

Table S1. In Vitro Ruminal Gas Production Kinetics^a of Maize Cell Walls Artificially Lignified by Adding H₂O₂ with a Binary Mixture of Coniferyl Alcohol (CA) and Sinapyl Alcohol (SA) or Trinary Mixtures of CA and SA with Various Epicatechin Derivatives (Experiment 1)

Monolignols	L_1 (h)	k_1 (h ⁻¹)	A (mL g ⁻¹)	L_2 (h)	k_2 (h ⁻¹)	B (mL g ⁻¹)	AB (mL g ⁻¹)
Nonlignified control	2.1a ^b	0.278a	342a	22.1a	0.065e	23c	365a
CA:SA low lignin control	0.0b	0.098bc	146bc	6.2c	0.196bc	113ab	259c
CA:SA normal lignin control	0.1b	0.091bc	115c	8.3bc	0.143cd	100b	214d
CA:SA:epicatechin	0.0b	0.075c	124bc	11.6b	0.127d	108ab	232d
CA:SA:epigallocatechin	0.4b	0.123b	153b	5.3c	0.307a	128a	282b
CA:SA:epicatechin gallate	0.0b	0.099bc	140bc	7.4c	0.198bc	120ab	260c
CA:SA:epigallocatechin gallate	0.3b	0.102bc	155b	7.0c	0.251ab	111ab	265bc
CA:SA:epicatechin vanillate	0.2b	0.100bc	147bc	7.3c	0.227b	125ab	272bc

^a Kinetic parameters: lag time (L_1), rate constant (k_1), and volume (A) of gas produced from the first digestion pool; lag time (L_2), rate constant (k_2), and volume (B) of gas produced from the second digestion pool; and total gas volume (AB)

^b Means within columns with unlike letters differ ($P \leq 0.05$).

Table S2. In Vitro Ruminal Gas Production Kinetics^a of Maize Cell Walls Artificially Lignified by Adding H₂O₂ with a Binary Mixture of Coniferyl Alcohol (CA) and Sinapyl Alcohol (SA) or Trinary Mixtures of CA and SA with Epigallocatechin Gallate, Quercetin Derivatives, or Gallate Esters (Experiment 2)

Monolignols	L_1 (h)	k_1 (h ⁻¹)	A (mL g ⁻¹)	L_2 (h)	k_2 (h ⁻¹)	B (mL g ⁻¹)	AB (mL g ⁻¹)
Nonlignified control	2.1	0.293a ^b	326a	19.6a	0.064c	29e	355a
CA:SA low lignin control	1.2	0.083bc	157c	9.5c	0.136b	84c	241c
CA:SA normal lignin control	2.0	0.065bc	148c	12.0b	0.108bc	64d	212d
CA:SA:epigallocatechin gallate	2.4	0.064c	157c	11.0bc	0.102bc	98b	255c
CA:SA:hyperoside	1.3	0.059c	164bc	12.0b	0.104bc	70d	234cd
CA:SA:galloylhyperin	1.7	0.085bc	145c	9.8bc	0.145b	96bc	241c
CA:SA:ethyl gallate	1.8	0.115bc	197b	6.6d	0.252a	108ab	304b
CA:SA:corilagin	1.7	0.122b	196b	6.7d	0.301a	95bc	291b
CA:SA:pentagalloylglucose	2.3	0.092bc	146c	9.3c	0.137b	115a	261c

^a Kinetic parameters: lag time (L_1), rate constant (k_1), and volume (A) of gas produced from the first digestion pool; lag time (L_2), rate constant (k_2), and volume (B) of gas produced from the second digestion pool; and total gas volume (AB)

^b Means within columns with unlike letters differ ($P \leq 0.05$).