

**Table S1.** Carbohydrate composition (g/kg) of the skin, pulp and whole yacon from the Hualqui and Crespo varieties as determined by HPAEC-PAD without any hydrolysis step. Glc – Glucose; Fru – Fructose, Suc, Sucrose; FOS – Fructooligosaccharides.

Sugar	Hualqui			Crespo		
	Skin	Pulp	Whole Yacon	Skin	Pulp	Whole Yacon
<b>Glc</b>	49 ± 6	79 ± 6	73 ± 5	44 ± 2	40 ± 5	41 ± 4
<b>Fru</b>	119 ± 3	233 ± 6	210 ± 5	119 ± 12	83 ± 4	90 ± 5
<b>Suc</b>	17 ± 0	40 ± 2	35 ± 1	32 ± 0	18 ± 1	20 ± 1
<b>FOS kesto-type</b>						
<i>DP3</i>	11 ± 0	37 ± 1	32 ± 1	13 ± 0	8 ± 0	9 ± 0
<i>DP4</i>	14 ± 0	34 ± 2	30 ± 1	17 ± 2	15 ± 0	2 ± 0
<i>DP5</i>	14 ± 0	32 ± 1	28 ± 1	24 ± 1	24 ± 0	24 ± 0
<i>DP6</i>	8 ± 0	18 ± 1	16 ± 1	19 ± 1	24 ± 1	23 ± 0
<i>DP7</i>	7 ± 0	13 ± 1	12 ± 1	18 ± 2	24 ± 0	23 ± 0
<i>DP8</i>	6 ± 0	10 ± 1	9 ± 0	18 ± 1	25 ± 1	24 ± 1
<i>DP9</i>	5 ± 0	8 ± 0	7 ± 0	20 ± 1	26 ± 0	25 ± 1
Total	64 ± 1	152 ± 4	134 ± 3	129 ± 8	146 ± 1	142 ± 1
<b>FOS inulo-type</b>						
<i>DP2</i>	1 ± 0	3 ± 0	3 ± 0	7 ± 0	5 ± 0	1 ± 0
<i>DP3</i>	-	1 ± 0	1 ± 0	6 ± 0	6 ± 0	6 ± 0
<i>DP4</i>	-	-	-	2 ± 0	3 ± 0	3 ± 0
<i>DP5</i>	-	-	-	tr	-	tr
<i>DP6</i>	-	-	-	-	-	-
Total	1 ± 0	4 ± 0	4 ± 0	15 ± 1	14 ± 0	14 ± 0
<b>Inulin</b>	11 ± 0	12 ± 1	12 ± 0	200 ± 8	390 ± 12	352 ± 11
<b>Total carbohydrates</b>	260 ± 5	520 ± 7	468 ± 5	539 ± 27	692 ± 20	661 ± 22

**Table S2.** Carbohydrate composition (g/kg) of Hualqui 5% lemon juice, commercial yacon syrup and commercial agave syrup as determined by HPAEC-PAD without any hydrolysis step.

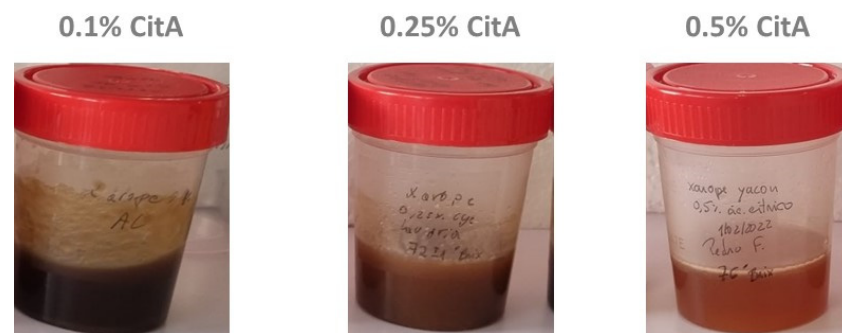
Sugar	Yacon Hualqui 5% Lemon juice	Yacon comercial syrup	Agave comercial syrup
<b>Glc</b>	155 ± 3	54 ± 5	220 ± 12
<b>Fru</b>	394 ± 6	518 ± 38	685 ± 53
<b>Suc</b>	46 ± 2	36 ± 7	-
<b>FOS kesto-type</b>			
DP3	15 ± 1	41 ± 2	-
DP4	20 ± 2	58 ± 4	-
DP5	15 ± 2	53 ± 2	-
DP6	8 ± 1	33 ± 1	-
DP7	4 ± 1	16 ± 2	-
DP8	2 ± 0	12 ± 1	-
DP9	3 ± 1	10 ± 1	-
Total	67 ± 8	223 ± 8	-
<b>FOS Inulo-type</b>			
DP2	9 ± 1	3 ± 0	-
DP3	7 ± 1	2 ± 0	-
DP4	5 ± 1	1 ± 0	-
DP5	2 ± 0	1 ± 1	-
DP6	1 ± 0	-	-
Total	23 ± 3	8 ± 2	-
<b>Inulin</b>			
DP10	-	6 ± 0	-
DP11	-	4 ± 0	-
DP12	-	2 ± 0	-
DP13	-	1 ± 0	-
DP14	-	1 ± 0	-
<b>Total</b>	-	15 ± 0	-
<b>Total carbohydrates</b>	687 ± 22	853 ± 46	904 ± 63

**Table S3.** Carbohydrate composition (g/kg) of Hualqui 5% lemon juice and of the hualqui syrups and Crespo syrups produced with citric acid (0.1%, 0.25%, 0.25% and 0.08% ascorbic acid and 0.5%) as determined by HPAEC-PAD without any hydrolysis step.

Sugar	Hualqui					Crespo				
	5% Lemon juice	0.1% CitA	0.25% CitA	0.25% CitA + 0.08% AA	0.5% CitA	0.1% CitA	0.25% CitA	0.25% CitA + 0.08% AA	0.5% CitA	
	Atm. Press.	Atm. Press.	Atm. Press.	Atm. Press.	Atm. Press.	Atm. Press.	Atm. Press.	Atm. Press.	Red. Press.	Atm. Press.
<b>Glc</b>	155 ± 3	98 ± 4	121 ± 1	111 ± 2	146 ± 2	80 ± 1	91 ± 3	82 ± 4	79 ± 9	92 ± 6
<b>Fru</b>	394 ± 6	288 ± 2	358 ± 5	267 ± 0	445 ± 8	183 ± 7	220 ± 7	202 ± 7	172 ± 17	333 ± 21
<b>Sucrose</b>	46 ± 2	50 ± 3	52 ± 2	50 ± 0	32 ± 1	34 ± 4	22 ± 3	18 ± 3	32 ± 0	36 ± 3
<b>FOS kesto-type</b>										
DP3	15 ± 1	36 ± 2	38 ± 4	13 ± 0	6 ± 1	19 ± 0	19 ± 0	20 ± 2	15 ± 1	12 ± 2
DP4	20 ± 2	43 ± 3	58 ± 7	20 ± 2	3 ± 1	30 ± 1	29 ± 0	32 ± 1	26 ± 1	9 ± 1
DP5	15 ± 2	48 ± 3	57 ± 7	12 ± 0	1 ± 0	46 ± 1	44 ± 0	46 ± 2	46 ± 2	11 ± 1
DP6	8 ± 1	31 ± 2	41 ± 7	6 ± 1	-	43 ± 3	37 ± 0	40 ± 4	42 ± 1	7 ± 1
DP7	4 ± 1	20 ± 2	29 ± 5	3 ± 0	-	43 ± 0	35 ± 2	35 ± 1	40 ± 3	4 ± 1
DP8	2 ± 0	16 ± 1	22 ± 3	1 ± 0	-	43 ± 2	26 ± 1	24 ± 1	37 ± 3	7 ± 1
DP9	3 ± 1	14 ± 1	20 ± 4	3 ± 0	-	41 ± 0	40 ± 1	41 ± 2	34 ± 2	5 ± 0
Total	67 ± 8	209 ± 13	253 ± 18	57 ± 1	10 ± 2	265 ± 2	230 ± 2	236 ± 12	240 ± 10	56 ± 1
<b>FOS Inulo-type</b>										
DP2	9 ± 1	6 ± 0	15 ± 1	8 ± 0	7 ± 1	9 ± 1	19 ± 1	18 ± 2	9 ± 1	28 ± 2

Inulin	DP3	7 ± 1	4 ± 0	12 ± 1	6 ± 0	4 ± 1	9 ± 0	15 ± 0	20 ± 1	8 ± 1	22 ± 2
	DP4	5 ± 1	2 ± 0	7 ± 1	3 ± 0	-	5 ± 1	13 ± 0	18 ± 2	3 ± 0	17 ± 1
	DP5	2 ± 0	1 ± 0	4 ± 1	1 ± 0	-	4 ± 0	12 ± 1	15 ± 1	2 ± 0	12 ± 1
	DP6	1 ± 0	1 ± 0	3 ± 0	tr	-	-	13 ± 1	16 ± 1	1 ± 0	7 ± 0
	Total	23 ± 3	14 ± 1	39 ± 3	18 ± 1	11 ± 1	26 ± 1	72 ± 2	85 ± 3	23 ± 1	85 ± 4
	DP10	-	8 ± 0	12 ± 2	-	-	38 ± 1	35 ± 1	34 ± 2	32 ± 2	4 ± 0
	DP11	-	5 ± 0	7 ± 1	-	-	36 ± 0	31 ± 1	29 ± 2	29 ± 2	2 ± 0
	DP12	-	3 ± 0	4 ± 1	-	-	32 ± 1	26 ± 1	23 ± 1	26 ± 3	1 ± 0
	DP13	-	2 ± 0	2 ± 0	-	-	26 ± 0	15 ± 0	13 ± 1	23 ± 2	tr
	DP14	-	1 ± 0	1 ± 0	-	-	19 ± 0	9 ± 2	8 ± 0	20 ± 2	-
	DP15	-	1 ± 0	-	-	-	15 ± 0	6 ± 2	4 ± 0	18 ± 2	-
	DP16	-	-	-	-	-	13 ± 0	6 ± 2	4 ± 0	16 ± 1	-
	DP17	-	-	-	-	-	12 ± 0	7 ± 0	6 ± 0	14 ± 1	-
	DP18	-	-	-	-	-	10 ± 0	6 ± 0	5 ± 0	13 ± 1	-
	DP19	-	-	-	-	-	8 ± 0	5 ± 1	4 ± 0	11 ± 1	-
	DP20	-	-	-	-	-	6 ± 0	3 ± 1	3 ± 0	9 ± 1	-
	DP21	-	-	-	-	-	4 ± 0	2 ± 0	2 ± 0	8 ± 1	-
	DP22	-	-	-	-	-	3 ± 0	1 ± 0	1 ± 0	7 ± 1	-
	DP23	-	-	-	-	-	2 ± 0	1 ± 0	1 ± 0	5 ± 0	-

DP24	-	-	-	-	-	-	-	-	4 ± 0	-
DP25	-	-	-	-	-	-	-	-	4 ± 0	-
DP26	-	-	-	-	-	-	-	-	3 ± 0	-
DP27	-	-	-	-	-	-	-	-	2 ± 0	-
DP28	-	-	-	-	-	-	-	-	2 ± 0	-
DP29	-	-	-	-	-	-	-	-	1 ± 0	-
DP30	-	-	-	-	-	-	-	-	1 ± 0	-
DP31	-	-	-	-	-	-	-	-	1 ± 0	-
<b>Total</b>	-	18 ± 1	25 ± 2	-	-	226 ± 2	153 ± 6	135 ± 6	251 ± 20	8 ± 1
<b>Total carbohydrates</b>	687 ± 22	677 ± 23	817 ± 50	503 ± 2	643 ± 9	820 ± 11	787 ± 0	759 ± 28	797 ± 49	609 ± 22



**Figure S1** – Color of the Crespo syrups made que 0.1% citric acid, 0.25% citric acid, and 0.5% citric acid.