Supplementary Materials

Key findings from Rao, S., A.B. Santhakumar, K.A. Chinkwo, G. Wu, S.K. Johnson, and C.L. Blanchard, J. Cereal Sci., 2018, 84, 103; are listed below.

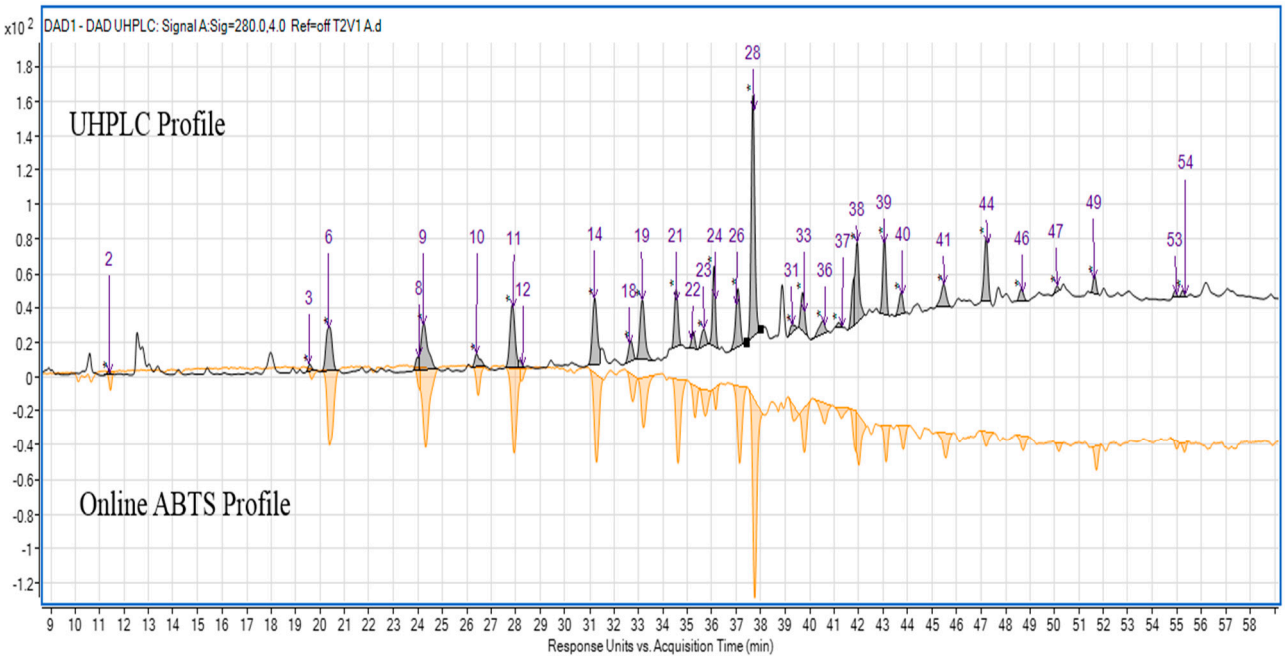

Figure 1. UHPLC online ABTS mapping of phenolic compounds from black pericarp sorghum variety Shawaya short black 1.

Table 1. Phenolic composition and antioxidant activity of sorghum varieties on as is basis.

Variety	TPC mg/g GAE	TPAC mg/g CE	DPPH mg/g TE	FRAP mg/g TE
Shawaya short black 1	11.50 ± 1.81$_a$	3.02 ± 0.72$_a$	18.04 ± 3.53$_a$	20.92 ± 2.69$_a$
IS 13116 (Brown)	3.58 ± 1.63$_b$	5.55 ± 0.40$_b$	21.02 ± 5.17$_a$	4.62 ± 3.19$_b$
QL33/QL36 (red)	0.88 ± 0.17$_c$	0.47 ± 0.23$_c$	1.17 ± 0.48$_b$	4.83 ± 2.54$_b$
B923296 (red)	0.66 ± 0.27$_c$	0.41 ± 0.28$_c$	0.41 ± 0.14$_b$	2.72 ± 1.35$_b$
QL12 (white)	0.24 ± 0.03$_c$	0.09 ± 0.26$_c$	0.33 ± 0.10$_b$	2.31 ± 1.55$_b$
QL33 (red)	0.75 ± 0.23$_c$	0.60 ± 0.39$_c$	0.76 ± 0.18$_b$	3.43 ± 2.37$_b$

Different letters in the different columns represent significant difference at $p<0.05$. CE (Catechin equivalents), DPPH (2, 2-diphenyl-1-picrylhydrazyl), FRAP (Ferric reducing ability of plasma assay), GAE (Gallic acid equivalents), TE (Trolox equivalents), TPC (Total phenolic content) and TPAC (Total proanthocyanidin content).

Table 2. List of top ten phenolic compounds identified in the black sorghum phenolic rich extracts by Q-TOF LC/MS and quantified using UHPLC-Online ABTS system (Adapted from Rao et al., 2018)

Compound	Phenolic quantity (mg 100mg^{-1} GAE)	Antioxidant activity (mg 100mg^{-1} TE)
Catechin derivative	2.11 ± 0.47	1.51 ± 0.27
Catechin	1.97 ± 0.36	1.54 ± 0.25
Pentahydroxyflavanone-(3->4)-catechin-7-O-glucoside	1.80 ± 0.28	2.62 ± 0.36
Catechin derivative	0.66 ± 0.13	1.42 ± 0.24
Pyrano-eriodictyol-(3->4)-catechin-7-O-glucoside	0.65 ± 0.14	0.78 ± 0.16
1-O-Caffeoylglycerol-O-glucoside	0.65 ± 0.12	1.74 ± 0.33
N′.n′-dicafferoylspermidine	0.61 ± 0.12	0.98 ± 0.15
Pyrano-eriodictyol-(3->4)-catechin-7-*O*-glucoside isomer	0.55 ± 0.08	0.60 ± 0.06
Robinetinidol-(4alpha->6)-catechin-(6->4alpha)-robinetinidol	0.53 ± 0.11	1.25 ± 0.20
Pyrano-naringenin-(3->4)-catechin-7- *O*-glucoside isomer	0.53 ± 0.07	0.42 ± 0.06

Table 3. Amplification efficiency of primers used in this study determined after running a standard curve.

Gene	Amplification efficiency - E (%)
Nrf2	107%
NQO1	101.6%
HO1	101.5%
NOX4	107%
eNOS	94.1%
MCP1	95.2%
ICAM1	100.1%
CD39	101%
CD73	93%
β-Actin	95.5%