Table 1- Characteristics of the cheese whey and the liquid fraction of manure (Mean ± SD).

Parameter	CW	SFCLF
TS ($g\ L^{-1}$)	55.1 ± 1.9	10.4 ± 1.5
VS ($g\ L^{-1}$)	47.8 ± 1.7	5.5 ± 1.6
COD ($g\ L^{-1}$)	57.5 ± 1.8	9.0 ± 2.1
COD_{VFA} ($g\ L^{-1}$)	0	5.9 ± 1.6
TKN-N ($mg\ N\ L^{-1}$)	1120 ± 270	1360 ± 180
P_T ($mg\ P\ L^{-1}$)	203 ± 14	34 ± 13
BA ($meq\ L^{-1}$)	0	21 ± 8

Mean and SD values obtained from seven duplicate samples

Table 2- Influent and effluent main parameters of the UASB reactor with different CW:SFCLF ratios at an HRT of 2.2 days

	CW:SFCLF ratio												
Influent	**10:90**	**15:85**	**20:80**	**25:75**	**30:70**	**35:65**	**40:60**	**45:55**	**50:50**	**55:45**	**65:35**	**75:25**	**85:15**
pH	6.1±0.2	6.3±0.1	6.2±0.1	6.2±0.4	5.9±0.3	6.4±0.1	6.4±0.1	6.6±0.3	6.3±0.4	6.1±0.1	6.1±0.2	6.0±0.l	6.1±0.1
COD_T (g L^{-1})	14.7±2.4	17.9±2.0	17.4±2.4	19.4±0.4	23.9±1.5	26.3±1.8	28.6±0.8	32.0±2.1	31.0±2.9	34.2±3.1	38.1±3.1	42.0±2.9	45.4±3.7
COD_f (g L^{-1})	13.5±2.2	15.7±1.2	15.6±2.0	16.9±1,2	21.7±1.8	24.0±1.7	26.2±1.0	28.4±1.7	29.5±2.4	31.0±2.7	34.3±0.4	39.2±2.5	40.2±1.3
COD_{VFA} (g L^{-1})	6.2±1.1	8.1±1.1	4.6±0.2	4.4±0.4	4.0±0.3	3.6±0.4	3.1±0.6	3.5±0.5	2.9±0.4	2.5±0.5	1.9±0.1	1.4±0.1	0.9±0.1
BA (meq L^{-1})	14±3	17±1	11±5	8±6	0	2±1	3±2	6±3	0	0	0	0	0
VAA (meq L^{-1})	104±13	90±11	77±2	92±16	104±19	74±2	70±5	76±8	80±7	84±5	73±8	56±1	49±3
TS (g L^{-1})	15.0±0.3	17.3±0.8	18.3±0.4	21.0±0.4	22.8±0.8	25.8±1.7	27.4±0.9	30.3±0.9	31.3±1.2	33.0±2.2	38.2±1.6	42.5±0.8	47.3±1.1
VS (g L^{-1})	9.2±0.2	11.7±0.9	12.7±0.4	15.3±0.3	17.1±0.9	20.7±2.7	22.1±1.1	24.4±0.7	25.4±1.0	27.5±2.2	32.3±1.7	36.8±0.8	41.6±1.0
Effluent													
pH	7.8±0.2	8.1±0.2	8.2±0.0	8.0±0.3	7.8±0.2	8.1±0.1	7.8±0.5	8.1±0.1	8.1±0.2	8.0±0.1	7.9±0.2	7.9±0.2	7.6±0.2
COD_T (g L^{-1})	1.3±0.4	0.9±0.2	0.9±0.3	0.9±0.1	1.1±0.1	1.0±0.1	1.0±0.1	1.5±0.1	1.4±0.2	1.2±0.2	1.0±0.2	1.1±0.3	2.3±1.8
COD_f (g L^{-1})	0.9±0.2	0.6±0.2	0.5±0.3	0.4±0.2	0.7±0.1	0.7±0.1	0.6±0.1	1.1±0.2	1.0±0.2	0.7±0.1	0.5±0.2	0.7±0.2	1.3±1.2
COD_{VFA} (g L^{-1})	0	0	0	0	0	0	0	0	0	0	0	0	0.8±1.1
BA (meq L^{-1})	189±6	170±17	163±7	164±5	149±10	148±6	147±8	177±15	190±14	187±12	163±30	147±7	145±18
VAA (meq L^{-1})	0	0	0	0	0	0	0	0	0	0	0	0	6±10
TS (g L^{-1})	6.4±1.1	7.0±0.3	6.4±0.6	6.8±0.4	6.5±0.3	6.6±0.2	6.5±0.2	6.7±0.3	7.0±0.2	6.4±0.1	6.7±0.2	6.6±0.2	7.4±1.0
VS (g L^{-1})	1.7±0.3	1.8±0.3	1.5±0.3	1.7±0.2	1.4±0.2	1.6±0.2	1.5±0.1	1.6±0.1	1.9±0.3	1.7±0.2	1.5±0.1	1.5±0.1	1.9±0.7

** The values showed are the mean values ± SD of five duplicate samples after steady state conditions were reached.*

Table 3- Influent and effluent main parameters of the UASB reactor at a constant 60:40 CW:SFCLF ratio and a decreasing HRT

	HRT (days)					
Influent	**2.2**	**1.80**	**1.67**	**1.44**	**1.30**	**1.18**
pH	6.3±0.1	6.5±0.1	6.5±0.1	6.5±0.2	5.9±0.3	6.5±0.2
COD_T (g L^{-1})	35.3±0.5	35.3±2.2	38.6±0.7	37.5±3.6	37.2±0.9	36.0±1.2
COD_f (g L^{-1})	30.6±0.9	32.3±1.1	34.3±2.1	32.1±3.7	33.6±2.0	33.0±1.3
COD_{VFA} (g L^{-1})	2.7±0.2	2.3±0.5	3.2±0.7	3.1±0.2	2.8±0.1	2.2±0.4
BA (meq L^{-1})	10±1	9±2	16±15	11±3	5±5	13±3
VAA (meq L^{-1})	65±2	64±3	67±9	68±2	85±13	60±5
TS (g L^{-1})	34.7±0.2	36.7±0.2	37.4±0.2	37.6±1.5	35.0±1.5	35.7±1.5
VS (g L^{-1})	27.8±0.2	29.4±0.9	30.5±1.4	31.8±1.3	29.3±1.4	30.2±1.4
Effluent						
pH	7.9±0.1	7.7±0.3	7.8±0.1	7.8±0.2	8.1±0.2	7.6±0.2
COD_T (g L^{-1})	1.5±0.2	2.2±0.4	2.1±0.2	1.7±0.5	1.8±0.4	4.1±1.7
COD_f (g L^{-1})	1.0±0.2	1.5±0.2	1.5±0.3	1.1±0.1	1.2±0.3	3.3±1.7
COD_{VFA} (g L^{-1})	0	0	0.3±0.2	0.1±0.1	0.4±0.3	1.9±1.3
BA (meq L^{-1})	168±5	173±19	171±9	170±5	166±5	157±44
VAA (meq L^{-1})	0	0	0	0	0	10±17
TS (g L^{-1})	6.7±0.3	7.2±0.5	7.2±0.1	8.4±1.4	7.5±0.6	9.0±0.9
VS (g L^{-1})	1.7±0.4	2.0±0.4	2.2±0.2	2.8±1.2	2.4±0.6	3.5±0.7

** The values showed are the mean values ± SD of five duplicate samples after steady state conditions were reached.*

Table 4- Operational features of successful anaerobic digestion systems for cheese whey and mixtures of cheese whey and animal manure

Substrates	CW:Manure Ratio	Reactor type	T[a] (ºC)	Chemical addition	HRT (days)	OLR (kg COD $m^{-3} \cdot d^{-1}$)	Biogas production (m^3 m^{-3} d^{-1})	CH_4 in biogas (%)	Reference
CW + Dm	50:50	One-stage CSTR	35	No	42	2.02	1.65	55	[28]
CW + Pm	50:50	One-stage CSTR	35	No	18	4.9	2.2	NR	[13]
CW + diluted Dm	50:50	One-stage CSTR	34	Basal medium	5	5.75	1.51	60	[27]
CW + diluted Dm	50:50	Two-stage Concentric CSTR	35	No	25	1.7	0.52	60	[29]
Diluted CW	100:0	Two-stage CSTR+Settler+ UASB	30	Trace elements	0.49[a] 0.40[b]	19.1[a]	12[a]	58	[24]
CW	100:0	Two-stage CSTR+AnMBR	37	No	4[a] 1.33[b]	19.8[a]	10[a]	>70	[11]
CW	100:0	One-stage UASB	35	Bicarbonate for start-up	2.7	28.5	NR	NR	[22]
CW	100:0	One-stage UASB	35	Basal Medium Bicarbonate	2.06	24.6	NR	NR	[23]
CW + SFCLF	75:25	One-stage UASB	35	No	2.2	20.9	13.2	53	This study
CW + SFCLF	60:40	One-stage UASB	35	No	1.3	28.7	16.6	56	This study

Dm: Dairy manure, Pm: Poultry manure, NR: Not reported. AnMBR: Anaerobic Membrane Biological Reactor.

[a] These data correspond with methanogenic reactor.

[b] HRT of acidogenic reactor.