GIS-based study on anaerobic co-digestion of agricultural wastes for biogas production in Norte de Santander (Colombia)

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Table S1. Number of hectares of rice straw and palm oid and pigs per municipality in "Norte de Santander" department.

Municipalities	Geographicaly location	Rice surface (Has)	Oil palm surface (Has)	Pig livestock (number)
ABREGO	South-west	0	0	4,790
ARBOLEDAS	Center	0	0	971
BOCHALEMA	South-east	0	0	1,336
BUCARASICA	North	0	0	763
CACOTA	South-west	0	0	232
CACHIRA	West	0	0	3,469
CHINACOTA	South-east	0	0	5,788
CHITAGA	South-west	0	0	1,099
CONVENCION	West	0	0	1,402
CUCUTA	East	21,524	1,635	27,009
CUCUTILLA	Center	0	0	2,550
DURANIA	South-east	0	0	1,247
EL CARMEN	West	0	0	924
EL TARRA	North	0	0	1,115
EL ZULIA	Center	4,790	800	6,879
GRAMALOTE	Center	0	0	935
HACARI	West	0	0	1,283
HERRAN	South-east	0	0	213
LABATECA	South-east	0	0	657
LA ESPERANZA	West	1,595	4,825	3,191
LA PLAYA	West	0	0	801
LOS PATIOS	East	226	0	1,477
LOURDES	Center	0	0	1,457
MUTISCUA	South-west	0	0	398
OCAÑA	West	0	0	8,450
PAMPLONA	South-west	0	0	1,356
PAMPLONITA	South-west	0	0	1,086
P. SANTANDER	East	1,490	0	475
RAGONVALIA	South-east	0	0	744
SALAZAR	Center	0	0	2,354
SAN CALIXTO	West	0	0	1,489
SAN CAYETANO	East	858	0	3,139
SANTIAGO	Center	40	62	597
SARDINATA	North	0	3,825	3,098
SILOS	South-west	0	0	70
TEORAMA	West	0	0	2,027
TIBU	North	1,333	32,200	6,202
TOLEDO	South-east	0	0	4,715
VILLA CARO	Center	0	0	1,431
VILLA DEL ROSARIO	East	440	0	2,801
TOTAL		**32,296**	**43,347**	**110,020**

Figure S1. Biomethane (blue bars) total production from the anaerobic co-digestion of POME (Palm oil mill effluent), PM (Pig manure) and RS (Rice straw), and the methane concentration obtained (circles) in each experiment.

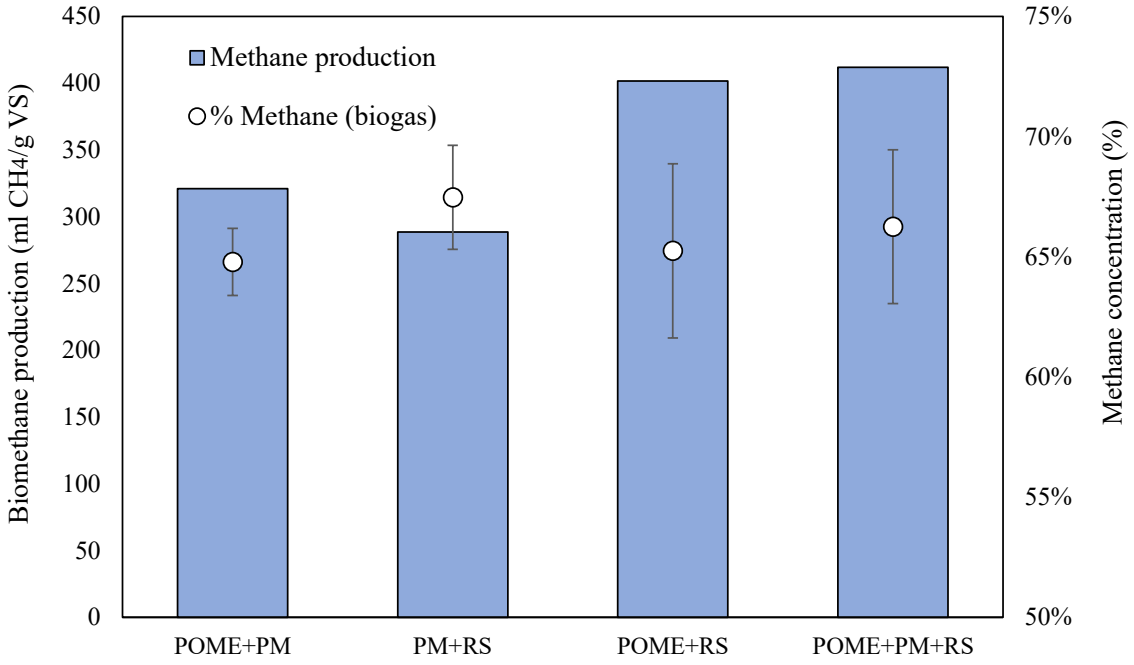


Figure S2. Biomethane production per amount of volatile solid of each mono-digestion and co-digestion test. Substrates used: POME (Palm oil mill effluent), PM (Pig manure) and RS (Rize straw). Gompertz modelling.

