

**Table S1:** incidence of reported dengue cases in the municipalities evaluated from 2008 to 2012 and in the corresponding States (in grey). Values refer to the rate of notified cases per 100.000 inhabitants.

Region	State	Locality	2008	2009	2010	2011	2012
N	RR		<b>1,194</b>	<b>756</b>	<b>1,685</b>	<b>322</b>	<b>399</b>
		Pacaraima	<b>700</b>	<b>374</b>	<b>1,074</b>	<b>460</b>	<b>939</b>
	PA		211	103	205	254	208
		Castanhal	131	95	131	76	<b>1,588</b>
		Marabá	252	106	129	214	141
NE	RN		<b>918</b>	81	248	<b>731</b>	<b>892</b>
		Caicó	217	6	108	234	<b>506</b>
SE	ES		<b>756</b>	<b>767</b>	<b>742</b>	<b>1,148</b>	<b>334</b>
		Cachoeiro de Itapemirim	<b>3,271</b>	7	<b>798</b>	<b>775</b>	<b>320</b>
			<b>609</b>	<b>646</b>	<b>1,700</b>	<b>566</b>	<b>398</b>
CO	GO	Aparecida de Goiânia	<b>1,293</b>	<b>1,821</b>	<b>2,138</b>	<b>1,169</b>	<b>1,536</b>
CO		Campos Belos	217	<b>1,505</b>	4,356	92	5
CO		Goiânia	<b>1,529</b>	<b>1,841</b>	<b>3,217</b>	<b>470</b>	<b>781</b>
CO		Rio Verde	<b>763</b>	184	<b>1,721</b>	249	<b>321</b>
CO		São Miguel do Araguaia	<b>332</b>	<b>1,414</b>	<b>574</b>	117	94
CO		São Simão	12	<b>1,375</b>	<b>2,382</b>	99	59
CO		Uruaçu	62	<b>1,595</b>	141	111	76

Available at [<http://www.censo2010.ibge.gov.br/sinopse/index.php?uf=14&dados=21>], accessed at 3rd Aug 2015.

Bold: values above 300, a high incidence rate according to the Brazilian Ministry of Health

**Table S2:** temephos lethal concentrations (LC) and diflubenzuron adult emergence inhibition doses (EI) of several Brazilian municipalities.

year	Region	State	Municipality/strain	temephos				diflubenzuron			
				LC <sub>50</sub> (µg/L)	LC <sub>95</sub> (µg/L)	range		EI <sub>50</sub> (µg/L)	EI <sub>95</sub> (µg/L)	range	
						LC <sub>50</sub> (µg/L)	LC <sub>95</sub> (µg/L)			EI <sub>50</sub> (µg/L)	EI <sub>95</sub> (µg/L)
2010	NE	RN	Rockefeller	2.89	5.33	2.80 < LC < 2.98	5.17 < LC < 5.50	1.101	1.900*	1.047 < LC < 1.176	1.805 < LC < 1.999*
			Caicó	24.31	51.31	23.68 < LC < 24.95	48.94 < LC < 53.80	2.444	3.283*	2.362 < LC < 2.528	3.119 < LC < 3.456*
2011	N	RR	Rockefeller	3.56	7.56	3.31 < LC < 3.82	6.75 < LC < 8.46	0.970	2.410	0.918 < LC < 1.025	2.256 < LC < 2.574
			Pacaraima	15.38	29.91	13.49 < LC < 17.54	25.42 < LC < 35.19	1.695	3.591	1.608 < LC < 1.788	3.307 < LC < 3.898
		PA	Castanhal	29.03	85.01	25.18 < LC < 33.47	67.00 < LC < 107.85	1.312	2.912	1.239 < LC < 1.389	2.662 < LC < 3.184
			Marabá	28.45	77.80	25.62 < LC < 31.59	66.28 < LC < 91.31	1.791	3.874	1.708 < LC < 1.878	3.561 < LC < 4.213
	SE	ES	Cachoeiro de Itapemirim	65.49	129.35	61.86 < LC < 69.33	118.68 < LC < 140.97	1.846	3.921	1.757 < LC < 1.940	3.639 < LC < 4.224
			Campos Belos	32.47	90.87	30.12 < LC < 35.00	78.91 < LC < 104.65	1.654	3.924	1.568 < LC < 1.744	3.530 < LC < 4.362
	CW	GO	Goiânia	28.25	64.83	25.83 < LC < 30.90	55.50 < LC < 75.73	1.509	4.285	1.414 < LC < 1.610	3.754 < LC < 4.891
			Rio Verde	40.99	112.06	37.04 < LC < 45.36	96.92 < LC < 129.57	1.914	3.902	1.830 < LC < 2.002	3.573 < LC < 4.262
			São Simão	43.13	111.77	37.50 < LC < 49.68	92.73 < LC < 134.71	1.953	5.637	1.851 < LC < 2.061	5.019 < LC < 6.331
2012	CW	GO	Uruaçu	37.37	94.53	32.88 < LC < 42.46	79.93 < LC < 111.81	1.877	3.615	1.799 < LC < 1.958	3.335 < LC < 3.919
			Aparecida de Goiânia	63.68	125.36	60.03 < LC < 67.54	115.45 < LC < 136.12	1.069	5.078	0.967 < LC < 1.181	4.201 < LC < 6.137
			São Miguel do Araguaia	75.05	205.21	68.19 < LC < 82.59	175.02 < LC < 240.61	1.508	4.067	1.417 < LC < 1.605	3.597 < LC < 4.599

\* EI<sub>80</sub> is informed

**Table S3:** deltamethrin lethal concentrations (LC) and *kdr* frequencies of several Brazilian municipalities. *Kdr* data source: Linss *et al* 2014.

year	Region	State	Municipality/strain	Deltamethrin						generation	sample size	1016Ile frequency	1534Cys frequency	Na <sub>v</sub> allelic frequencies		
				LC <sub>50</sub> (mg/L)	LC <sub>80</sub> (mg/L)	LC <sub>95</sub> (mg/L)	range		LC <sub>95</sub> (mg/L)					S	R1	R2
				LC <sub>50</sub> (mg/L)	LC <sub>80</sub> (mg/L)	LC <sub>95</sub> (mg/L)	LC <sub>80</sub> (mg/L)	LC <sub>95</sub> (mg/L)								
2010	NE	RN	Rockefeller	0.70		1.45	0.70 < LC < 0.81		2.36 < LC < 3.13	F1	30	0.017	0.084	0.917	0.067	0.017
			Caicó	4.22		19.04	3.62 < LC < 4.92	15.32 < LC < 23.67								
2011	N	RR	Rockefeller	0.92	1.41	2.12	0.84 < LC < 1.01	1.30 < LC < 1.54	1.87 < LC < 2.41	F0	30	0.400	1.000	0.000	0.600	0.400
			Pacaraima	30.61		127.89	25.96 < LC < 36.10	100.19 < LC < 163.25								
		PA	Castanhal	9.12		31.52	8.03 < LC < 10.35		26.97 < LC < 36.86	F0	30	0.033	0.333	0.667	0.300	0.033
			Marabá	43.72		149.97	38.73 < LC < 49.36	115.85 < LC < 194.16								
	SE	ES	Cachoeiro de Itapemirim	45.19	110.98		41.61 < LC < 49.10	96.72 < LC < 127.37	82.69 < LC < 148.58	F0	29	0.672	0.896	0.103	0.224	0.672
			Campos Belos	23.37		110.84	17.96 < LC < 30.42		82.69 < LC < 148.58							
	CW	GO	Goiânia	43.88		98.57	41.23 < LC < 46.70		89.75 < LC < 108.27	F0	29	0.552	0.759	0.241	0.207	0.552
			Rio Verde	30.01		119.29	25.35 < LC < 35.51		94.31 < LC < 150.89							
			São Simão	28.08		109.52	25.53 < LC < 33.52		87.71 < LC < 136.77							
			Uruaçu	35.64		109.54	32.36 < LC < 39.24		97.18 < LC < 123.49							
2012	CW	GO	Aparecida de Goiânia	30.48		121.39	27.17 < LC < 34.19		103.05 < LC < 143.00	F0	29	0.4631	0.825	0.207	0.362	0.463
			São Miguel do Araguaia	36.51		104.87	34.26 < LC < 38.90		95.79 < LC < 114.81	F0	29	0.293	0.586	0.414	0.293	0.293

\* RR<sub>80</sub> is informed.

Alleles S, R1 and R2 refer to the positions 1016 and 1534 of the gene coding for the voltage gated sodium channel (Nav) as follows: S = 1016 Val+ / 1534 Phe+ ; R1 = 1016 Val+ / 1534 Cyskdr ; R2 = 1016 Ilekdr / 1534 Cyskdr.

Table S4: details of the of the enzymatic activity quantification in Brazilian *Aedes aegypti* larvae populations. Colors as in Table 3 and 4.

year	Region	State	Municipality/strain	generation	ACE (Abs/hour/ptn mg)				MFO (nmoles cit/ptn mg)				GST (mmol/min/ptn mg)				α-Est (nmol/ptn mg/min)				β-Est (nmol/ptn mg/min)				ρ npa-Est (D Abs/min/ptn mg)			
					n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock
2010	NE	RN	Rockefeller	F2	256	0.04	0.14		268	40.88	78.41		265	0.38	1.10		268	17.06	62.02		268	29.65	82.75		249	3.02	5.46	
			Caicó		83	0.03		0	83	38.50		4	83	0.78		19	55	22.41		0	55	30.05		0	54	2.62		0
2011	N	PA	Rockefeller	F2	179	0.05	0.09		172	35.57	67.48		153	0.47	0.94		178	13.67	22.24		163	19.56	31.19		173	2.47	4.19	
			Pacaraima		80	0.06		6	79	34.56		1	78	0.57		21	80	12.09		0	80	21.66		14	77	1.99		3
			Castanhal		80	0.04		0	80	65.12		48	80	0.76		34	80	15.33		3	80	27.69		29	80	5.29		75
	CO	GO	Campos Belos	F2	79	0.05		1	79	26.32		15	77	0.50		9	79	13.73		1	79	22.46		5	72	1.86		0
			Goiânia	F2	80	0.06		3	80	40.18		6	80	0.93		49	80	16.39		5	80	28.38		34	80	3.75		36
			Rio Verde	F2	81	0.05		1	81	25.63		0	81	0.75		40	81	18.68		19	81	29.54		38	78	2.41		8
2012	CO	GO	São Simão	F2	78	0.06		1	80	36.84		4	80	0.87		40	79	18.98		35	80	27.41		33	77	3.47		32
			Aparecida de Goiânia	F1	80	0.06		5	80	53.97		31	80	1.28		85	80	16.05		8	80	31.91		54	80	4.40		63
			São Miguel do Araguaia	F1	80	0.04		0	80	30.76		0	80	0.73		20	80	19.41		28	80	26.44		21	80	4.58		59

The Rockefeller values used to calibrate each group of assays are shown above the municipalities. (n) Number of specimens evaluated. (med) Median of each enzymatic activity. (p99 Rock) 99 percentil for Rockefeller strain. (%>p99Rock) Rate of the population with activity higher than the Rockefeller 99 percentil.

Table S5: details of the of the enzymatic activity quantification in Brazilian *Aedes aegypti* adult populations. Colors as in Table 3 and 4.

year	Region	State	Municipality/strain	generation	ACE (Abs/hour/ptn mg)				MFO (nmoles cit/ptn mg)				GST (mmol/min/ptn mg)				α-Est (nmol/ptn mg/min)				β-Est (nmol/ptn mg/min)				ρ npa-Est (D Abs/min/ptn mg)			
					n	med	p99 Rock	% > p99 Rock	n <sup>1</sup>	med <sup>2</sup>	p99 Rock <sup>3</sup>	% > p99 Rock <sup>4</sup>	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock	n	med	p99 Rock	% > p99 Rock
2010	NE	RN	Rockefeller	F2	132	0.08	0.12		122	23.89	44.02		124	0.95	1.45		129	4.77	6.32		131	5.96	9.00		98	3.24	6.42	
			Caicó		71	0.08		3	96	26.41		0	93	1.13		11	100	6.62		63	109	5.70		22	97	3.30		6
2011	N	RR	Rockefeller	F2	155	0.12	0.22		137	28.05	44.97		100	0.66	1.07		154	5.49	7.58		153	6.33	10.77		83	3.20	6.39	
			Pacaraima		80	0.17		0	77	38.59		17	60	1.00		40	80	7.52		48	80	8.61		13	65	4.26		2
			Cachoeiro de Itapemirim		80	0.12		0	79	54.8		80	80	1.60		98	79	8.12		67	80	7.43		3	73	7.71		70
	CO	GO	Campos Belos	F2	80	0.15		0	80	28.64		8	78	1.22		65	80	6.45		14	80	6.25		1	64	4.58		6
			Goiânia	F2	80	0.16		0	78	70.3		99	79	1.25		78	80	7.90		55	80	7.72		5	78	6.23		38
			Rio Verde	F2	80	0.18		13	78	48.27		74	45	0.64		4	80	8.98		81	79	7.85		8	75	3.76		13
2012	CO	GO	São Simão	F2	80	0.18		21	78	30.98		9	54	1.12		59	80	8.03		58	80	6.98		14	67	5.04		15
			Aparecida de Goiânia	F1	80	0.13		1	77	63.42		57	68	1.58		94	80	8.54		70	80	8.12		10	79	7.40		73
			São Miguel do Araguaia	F1	80	0.18		4	78	62.41		97	52	0.78		8	80	7.50		46	79	6.55		0	79	4.80		8

The Rockefeller values used to calibrate each group of assays are shown above the municipalities. (n) Number of specimens evaluated. (med) Median of each enzymatic activity (p99 Rock) 99 percentil for Rockefeller strain. (%>p99Rock) Rate of the population with activity higher than the Rockefeller 99 percentil.