Supporting Information to:

The importance of calcium and amorphous silica for Arctic soil CO₂ production

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Fig. S1: CO₂ production for the soil from Siberia Chersky C1, NE-Russia after 4 weeks (A+B) and 8 weeks (C+D) under drained (A+C) and waterlogged (B+D) conditions. Each square represents a treatment (n=5) with Si (+0, +3, +6, and +10 mg g⁻¹ DW) and Ca (+0, +5, +10, and +15 mg g⁻¹ DW). Colour represents differences between the treatment CO₂ production in comparison to the control treatment, with green-blue showing a decreased CO₂ production and red showing an increased CO₂ production in comparison to the control treatment.
Fig. S2: CO₂ production for the soil from Siberia Chersky C2, NE-Russia after 8 weeks (A+B) and 12 weeks (C+D) under drained (A+C) and waterlogged (B+D) conditions. Each square represents a treatment (n=5) with Si (+0, +3, +6, and +10 mg g⁻¹ DW) and Ca (+0, +5, +10, and +15 mg g⁻¹ DW). Colour represents differences between the treatment CO₂ production in comparison to the control treatment, with green-blue showing a decreased CO₂ production and red showing an increased CO₂ production in comparison to the control treatment.
Fig. S3: CO₂ production for the soil Ca1 from the Canadian after 8 weeks (A+B) and 12 weeks (C+D) under drained (A+C) and waterlogged (B+D) conditions. Each square represents a treatment (n=5) with Si (+0, +3, +6, and +10 mg g⁻¹ DW) and Ca (+0, +5, +10, and +15 mg g⁻¹ DW). Colour represents differences between the treatment CO₂ production in comparison to the control treatment, with green-blue showing a decreased CO₂ production and red showing an increased CO₂ production in comparison to the control treatment.
**Fig. S4**: CO₂ production for the soil from the moist acidic tundra (MAT), Alaska after 4 weeks (A+B), 8 weeks (C+D) and 12 weeks (E+F) under drained (A+C+E) and waterlogged (B+D+F) conditions. Each square represents a treatment (n=5) with Si (+0, +3, +6, and +10 mg g⁻¹ DW) and Ca (+0, +5, +10, and +15 mg g⁻¹ DW). Colour represents differences between the treatment CO₂ production in comparison to the control treatment, with green-blue showing a decreased CO₂ production and red showing an increased CO₂ production in comparison to the control treatment.
**Fig. S5:** CO₂ production for the soil from the moist non-acidic tundra (MNT), Alaska after 4 weeks (A+B), 8 weeks (C+D) and 12 weeks (E+F) under drained (A+C+E) and waterlogged (B+D+F) conditions. Each square represents a treatment (n=5) with Si (+0, +3, +6, and +10 mg g⁻¹ DW) and Ca (+0, +5, +10, and +15 mg g⁻¹ DW). Colour represents differences between the treatment CO₂ production in comparison to the control treatment, with green-blue showing a decreased CO₂ production and red showing an increased CO₂ production in comparison to the control treatment.