

Supplementary Material

Table S1. Inhibition halos (mm) caused by penicillin, kanamycin (antibiotics) and amphotericin B (anti-fungal) on the tested microorganisms (n=18).

| | Conventional Extraction | | | Sonication-assisted Extraction | | |
|----------------------|-------------------------|------------|----------------|--------------------------------|------------|----------------|
| | Penicillin | Kanamycin | Amphotericin B | Penicillin | Kanamycin | Amphotericin B |
| <i>E. coli</i> | 2.2 ± 2.7 | 15.6 ± 5.9 | - | 4.3 ± 2.5 | 17.5 ± 0.8 | - |
| <i>P. aeruginosa</i> | 24.7 ± 2.5 | 22.7 ± 2.5 | - | 26.6 ± 3.2 | 23.3 ± 0.9 | - |
| <i>S. aureus</i> | 8.9 ± 2.3 | 14.8 ± 1.3 | - | 12.8 ± 1.7 | 15.7 ± 0.7 | - |
| <i>B. cereus</i> | R | 16.8 ± 0.9 | - | R | 18.8 ± 2.4 | - |
| <i>Y. lipolytica</i> | - | - | 2.2 ± 1.9 | - | - | 5.6 ± 1.9 |

R: resistant.

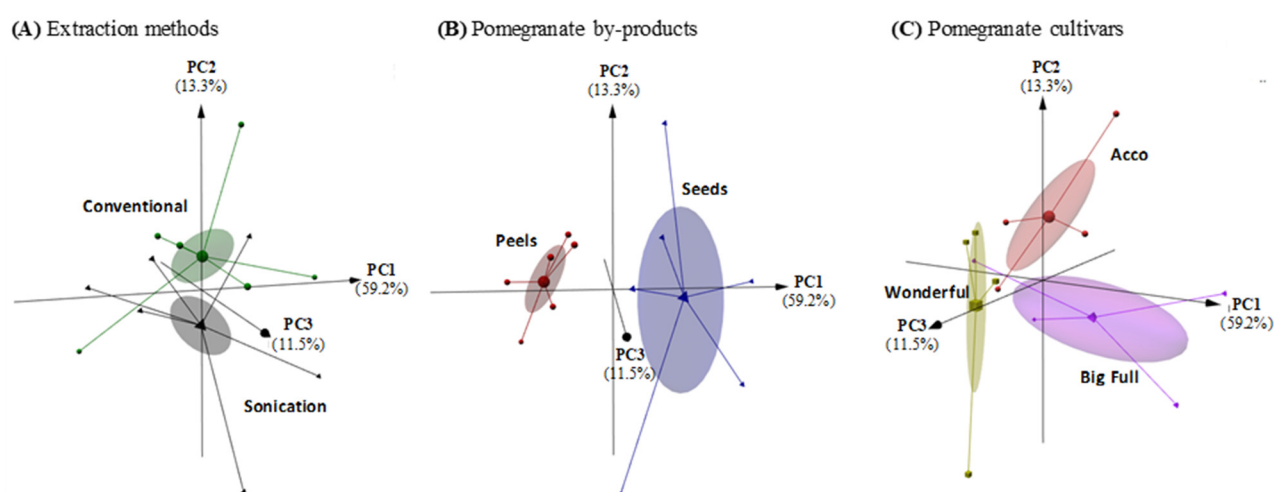


Figure S1. 3D-PCA plots for the pomegranate extracts classification based on the experimental analysis according to: (A) the extraction method (conventional or sonication-assisted); (B) the type of by-product (peels or seeds); and (C) the cultivar (Acco, Big Full or Wonderful).

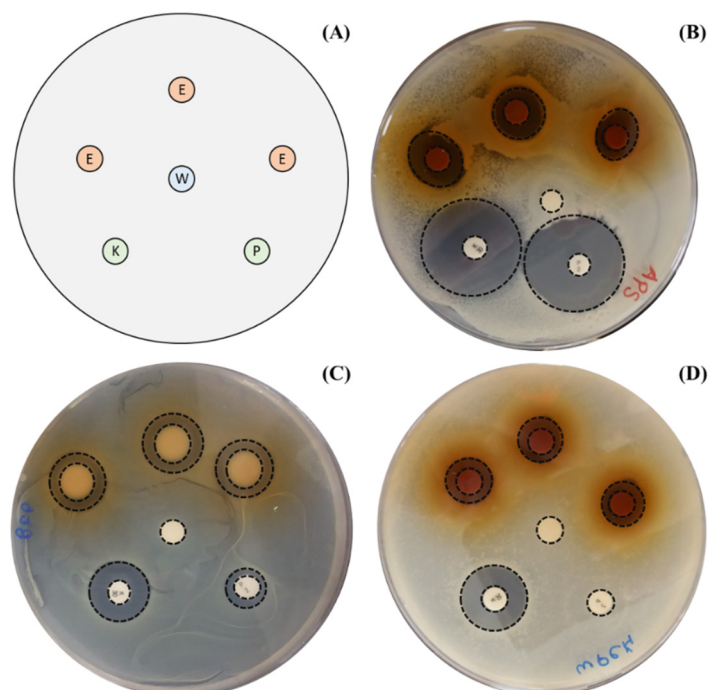


Figure S2. Inhibition halos formed due to the antimicrobial activity of the studied extracts: **(A)** schematic representation of a Petri dish with extracts (E), water (W), kanamycin (K) and penicillin (P); **(B)** inhibition halos of Acco peel extracts (sonication extraction) against *P. aeruginosa*; **(C)** inhibition halos of Big Full peel extracts (conventional extraction) against *S. aureus*; and, **(D)** inhibition halos for Wonderful peel extracts (sonication extraction) against *B. cereus*.

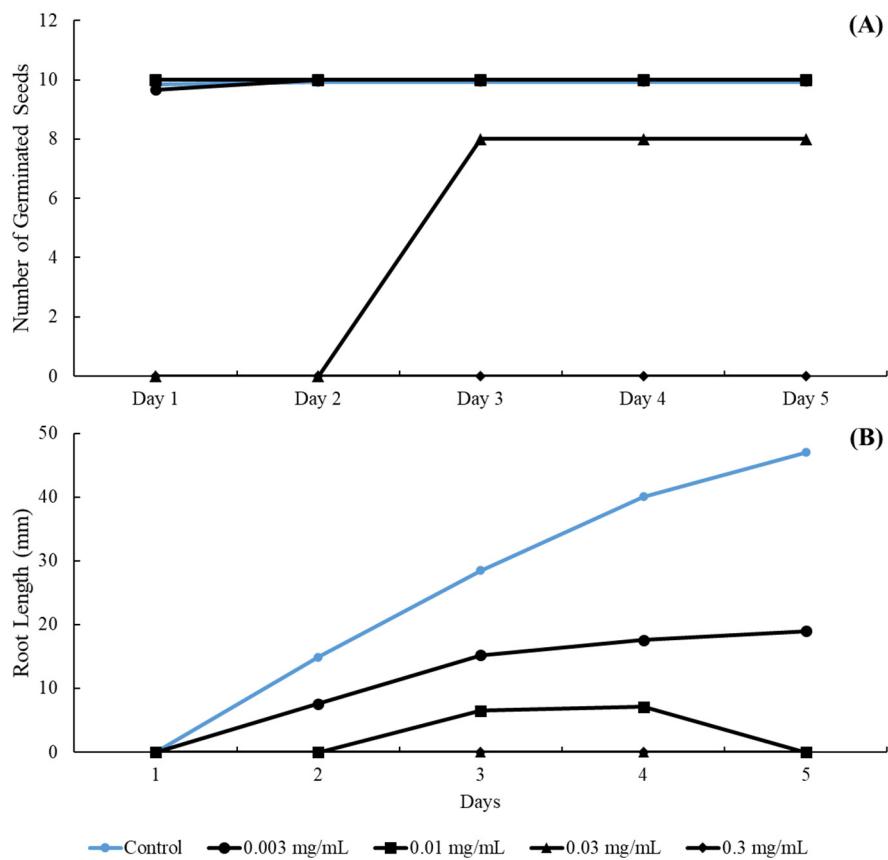


Figure S3. Preliminary phytotoxicity test against garden-cress seeds with extracts from Wonderful peel (sonication extraction) to determine **(A)** the number of germinated seeds; and **(B)** roots length (mm) of the germinated seeds.