**Table S1** Nutritional values (mean ± standard deviation) of the investigated tomato accessions in 2012

PGR code/ TSS DM TA SA ratio Lycopene FRAP TPC DPPH

variety name (Bxo) (g/100g) (g/100g) (g/100g) (mg/l AA) (mg/l GA) (I%)

30271 4.40±0 bd 4.35±0.16 bc 0.66±0.04 bcd 6.73±0.45 cde 9.26±0.22 bc 18.94±0.56 a 2154.85±247.76 ab 54.54±1.34 bc

31091 3.40±0 b 3.83±0.05 c 0.52±0 f 6.48±0 cdef 6.59±0.12 c 8.33±0.44d e 1511.75±54.54 b 54.45±0.38 c

31174 4.60±0 bd 5.66±0.11 a 0.68±0.03 abc 6.72±0.25 cde 7.8±0.47 bc 6.89±0.43 ef 1738.36±89.12 ab 54.09±0.89 c

31255 5.73±0.06 a 5.54±0.15 ab 0.73±0.03 ab 7.88±0.25 ab 11.24±0.60 b 5.26±0.87 g 1498.22±95.20 b 55.2±0.31 bc

31257 5.63±0.06 a 4.89±0.02 b 0.79±0.04 a 7.18±0.47 bc 15.1±0.89 a 10.25±0.19 c 1913.85±169.91 ab 62.05±0.17 a

56060 3.70±0.10 cd 4.55±0.18 bc 0.64±0.05 bcde 5.79±0.32 ef 10.47±0.59 bc 6.36±0.40 fg 1414.44±44.64 b 56.94±0.65 b

57664 4.07±0.06 b 4.55±0.08 b 0.64±0.03 bcde 6.35±0.16 cdef 9.11±0.59 bc 6.4±0.08 fg 1350.01±73.82 b 60.79±0.46 a

60348 4.07±0.12 bcd 4.65±0.06 b 0.58±0.03 cdef 6.99±0.43 bcd 8.97±1.83 bc 10.63±0.46 bc 1520.77±24.33 b 60.26±0.69 a

60349 4.50±0.10 b 5.5±0.08 a 0.54±0.03 ef 8.36±0.43 a 9.8±0.40 bc 11.79±0.62 b 2500.25±5.58 a 58.08±0.14 b

29837 4.20±0 bd 5.23±0.22 ab 0.7±0.09 ab 6.07±0.76 cdef 7.86±2.16 ns 6.38±0.26 fg 1356.45±20.12 b 61.23±0.18 a

San Marzano 4.63±0.15 b 5.57±0.08 a 0.77±0.03 a 6±0.14 def 7.27±1.09 c 6.53±0.29 fg 1472.44±103.35 b 56.18±0.52 bc

Hellfrucht 3.13±0.06 d 4.43±0.40 bc 0.57±0.04 def 5.54±0.43 f 5.98±0.69 c 8.46±0.61 d 1559.43±94.87 b 58.49±2.91 ns

Marmande 3.77±0.06 c 4.89±0.31 abc 0.7±0 ab 5.39±0.08 f 6.38±0.49 c 10.2±0.62 c 1556.43±28.32 b 59.63±0.18 ab

Legend: TSS: total soluble solids, DM: dry matter, TA: total acid content, SA ratio: sugar-acid ratio, FRAP: ferric reducing ability of plasma, TPC: total polyphenolic content, DPPH: diphenylpicrylhydrazyl.

**Table S2** Nutritional values (mean ± standard deviation) of the investigated tomato accessions in 2013

PGR code/ TSS DM TA SA ratio Lycopene FRAP TPC DPPH

variety name (Bxo) (g/100g) (g/100g) (g/100g) (mg/l AA) (mg/l GA) (I%)

30271 6.37±0.21 cde 6.34±0.17 a 0.4±0 a 15.98±0.52 fg 5.67±0.44 abc 34.30±1.52 c 754.91±13.52 b 40.08±0.47 d

31091 5.37±0.12 f 5.5±0.14 b 0.28±0.02 c 19.48±1.18 de 5.75±0.48 abcd 18.67±0.74 ef 608.42±35.65 bc 35.81±0.63 e

31174 6.20±0.17 de 6.45±0.34 ab 0.29±0 bc 21.61±0.6 bcd 4.88±0.20 bcdef18.01±0.50 f 657.09±58.95 bc 41.49±0.68 d

31255 6.70±0.20 bc 6.21±0.04 ab 0.28±0.01 c 24.27±1.08 a 7.06±0.54 ab 35.59±1.00 bc 727.50±10.64 b 44.91±2.05 cd

31257 7.77±0.15 a 6.87±0.14 a 0.38±0.01 ab 20.59±0.18 cde 3.86±0.29 bcdef 19.41±1.03 ef 716.16±28.15 bc 53.81±0.39 a

56060 7.03±0.12 b 6.07±0.19 ab 0.32±0 bc 22.07±0.36 abc 3.41±0.33 f 18.07±2.38 f 503.51±71.79 c 38.8±1.77 de

57664 6.20±0.17 de 6.35±0.17 a 0.38±0.01 ab 16.45±0.75 f 7.51±0.80 a 21.96±1.09 de 660.87±65.98 bc 39.65±0.1 d

60348 7.13±0.25 b 7.10±0.25 a 0.36±0.01 ab 20.06±1.15 cde 5.12±0.39 bcdef 37.26±0.12 abc 585.26±98.39 bc 53.81±0.42 a

60349 7.00±0.10 b 6.63±0.29 ab 0.34±0.01 b 20.6±0.62 cde 5.76±1.02 abcde 38.4±0.90 ab 1014.34±29.87 a 44.76±0.5 cd

29837 5.27±0.12 f 5.56±0.14 b 0.38±0 ab 13.77±0.3 g 3.78±0.37 def 24.05±1.37 d 703.40±13.17 b 48.26±0.52 c

San Marzano 6.47±0.15 cd 6.28±0.13 a 0.28±0.01 c 22.99±1.02 ab 5.22±0.45 bcdef 33.91±2.00 c 580.53±80.51 bc 51.08±0.8 b

Hellfrucht 5.13±0.06 f 6.87±0.48 ab 0.35±0.01 ab 14.87±0.35 fg 3.38±0.74 ef 40.39±0.81 a 571.08±5.73 c 52.53±0.22 ab

Marmande 5.93±0.15 e 6.86±0.37 ab 0.31±0.01 bc 18.95±1.05 e 4.23±0.78 cdef 23.98±0.93 d 595.66±36.54 bc 48.75±0.2 bc

Legend: TSS: total soluble solids, DM: dry matter, TA: total acid content, SA ratio: sugar-acid ratio, FRAP: ferric reducing ability of plasma, TPC: total polyphenolic content, DPPH: diphenylpicrylhydrazyl

**Table S3** Nutritional values (mean ± standard deviation) of the investigated tomato accessions in 2014

PGR code/ TSS DM TA SA ratio Lycopene FRAP TPC DPPH

variety name (Bxo) (g/100g) (g/100g) (g/100g) (mg/l AA) (mg/l GA) (I%)

30271 4.27±0.21 cd 4.44±0.4 ns 0.44±0.01bc 9.69±0.62bc 7.16±0.76ab 4.51±0.89 g 422.23±23.57cde 49.27±0.35cd

31091 3.53±0.15 fg 4.44±0.35 ns 0.4±0.01e 8.86±0.58bc 5.59±0.22b 12.5±0.19 bc 377.34±17.15e 52.86±0.5c

31174 3.97±0.06 de 4.19±0.15bc 0.46±0.01b 8.6±0.26c 4.98±0.27b 9.52±0.27 d 412.78±30.81de 48.5±0.11d

31255 5.13±0.15 a 5.27±0.07a 0.34±0.01g 15.25±0.86a 8.81±2.34ab 7.05±0.44 f 490.28±9.65abcd 61.88±0.57ab

31257 5.43±0.12 a 5.4±0.13a 0.37±0.01f 14.76±0.05a 10.58±0.21a 13.15±0.36 b 512.96±39.70ab 47.8±1.87d

56060 3.80±0.10 ef 3.85±0.18cd 0.39±0.01e 9.65±0.45bc 7.09±1.2ab 6.01±0.48 fg 382.06±27.92e 61.23±0.53b

57664 4.63±0.06 b 4.9±0.33 ns 0.49±0.01a 9.41±0.15bc 7.75±0.8a 8.69±0.15 de 439.24±32.77bcde 63.34±0.5ab

60348 3.87±0.06 e 4.07±0.07c 0.33±0.01g 11.66±0.27ab 4.48±0.59b 12.47±0.92 bc 450.11±29.29bcde 45.81±1.47d

60349 4.7±0.10b 4.4±0.14bc 0.39±0.01e 11.93±0.14a 6.09±0.15b 7.36±0.15 ef 495±10.64abc 64.05±0.15a

29837 4.57±0.12bc 4.49±0.04b 0.44±0cd 10.49±0.27b 7.69±1.37ab 8.72±0.59 de 531.86±11.8a 65.87±0.32a

San Marzano 4.6±0b 4.91±0.06a 0.44±0.01bc 10.44±0.21b 8.62±0.33a 11.88±0.7 bc 556.91±36.15a 63.95±0.88ab

Hellfrucht 3.97±0.06de 4.41±0.06b 0.43±0.01cd 9.34±0.33bc 6.93±1.41ab 21.51±0.47 a 499.25±33.74abc 63.97±0.5ab

Marmande 3.47±0.12g 3.49±0.09d 0.41±0.01de 8.37±0.47c 5.28±0.22b 11.39±0.64 c 440.66±14.34bcde 50.85±0.48cd

Legend: TSS: total soluble solids, DM: dry matter, TA: total acid content, SA ratio: sugar-acid ratio, FRAP: ferric reducing ability of plasma, TPC: total polyphenolic content, DPPH: diphenylpicrylhydrazyl

**Fig S1** GGE biplot of investigated functional properties of ten Hungarian tomato accessions and three commercial varieties in three consecutive years (2012-2014) (SVP=2, Transform=0, scaling by standard deviation, tester- centered G+GE). The last five digits of the accession codes and abbreviations of variety names are used for sample identification

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Legend: BRIX: total soluble solids, DM: dry matter, TA: total acid content, SA ratio: sugar-acid ratio, Lyc: lycopene, FRAP: ferric reducing ability of plasma, TPC: total polyphenolic content, DPPH: diphenylpicrylhydrazyl.

**Fig S2a, b, and c** GGE biplot of investigated functional properties of ten Hungarian tomato accessions and three commercial varieties in three environments (2012-2014) (SVP=2, Transform=0, scaling by standard deviation, tester- centered G+GE). The last five digits of the accession codes and abbreviations of variety names are used for sample identification

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**Fig S3a, b, and c** Tomato PGR comparison in 2012-2014 with a theoretical sample having high and equilibrated nutritional content, based on functional properties, using GGE biplot (SVP=2, Transform=0, scaling by standard deviation, tester- centered G+GE). The last five digits of the accession codes and abbreviations of variety names are used for sample identification

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