Table S3. Total yields and properties of TPW derived pectin, obtained by different extraction methods. All the parameters significant for extraction procedure were noted (Type of TPW, extraction solvent, extraction conditions specific for the type of extraction method) as well as the properties of the pectin obtained.

Extraction method	Type of TPW	Extraction solvent	Extraction conditions	Yield (g/kg)**	Pectin properties	Reference
CSE	Fresh TPW	AE (HCl)	60 min, 65/75/85 °C; pH 2, SSR 1:100 (w/w)	242–281	GalA: 800 g/kg DM: 76.3% Mw: 94.6 kDa	[127]
		water	30/60/180 min, 75/85/95 °C, SSR 1:100 (w/w)	31–87	GalA: 813 g/kg DM: 88% Mw: 30.5 kDa	
	Alcohol insoluble residue obtained after	AE (HNO₃)	180 min, 80 °C, pH 1.6, SSR 1:67 (w/v)	473*	DM: 67% Mw: 270.3 kDa UA: 559 g/kg	[128]

precipitation: EtOH 1:1.5 (v/v); washing: 3x 50% EtOH; drying: 45 °C; purification: water, 60 °C, 60 min

centrifugation: 8000 g, 10 min; washing: soaking in 3L of deionized water, 10 min; centrifugation; vacuum filtration

blanching of tomatoes	HPE + AE (HNO₃)	HPE: 4 h, 0.8–0.2 Ba, SSR 1:50 (w/w) AE: 180 min, 80 °C; pH 1.6		864*	DM: 47% Mw: 509.5 kDa UA: 560.8 g/kg	
	water	5 min, 100 °C, pH 4, SSR 1:180 (w/v)		273*	DM: 74% Mw: 114.8 kDa UA: 574 g/kg	
Dried TPW	ammonium oxalate/oxalic acid; reflux	two-step extraction: 24 h, 60/80 °C + 12 h, 60/80 °C	filtration; precipitation: 96% EtOH; vacuum filtration; washing: EtOH, acetone; drying: 40 °C, vacuum oven	309–311	DE: 84–89% AUA: 352–572 g/kg MeO: 5.3–9	[129]
Dried peel	ammonium oxalate/oxalic acid; reflux	two-step extraction: 24 h, 90 °C + 12 h, 90 °C		323	MeO:1.9 AUA: 125 g/kg DE: 82	[130]

	Feedstock	Extraction	Conditions	Post-processing	Yield	Properties	Ref.
	Blanched peel powder, dried	AE (HNO$_3$)	180/360 min, 80 °C, SSR 1:20 (w/v)		79 (180 min)	AUA: 427 g/kg	[120]
	Black tomato pomace	AE (HCl)	180/360 min, 80 °C, SSR 1:20 (w/v) repeated twice	precipitation: soaking in EtOH anhydrous, 8 h, 4 °C; centrifugation: 4000 rpm, 10 min; washing: EtOH 70%, EtOH 90%, acetone; drying: 40 °C, 12 h	72	GalA: 726 g/kg DM: 21%	[131]
		ammonium oxalate/oxalic acid	60 min, 60 °C, pH 4.6, SSR 1:20 repeated twice		43	GalA: 676g/kg DM: 30%	
UAE	Dried TPW	ammonium oxalate/oxalic acid	ultrasonic bath two step extraction: 15/30/45/60/90 min, 60 °C, 80 °C, 37 kHz	filtration; precipitation: 96% EtOH; vacuum filtration; washing: EtOH, acetone; drying: 40 °C, vacuum oven	335–357	DE: 77–88% AUA: 249–375 g/kg MeO: 3.4–5.6	[129]
	Dried TPW (60 °C, 24 h)	AE (citric acid)	ultrasonic bath: 20 min, 80 °C, pH 1.0/1.5/2, SSR 1:20/1:30/1:50 (w/v)	centrifugation; precipitation: EtOH 95%, 24 h, 4 °C; rinsing: EtOH	283	GalA: 13.4 mg/L	[93]

Material	AE type (acid)	Ultrasound conditions	Post-treatment	Yield (optimal conditions)	Characteristics	Ref.
	AE (citric acid)	ultrasonic bath: 10–30 min, 40–80 °C, pH 2.5, SSR 1:40	70%; drying: 60 °C, 1 h, vacuum oven	90 (80 °C/20 min)	AUA: 316 g/kg DM: 41% MeO: 22.67%	[132]
Blanched peel powder, dried (50 °C, 24 h)	AE (HCl)	13 mm-probe: 30/90/150 s, 450 W, 50% duty-cycle, pH 1–2, SSR 1:50/1:20	adjustment of pH to 3.5; centrifugation: 5000 rpm, 20 min; precipitation 96% EtOH, 8 h; centrifugation; washing: EtOH 95%; drying: 50 °C	98 (150 s, pH 1.5, SSR 1:50)		[133]
	AE (HCl)	19 mm-probe: 2–16 min, 60 °C, pH 1.5, SSR 1:50, 450/600/750 W.		152 (8.6 min, 600 W)	GalA: 825 g/kg DE: 67%	[133]
Raw black cherry tomato pomace	ammonium oxalate/oxalic acid	ultrasonic bath: sonication time 60 min (two step), 60 °C, 37 kHz	filtration; precipitation: 96% EtOH; vacuum filtration; washing: EtOH, acetone; freeze-drying	-	MeO: 1.73% AUA:19.4 DE: 51%	[134]
TPW	AE (citric acid/oxalic acid/HCl)	-	-	185 (citric acid, 30 min, 40 °C)	DE: 53% AUA: 450 g/kg MeO: 25%	[135]

MAE	Dried TPW (60 °C, 24 h)	AE (citric acid)	household MW oven: 3/5/10 min, 70–100 °C, pH 1.5, SSR 1:20, 300/450/600 W, 2450 MHz	centrifugation; precipitation: EtOH 95%, 24 h, 4 °C; rinsing: EtOH 70%; drying: 60 °C, 1 h, vacuum oven	301	GalA: 16.9 mg/L	[93]
	Blanched peel powder, dried (50 °C, 24 h)	AE (HCl)	household MW oven: 30/90/150 s, 50% pulsation, 540 W	adjustment of pH to 3.5; centrifugation: 5000 rpm, 20 min; precipitation: 96% EtOH, 8 h; centrifugation; washing: EtOH 95%; drying: 50 °C	120 (210 s, pH 1.5, SSR 1:50)		[133]
			household MW oven: 0.7–5.3 min, 540/720/900 W		254 (3.34 min, 88.7 °C, 900 W)	GalA: 912 mg/kg DE: 60%	[133]
OHAE	Blanched peel powder, dried (50 °C, 24 h)	AE (HCl)	90/150/210 s, 40 V, electrode surface 2291 mm²	adjustment of pH to 3.5; centrifugation: 5000 rpm, 20 min; precipitation: 96% EtOH, 8 h; centrifugation; washing: EtOH 95%; drying: 50 °C	80 (210 s, pH 1.5, SSR 1:50)		[133]
			1–8 min, pH 1.5, 40–60 V, electrode surface 2291 mm²		107 (5 min, 60V)	GalA: 676 mg/kg DE: 74%	[136]
HPE	Blanched peel powder, dried	AE (HNO₃)	10–45 min, 80 °C, 399 MPa, SSR 1:20	filtration; precipitation: EtOH 96%; purification: EtOH 96%, acetone 99.9%;	92 (45 min)	AUA: 425 mg/kg	[115]

				drying: 40 °C, vacuum oven			
UAME	Dried TPW (60 °C, 24 h)	AE (citric acid)	pH 1.5, SSR 1:20 (w/v); UAE: 20 min, 80 °C; MAE: 10 min, 300W	centrifugation; precipitation: EtOH 95% 24 h, 4 °C; rinsing: EtOH 70%; drying: 60 °C, 1 h, vacuum oven	341	GalA: 16.9 mg/L	[93]
	Blanched peel powder, dried (50 °C, 24 h)	AE (HCl)	19 mm probe + household MW oven: pH 1.5, SSR 1:50 (w/v); UAE: 2–16 min, 60 °C, 450/600/750 W; MAE: 4 min, 540 W.	adjustment of pH to 3.5; centrifugation: 5000 rpm, 20 min; precipitation: 96% EtOH, 8 h; centrifugation; washing: EtOH 95%; drying: 50 °C	180 (UAE 8 min, 450 W + MAE 4 min, 540 W)	GalA: 913 mg/kg DE: 73%	[133]
UAOHE	Blanched peel powder, dried (50 °C, 24 h)	AE (HCl)	19 mm probe + OHAE: pH 1.5, SSR 1:50; UAE: 2–16 min, 60 °C, 450/600/750 W; OHAE: 5 min, 60 V	adjustment of pH to 3.5; centrifugation: 5000 rpm, 20 min; precipitation: 96% EtOH, 8 h; centrifugation; washing: EtOH 95%; drying: 50 °C	146 (UAE 10 min, 450 W + OHAE 5 min, 60 V)	GalA: 780 mg/kg DE: 76%	[133]

AE-acid extraction, UAME-ultrasound assisted microwave extraction, OHAE-ohmic heating assisted extraction, UAOHE-ultrasound assisted ohmic heating a extraction, TPW-tomato processing waste, composed of peel, seed and pulp, GalA-galacturonic acid content, DM-degree of methylation, Mw-viscosimetric average

molecular weight, MW-microvawe, DE-degree of esterification, UA-uronic acid, AUA-anhydrouronic acid, MeO-metoxyl content, *expressed as relative uronic acid content, ** obtained under optimal extraction condition