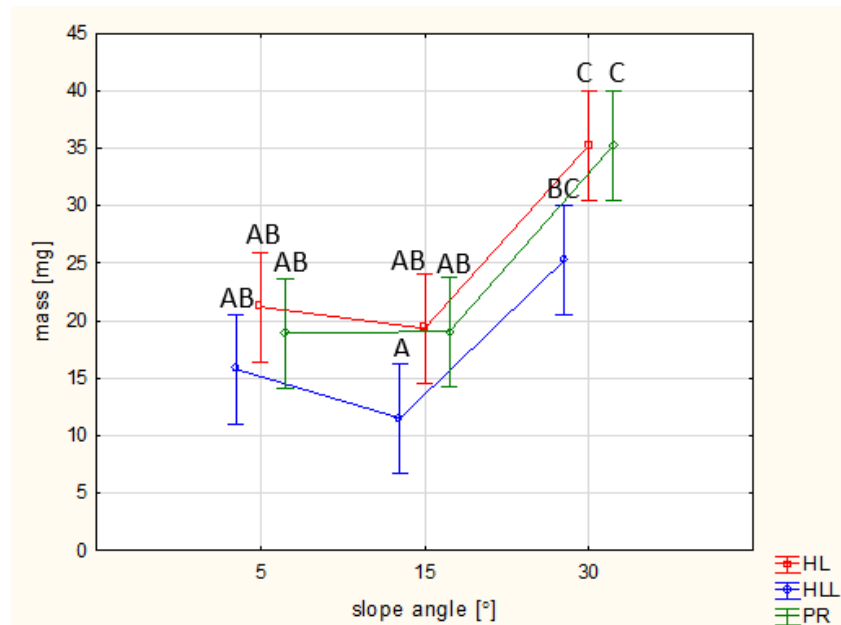


Figure S7. Mass of ejected solid phase (soil) on dry soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences).

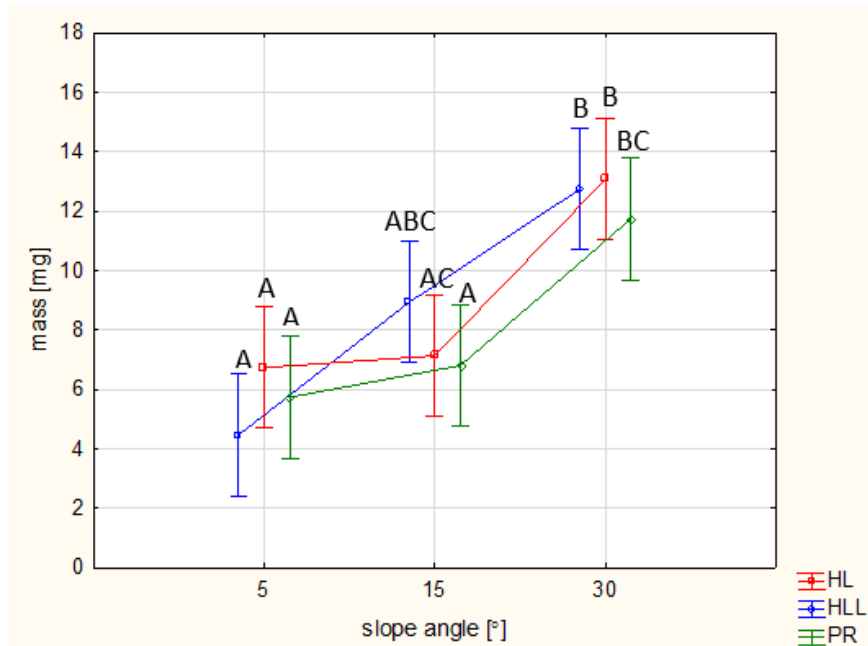


Figure S8. Mass of ejected liquid phase (water) on dry soil samples for different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences).

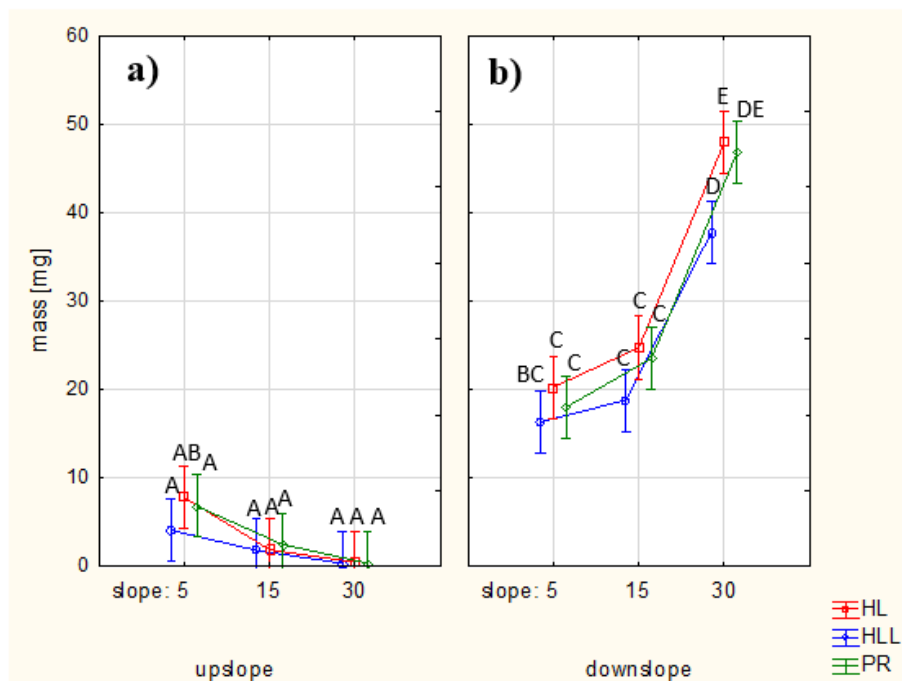


Figure S9. Mass of total ejected material in upslope (a) and downslope (b) directions on dry soil samples with different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences). The statistical analysis allows the comparison of both graphs.

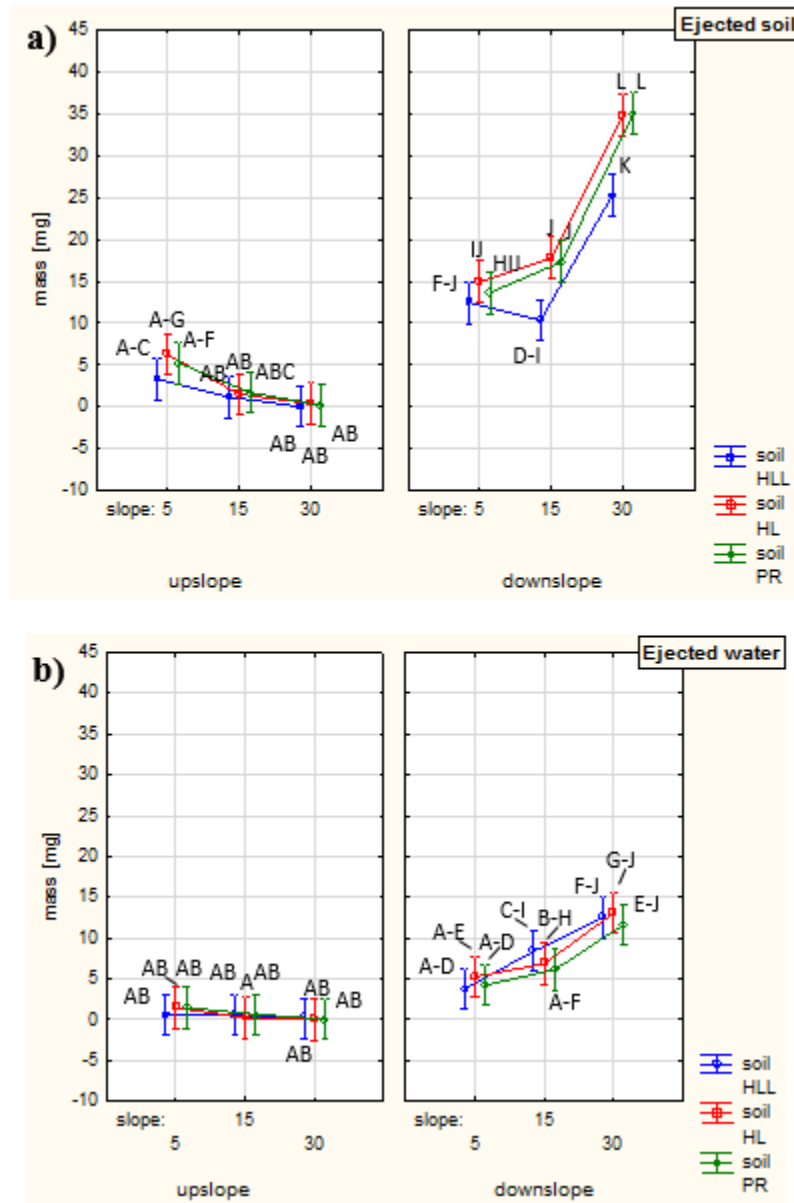


Figure S10. Mass of separate ejected soil (a) and ejected water (b) in the upslope and downslope directions on dry soil samples with different slope angles. Symbols of soils: HL – *Haplic Luvisol*, HLL – *Haplic Luvisol Loamic*, PR – *Protic Regosol*. The bars represent standard error and letters refer to the statistical comparison (the same letters – no statistically significant differences). The statistical analysis allows the comparison of all visible graphs.