

## Supplementary material

### *Monosaccharide compositions analysis*

The other parts of dietary fibers were detected for monosaccharide composition. Briefly, 0.01 g samples were dissolved in 1 mL trifluoroacetic acid (4 M) filled with nitrogen and hydrolyzed at 110°C for 5 h. Then cooled to room temperature, 0.05 mL 0.3 mol/L NaOH solution and 0.05 mL PMP-methanol was added to 0.1 mL of hydrolysis solution, stayed in 70°C of water for 60 min. After cooling to room temperature, 0.05 mL 0.3 mol/L HCl, 0.75 mL water and 1.5 mL chloroform was added and it was mixed well. Then waiting for static layering, the lower layer of chloroform was discarded, the extraction step was repeated three times, the aqueous layer through the 0.45 µm filter membrane.

Next, 10 µL of each sample was analyzed using a 7890B gas chromatography instrument (Agilent Technologies, CA, USA) equipped with an C18 MS chromatographic column (4.6 mm×250 mm×5µm). The column temperature was 25°C and the flow rate was 1 mL/min with mobile phase A of 0.1 mol/L KH<sub>2</sub>PO<sub>4</sub> (PH 6.8) and mobile phase B of acetonitrile. 254 nm wavelength was used to determine the monosaccharide composition of cereal dietary. The results were shown in Table S1.

Table S1 Monosaccharide composition of dietary fiber from wheat (WDF) and oat (ODF)

Monosaccharide	WDF (mg/kg)	ODF (mg/kg)
Mannose (Man)	7749.27 ± 14.71 <sup>a</sup>	4687.88 ± 6.06 <sup>b</sup>
Rhamnose (Rha)	94.20 ± 1.45 <sup>c</sup>	106.06 ± 9.93 <sup>c</sup>
Glucuronic acid (GlcA)	102.90 ± 3.84 <sup>d</sup>	130.30 ± 4.01 <sup>c</sup>
Galacturonic acid (GalA)	-	-
Glucose (Glc)	636004.35 ± 206.21 <sup>d</sup>	701315.15 ± 432.51 <sup>c</sup>
Galactose (Gal)	-	-
Xylose (Xyl)	156808.69 ± 94.06 <sup>b</sup>	162481.82 ± 91.85 <sup>a</sup>
Fucose (Fuc)	-	-

Note: -, not detected.