Supplementary Materials

Silica Particles Trigger the Exopolysaccharide Production of Harsh Environment Isolates of Growth-Promoting Rhizobacteria and Increase Their Ability to Enhance Wheat Biomass in Drought-Stressed Soils

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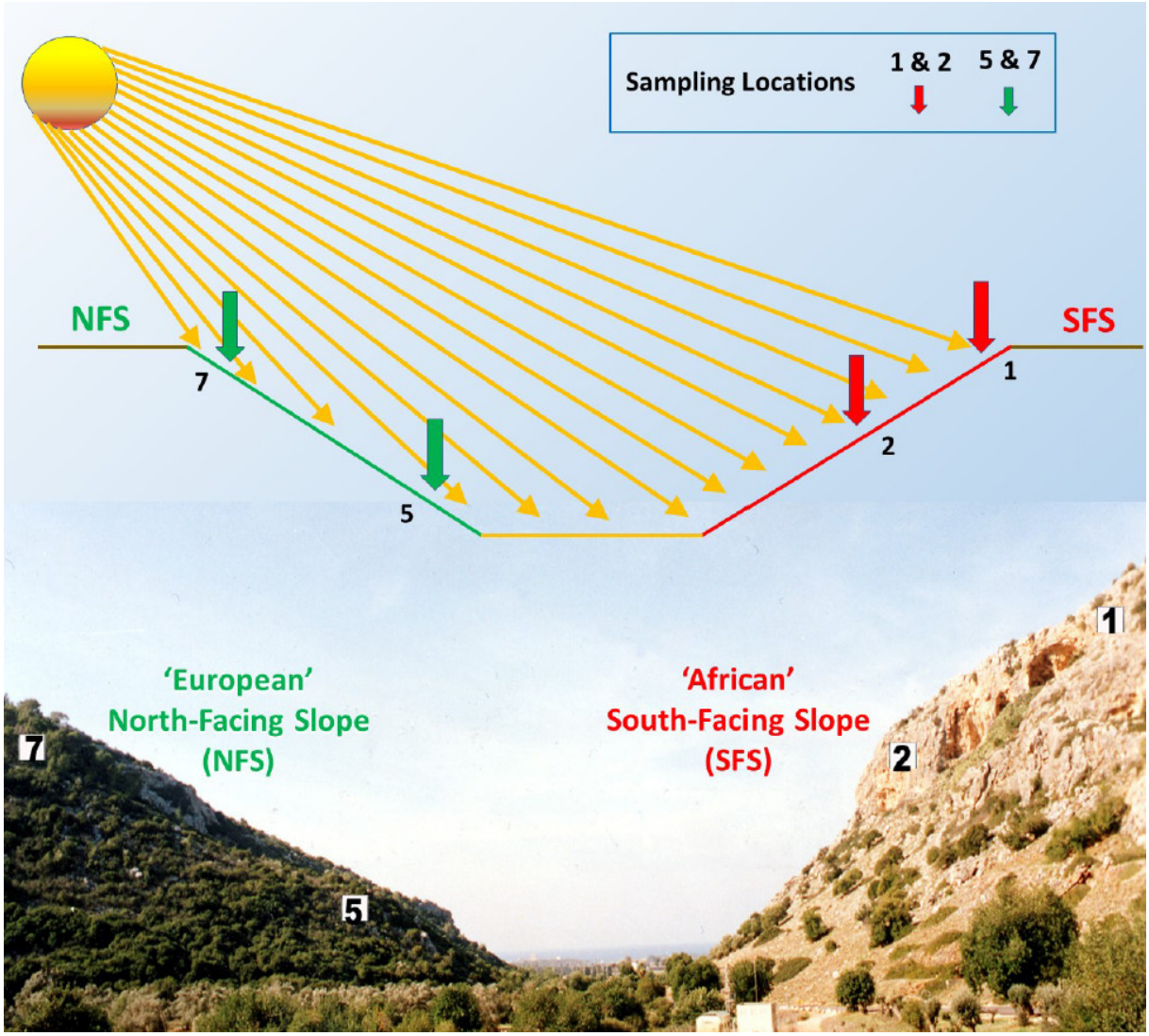

Figure S1. The Evolution Canyon (EC) model**:** Schematic diagram of the Evolution Canyon at Lower Nahal Oren, Mount Carmel (source[10]: Nevo, 2012 Evolution Canyon," a potential

microscale monitor of global warming across life, PNAS 109; 8) (Photo by S. Timmusk).

Table S1. Strains used in the study

Name	Wild barley rhizosphere, the Evolution Canyon, Haifa, Israel	Publications
Paenibacillus polymyxa A26	Wild barley rhizosphere, the Evolution Canyon, Haifa, Israel	[1]
Paenibacillus polymyxa A26Sfp	Wild barley rhizosphere, the Evolution Canyon, Haifa, Israel	[2–4]

Video S1

A. Material Typical performance of A26 and A26Sfp; B. A26SN and A26SfpSN. See Material and Methods.

Reference

1. Timmusk, S.; Paalme, V.; Pavlicek, T.; Bergquist, J.; Vangala, A.; Danilas, T.;Nevo, E. Bacterial distribution in the rhizosphere of wild barley under contrasting microclimates. *PLoS One*. **2011**, *6*, 1–8, doi: 10.1371/journal.pone.0017968.
2. Timmusk, S.; Kim, S.-B.; Nevo, E.; Abd El Daim, I.; Ek, B.; Bergquist, J.;Behers, L. Sfp-type PPTase inactivation promotes bacterial biofilm formation and ability to enhance wheat drought tolerance. *Front. microbiol.* **2015**, *6*, 387, doi: 10.3389/fmicb.2015.00387.
3. Abd El-Daim, I.; Haggblom, P.; Karlsson, M.; Stenstrom, E.; Timmusk, S. *Paenibacillus polymyxa* A26 Sfp-type PPTase inactivation limits bacterial antagonism against *Fusarium graminearum* but not of *F. culmorum* in kernel assay. *Front. Plant Sci*. **2015**, 6, 368. doi: 10.3389/fpls.2015.00368.
4. Kim, S.-B.; Timmusk, S. A simplified method for *Paenibacillus polymyxa* gene knockout and insertional screening. *PLoS One* **2013**, *8*, e68092. doi: 10.1371/journal.pone.0068092.