Table S1. Properties of soil used for plant cultivation. The analysis were performed according to the Polish standards and procedures.

Attribute	Value	Analytical Method	Analytical Procedure
Acidity in KCl (pH)	5.7	potentiometric	PN-ISO 10390:1997
Organic matter [%]	77.3	weight	PB 30 ed. 3 (10 May 2013)
Total N [%]	2.57	titrimetric (Kjeldahl method)	PB 49 ed. 2 (1 February 2007)
Available nutrients [mg kg^{-1} soil]			
P (P_2O_5)	892	spectrophotometric	PN-R-04023:1996
K (K_2O)	675	atomic emission spectroscopy	PN-R-04022:1996+Az1:2002
Mg	754	atomic absorption spectroscopy	PN-R-04020:1994+Az 1:2004 p. 4
Mn	139	atomic absorption spectroscopy	PB 25 ed. 1 (14 June 2004)
Cu	<2.5	atomic absorption spectroscopy	PB 25 ed. 1 (14 June 2004)
Zn	11.1	atomic absorption spectroscopy	PB 25 ed. 1 (14 June 2004)
Fe	5438	atomic absorption spectroscopy	PN-R-04021:1994 p. 4
Ca	2255	atomic emission spectroscopy	PB 04 ed. 2 (1 March 2019)
Na	62.8	atomic emission spectroscopy	PB 04 ed. 2 (1 March 2019)
B	4.21	spectrophotometric	PN-R-04018:1993 p. 4
Contaminants [mg kg^{-1} soil]			
Cr	<5.0	atomic absorption spectroscopy	PB 21 ed. 4 (1 March 2018)
Ni	<4.0	atomic absorption spectroscopy	PB 21 ed. 4 (1 March 2018)

Table S2. Parameters derived from the OJIP transient used in this study, formulas of their calculation and definitions. The descriptions of parameters follows Wala et al. (2020).

OJIP parameter	Definition
F_0 (=F_O)	Fluorescence intensity at O-step (at 50 μs) (=Minimal fluorescence intensity)
F_J	Fluorescence intensity at J-step (at 2 ms)
F_I	Fluorescence intensity at I-step (at 60 ms)
F_M (=F_P)	Fluorescence intensity at P-step (at 1000 μs) (=Maximal fluorescence intensity)
F_V	Maximal variable fluorescence
V_J	Relative variable fluorescence at J-step (2 ms)
V_I	Relative variable fluorescence at I-step (60 ms)
F_V/F_M	Maximum quantum yield of primary PSII photochemistry
M_0	Approximated initial slope of the fluorescent transient
Area	Area between fluorescence curve and F_M (background subtracted)
S_M	Standardized area above the fluorescence curve between F_0 and F_M
N	Number of Q_A redox turnovers until F_M is reached
φ_{E0}	Quantum yield for electron transport from Q_A to plastoquinone at t = 0
PI_{ABS}	Performance index of electron flux from PSII based to intersystem acceptors
ABS/RC	Photon flux absorbed by PSII antenna chlorophyll per RC at t = 0
TR_0/RC	Trapping flux leading to Q_A reduction per RC at t = 0
ET_0/RC	Electron transport flux per RC at t = 0
DI_0/RC	Dissipated energy flux per RC at t = 0

Table S3. Results of two-way ANOVA (F values) examining the effects of the studied factors on measured traits of *Pisum sativum* L. plants subjected to different seed coating treatments.

Measured Trait	Studied factor (BA) Binding Agent[a] (df = 3)	(D) Dolomite[b] (df = 1)	BA x D (df = 3)
Growth-related			
Root FW	1.5 ns	52.5 ***	0.6 ns
Shoot FW	2.3 ns	61.3 ***	0.8 ns
Root DW	1.8 ns	43.6 ***	0.7 ns
Shoot DW	2.2 ns	53.3 ***	0.7 ns
Shoot:Root FW ratio	0.2 ns	0.1 ns	1.9 ns
Shoot:Root DW ratio	0.1 ns	0.0 ns	1.0 ns
RGR 9-14 d	15.4 ***	0.9 ns	3.3 *
RGR 14-21 d	5.1 **	0.1 ns	3.7 *
Stipule-related			
Stipule FW	1.2 ns	61.4 ***	1.0 ns
Stipule DW	0.1 ns	35.6 ***	1.9 ns
Stipulearea	1.3 ns	55.2 ***	1.1 ns
SLA	2.9 ns	2.6 ns	1.5 ns
Chlorophyllcontent	4.21 *	2.1 ns	7.5 **
F_V/F_M	12.5 ***	0.6 ns	2.9 *
Root element content			
Al	0.6 ns	0.8 ns	5.3 **
Ca	4.2 *	3.5 ns	4.1 **
Cr	1.3 ns	5.5 ns	1.0 ns
Cu	0.4 ns	3.3 ns	2.7 ns
Fe	0.8 ns	4.4 *	4.4 *
K	1.8 ns	13.7 ***	7.5 ***
Mg	2.6 ns	52.5 ***	3.0 *
Mn	2.6 ns	3.0 ns	13.0 ***
Mo	2.8 ns	1.6 ns	1.8 ns
Na	4.7 *	32.3 ***	13.1 ***
Ni	0.7 ns	2.8 ns	0.2 ns
Sn	9.8 ***	0.5 na	0.5 ns
Sr	10.8 ***	37.9 ***	8.9 ***
Ti	4.3 *	3.6 ns	5.1 ***
Zn	14.6 ***	1.5 ns	0.5 ns
Shoot element content			
Al	4.2 *	2.3 ns	4.3 ns
Ca	1.2 ns	0.0 ns	0.2 ns
Cr	6.6 ***	0.3 ns	0.9 ns
Cu	3.1 *	4.5 *	0.7 ns
Fe	1.3 ns	0.6 ns	0.5 ns
K	1.8 ns	6.1 *	1.3 ns
Mg	0.7 ns	0.2 ns	0.5 ns
Mn	0.8 ns	0.3 ns	0.8 ns
Mo	3.6 *	5.4 *	0.9 ns
Na	7.5 ***	1.2 ns	1.1 ns
Ni	0.3 ns	0.0 ns	1.2 ns
Sn	50.3 ***	0.6 ns	0.6 ns
Sr	1.8 ns	0.5 ns	0.3 ns
Ti	5.3 **	1.1 ns	1.0 ns
Zn	5.0 **	9.2 **	1.1 ns

[a] bound by water, bovine collagen, fish collagen of PHMB; [b] with or without addition of dolomite dust. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$; ns–not significant ($p > 0.05$).

Table S4. Results of three-way ANOVA (F values) examining the effects of the studied factors on final emergence percentage (FEP), index of emergence velocity (IEV) and index of emergence synchrony (IES) of *Pisum sativum* L. seeds subjected to different seed coating treatments.

Studied Factor	df	Measurement		
		FEP	IEV	IES
(BD) Burial Depth[a]	3	23.4 ***	42.2 ***	55.3 ***
(BA) Binding Agent[b]	3	1.4 ns	2.2 ns	3.0 *
(D) Dolomite[c]	1	7.2 **	11.3 **	14.1 ***
BD × BA	9	0.6 ns	0.9 ns	2.6 **
BD × D	3	0.8 ns	1.1 ns	1.1 ns
BA × D	3	1.5 ns	2.8 *	5.9 ***
BD × BA × D	9	0.4 ns	0.7 ns	0.9 ns

[a] depth of 0, 2, 4 or 6 cm; [b] bound by water, bovine collagen, fish collagen of PHMB; [c] with or without addition of dolomite dust. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$; ns–not significant ($p > 0.05$).

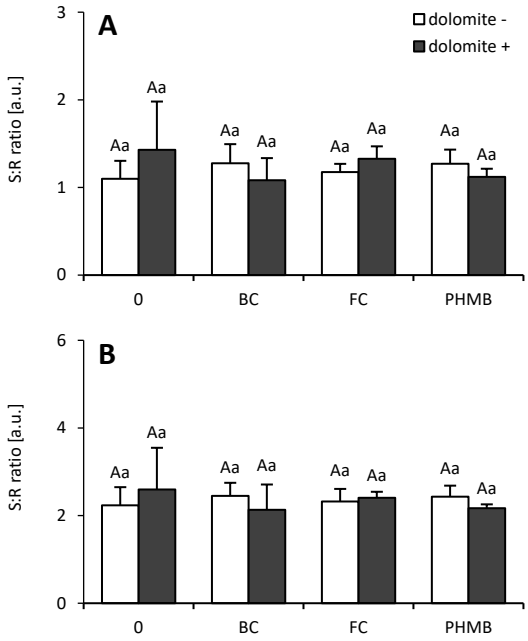

Figure S1. Fresh weight (**A**) and dry weight (**B**) shoot:root (S:R) ratio of *Pisum sativum* L. plants subjected to different seed coating treatments. Values followed by different upper-case letters within the given binding agent treatment (0, BC, FC or PHMB) are significantly different ($p < 0.05$); Student's test (n = 4). Values followed by different lower-case letters within the given dolomite treatment (dolomite – or dolomite +) are significantly different ($p < 0.05$); ANOVA followed by Tukey's post-hoc test (n = 4).

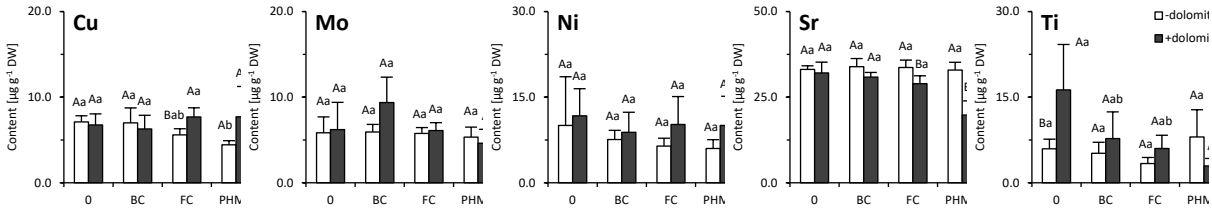

Figure S2. Elemental composition (Cu, Mo, Ni, Sr, Ti) of roots of *Pisum sativum* L. plants subjected to different seed coating treatments. Values followed by different upper-case letters within the given binding agent treatment (0, BC, FC or PHMB) are significantly different ($p < 0.05$); Student's test (n = 4). Values followed by different lower-case letters within the given dolomite treatment (dolomite - or dolomite +) are significantly different ($p < 0.05$); ANOVA followed by Tukey's post-hoc test (n = 4).

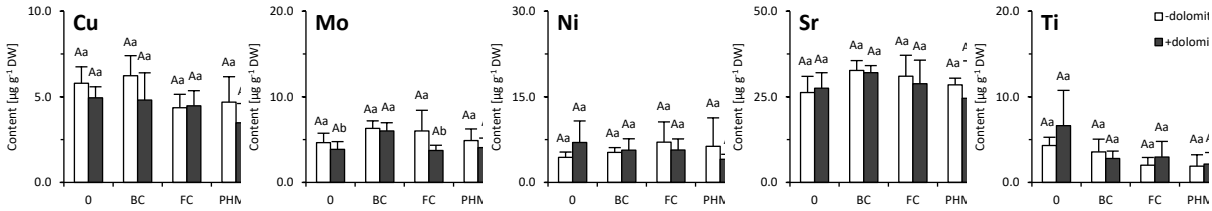

Figure S3. Elemental composition (Cu, Mo, Ni, Sr, Ti) of shoots of *Pisum sativum* L. plants subjected to different seed coating treatments. Values followed by different upper-case letters within the given binding agent treatment (0, BC, FC or PHMB) are significantly different ($p < 0.05$); Student's test ($n = 4$). Values followed by different lower-case letters within the given dolomite treatment (dolomite - or dolomite +) are significantly different ($p < 0.05$); ANOVA followed by Tukey's post-hoc test ($n = 4$).