

**Supplementary material to the manuscript *Evaluation of a System to Assess Herbicide Movement in Straw Under Dry and Wett Conditions*****Table S1.** Main physicochemical and agronomic characteristics of herbicides evaluated in sugarcane straw transposition experiments

Herbicide	Chemica group	Physicochemical characteristics <sup>a</sup>						Agronomic characteristics <sup>b</sup>			
		Sw	Log K <sub>ow</sub>	pK	K <sub>oc</sub>	PV	GUS	MoA	Spectrum	Time	Uptake
Atrazine	Triazine	35 (low)	2.70 (moderate)	1.7 (weak base)	100 (moderately mobile)	0.04 (low)	3.20 (high)	PSII	Dico	POST	Systemic
Diuron	Phenylureia	42 (low)	2.87 (moderate)	Non-ionizable	480 (not mobile)	1.15 × 10 <sup>-3</sup> (low)	1.83 (transition)	PSI	Dico & Mono	PRE & POST	Systemic
Fomesafen	Diphenyl ether	Salt: >500 (high) Acid: 50 (low)	-1.20 (low)	2.7 (weak acid)	60 (mobile)	4.00 × 10 <sup>-3</sup> (low)	3.18 (high)	PPO	Dico	POST	Topic
Glyphosate	Substituted glycine	>500 (high)	-3.22 (low)	2.3 (weak acid)	20,000 (not mobile)	0.01 (low)	-0.25 (low)	EPSPS	Dico & Mono	POST	Systemic
Haloxypop-P-methyl	Aryloxyphenoxypionate	7.9 (low)	4.07 (high)	4.33 (weak acid)	75 (moderately mobile)	0.055 (low)	3.70 (high)	ACCase	Mono	PRE & POST	Systemic
Hexazinone	Triazinone	33,000 (high)	1.17 (low)	2.2 (weak base)	54 (mobile)	0.03 (low)	4.43 (high)	PSII	Dico & Mono	PRE & POST	Topic
Indaziflam	Alkylazine	2.8 (low)	2.8 (moderate)	3.5 (weak acid)	1000 (not mobile)	2.5 × 10 <sup>-5</sup> (low)	2.18 (transition)	CS	Dico & Mono	PRE	Systemic
S-metolachlor	Chloroacetamide	480 (moderate)	3.05 (high)	Non-ionizable	200 (moderately mobile)	3.7 (low)	1.91 (transition)	VLCFA	Dico & Mono*	PRE	Systemic
Sulfentrazone	Aryl triazolinone	780 (high)	0.99 (low)	6.56 (weak acid)	43 (mobile)	1.30 × 10 <sup>-4</sup> (low)	6.16 (high)	PPO	Dico & Mono	PRE & POST	Systemic

<sup>a</sup>Sw – solubility water; Log K<sub>ow</sub> – octanol-water partition coefficient; pK – Acid/base electrolytic dissociation potential; K<sub>oc</sub> – Sorption-desorption coefficient; PV – Vapor pressure, tendency of an herbicide to volatilize; GUS – air-water partition coefficient, relationship between Sw and PV that indicates the volatilization potential as a function of soil moisture.

<sup>b</sup>MoA – Mode of action: PSII – Inhibition of photosystem II; PSI – Inhibition of photosystem I; PPO – Inhibition of Protoporphyrinogen Oxidase; EPSPS – Inhibition of Enolpyruvyl Shikimate Phosphate Synthase; ACCase – Inhibition of Acetyl Coenzyme A Carboxylase; CS – Inhibition of Cellulose Synthesis; VLCFA – Inhibition of Very Long-Chain Fatty Acid Synthesis. Spectrum: mono - monocotyledons; dico – dicotyledons; Time: application period: PRE – pre-emergence; post – post-emergence.



Figure S1. Chromatograms obtained for the different herbicides (50 L<sup>-1</sup>)





